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Indian Finance

Annual Number 1942

Editor:—P. R. SRINIVAS *Managing Editor*: C. S. RANGASWAMI

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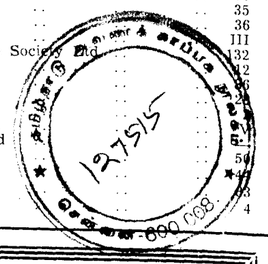
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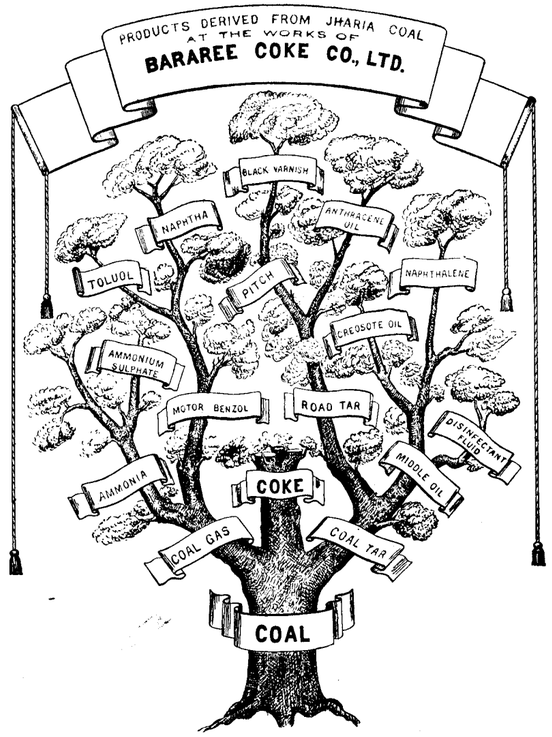
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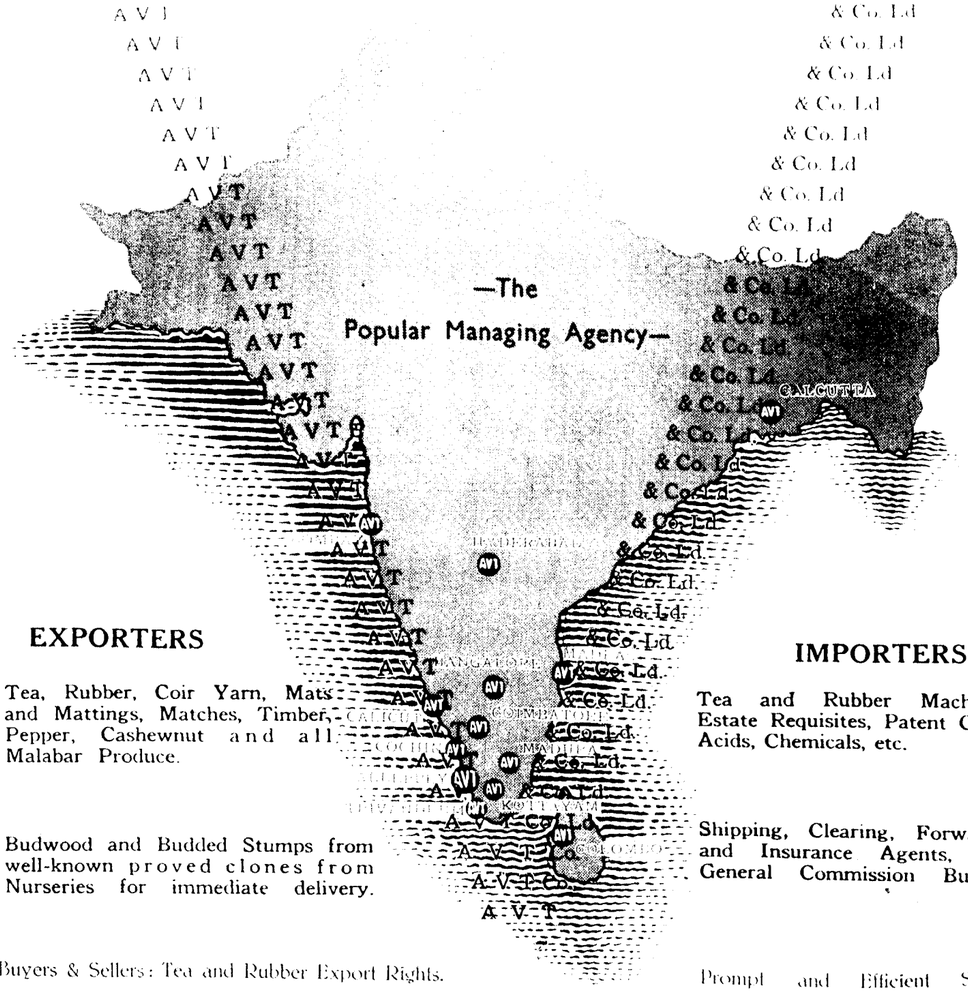
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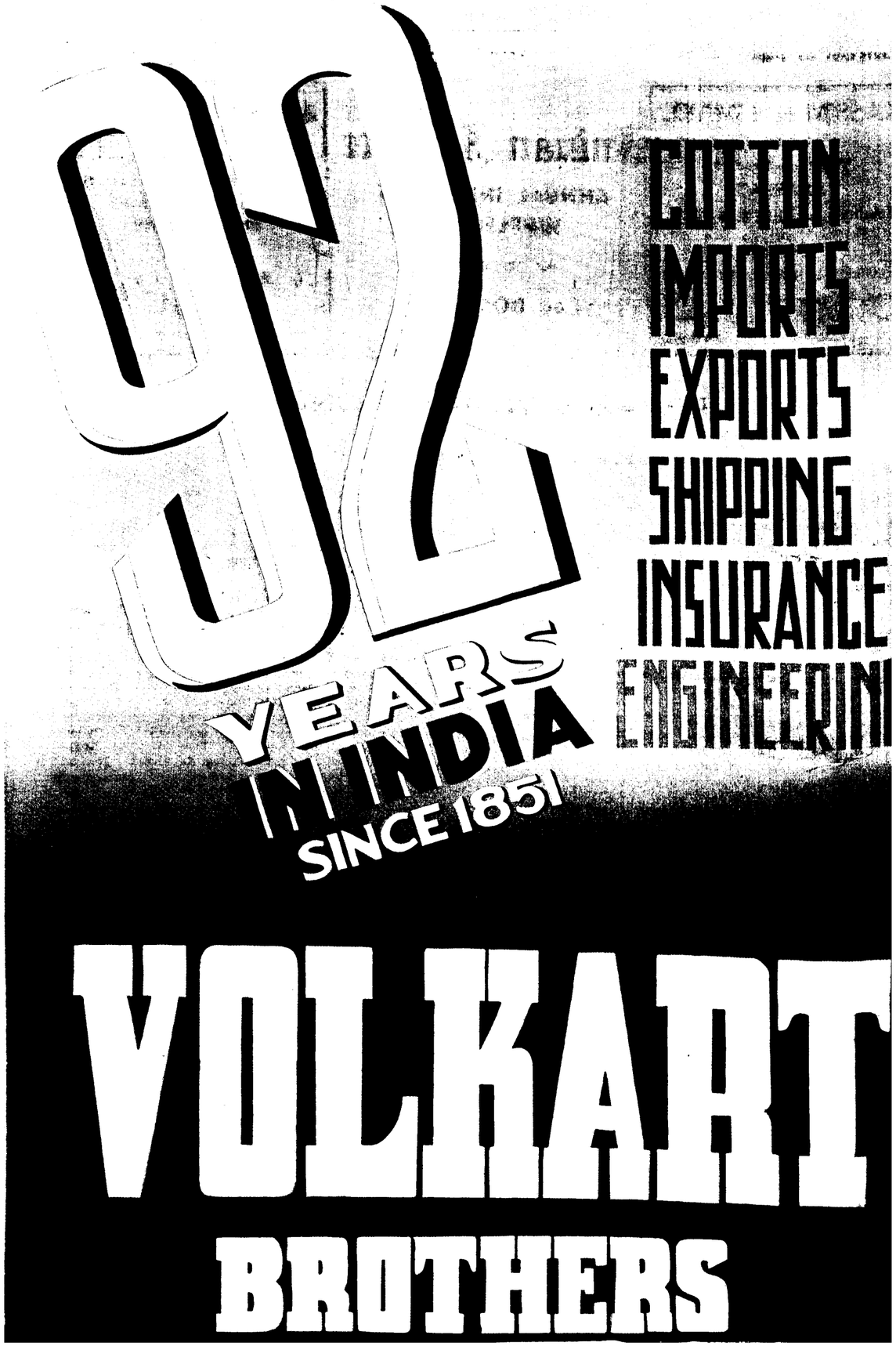
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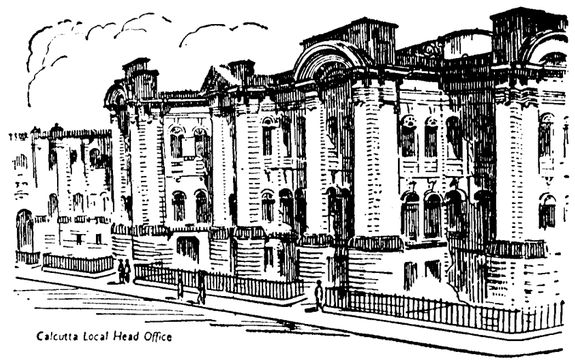
THE WAR & INDIAN ECONOMY

NATURE & SPREAD OF WAR PROFITS

When the war is more than three years old and seems, alike on the strength of major strategic developments and reasonable expectations of its duration to have passed into its second half, a survey of the experiences of Indian economy during the last three years of the war period, seems the most fitting and profitable aim for an annual publication like the "Indian Finance Industries Supplement and Year Book". It is as easy to underrate as to exaggerate the value of such a survey. It is possible, on the strength of the fulfilment of some of our past experiences, to persuade ourselves into the belief that with a little more of care and circumspection, what the future holds in store for us could be easily foreseen and made the most of. Likewise, it is tempting to give way to a feeling of diffidence, and despair of the value of periodical surveys in times like the present when unexpected upsets in the economic world seem alike to out-number and out-weigh the smooth fulfilment of earlier expectations. There is, however, no denying the value of as good a stocktaking of our national economy as it is possible to achieve in the present conditions of meagre statistical data. For our part, the outbreak of war impelled us to examine the possibilities which warfare on such a large scale and over such wide areas of the world might open for this country and how this country could profit not only by utilising the opportunities thus afforded but also by its efforts to meet the new dangers.

When during the last quarter of 1939 and the first half of 1940 we attempted in a long series of leading articles to accomplish the task of giving a lead in the matter of India's economy during wartime, we pitched our aim even higher and stated our view that the careful conduct of Indian economic policy during the war period might enable this country to accomplish for the national planning policies of the post-war period essential spade-work of a kind and degree which it would be unable to accomplish in normal peacetime. If today after three years of war and by reason of the fact that the war may be deemed to be nearing its end, we feel tempted to review India's experiences and attainments, it is not with a view to strike an economic balance sheet of India during the war period but to satisfy ourselves whether the impact of war on our national economy has been such as to place us in a better position to face the problems of the post-war era. It is true of the problems of the post-war period, as of many other problems of broad social importance that they have both a near view and a long view. In the near view of these problems, the post-war slump, which indeed the world has no reason to escape altogether, looms large; and the question for consideration would be whether the present war will leave Indian economy in a better position to face that slump. In the long view, however, the continuous problems of the national economic system and the progress of national economic life are more important. And here, one has to ask oneself what the effect of the war on our national system will be in relation to the task of economic reconstruction and development, whether the experiences of the national economy during the war will have only a episodic significance without any vital importance to what has gone in the past or what may come in the future, or whether the effects of the war will have hindered or will prove helpful to our handling of the permanent problems of our national economy.

In the leading article of the 1941 Year Book we examined the probable problems of the post-war period and particularly those pertaining to what was called the liquidation of the Supply Department and the post-war slump. In the earlier years, the new industrial activity which the war as a whole, and the war supplies in particular, had induced or were expected to induce in this country, absorbed our attention. It is interesting to note at this stage, that quite apart from what the effects of the war in Indian economy may be, it creates in the mind both of the authorities and of the students of Indian economy a variety of preoccupations. When the war broke out, men's minds were busy conjuring up delectable visions of war profits. While individual businessmen were thinking of new ventures, and how best they could be financed, or the profits therefrom invested, we, for our part, were considering how war profits could be made to serve the permanent interests of the national economy. In the next stage, the fall of France and the increasing dependence of Britain on India for supply of certain essentials, the schemes of army expansion and the convening of the Eastern Group Conference lent point to the vague hopes and aspirations of the beginning of the war. Not all these hopes were destined to be fulfilled. A feeling of disappointment followed, that is, when it was found that the recommendations of the Eastern Group Conference were not to be published or acted on with alacrity. It was widely felt that the benefits of the war to Indian economy were being minimised instead of maximised. At the same time, there was a regretful recognition that, while these benefits were being minimised, the adverse effects of the war were exceeding the gloomy fears of an earlier period. The loss of foreign markets was on a scale never dreamt of before. Official measures like price control were cutting into normal economic life at more points than were originally feared. There was little evidence of prosperity for the masses. On the other hand, the increase in prices and costs of living threatened to involve the people in serious hardships where formerly there were hopes of profits and the like. It is needless to say that such feelings when they are exaggerated, are the result of looking at isolated features without attempting to see them in their proper setting and as part of the whole. It is not difficult to recount even offhand, a few of the more pleasant experiences or to set side by side with each dark spot a bright one. Those who are thinking of the absence of the new industries must be reminded that the motor industry may yet be established in India, that each industry in India is now endeavouring to find its own requirements within the country, and that the acquisition of technical skill by thousands of our young men may prove a better foundation



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for our industrial future than the setting up of a few industrial plants. Likewise, the disappointments in respect of the Eastern Group Conference have to be corrected by the recognition that India today is having a far bigger share of the total output of our war industries than what was then thought to be necessary for her. Similar consolation is available in regard to our foreign trade; for the Empire and the U.S.A. have nearly made up to us the loss in trade consequent on the inaccessibility of the Continental countries. It is true that the economic problem of the masses is developing peculiar difficulties. But if India has not realised high prices for her raw materials, she has been at the same time making invisible exports on a large scale, through various services to the British and other allied governments, and accumulating very large sterling credits in London. In other words, if the masses of cultivators have not made the profits which they made in the last war, the country as such has profited in another sphere.

We have juxtaposed these facts, not so much to suggest that a particular view is fallacious or correct, as to bring out the fact that today, it is by no means an easy task to sum up the effects of the three years of the world war on our national economy. To have a clear idea of how India is placed in this year, the fourth of the war period, we have to look at each aspect of the national economy, gather all the available data relevent to it and form reasonably accurate ideas of the changes that have occurred. Once this task is accomplished in respect of each sector of the national economy, the resulting pictures have to be put together. If the task has been already performed in the weekly issues of "Indian Finance", it was with the emphasis laid in the main on the particular aspects of our life. And what is more, the question of the relation of this enquiry to the post-war problems in the near view or the far view was not taken up.

War finance has been true to type. The last war showed us clearly that when the great industrial nations are at war, primary producers and producers of foodstuffs experience a larger and more concentrated demand for their products and are able to obtain considerable amounts of foreign balances. In the case of India, however, these war profits, which were realised in the shape of sterling balances, were unfortunately squandered away in the hopeless attempt to maintain a high sterling-rupee rate. The last war, then, contained for us an indication not only of the profits which India might gain but also of the dangers which would threaten such profits. The question how far the circumstances of this war might be different from those of the last had, however, to be considered. But it was clear that what we might lose by way of exports to neutral countries, would be made up by the demand on account of the allies. Besides, it was reasonable to presume that the scale and nature of warfare on the present occasion would increase the services which India would be called upon to render to the United Nations. It was possible to suppose that while the exact amount of sterling accumulation up to the end of the war might be in doubt, one could count on a steep rise in India's sterling balances in London. When we examined the position three years ago we calculated that before the end of the financial year 1939-40 India would have sterling balances to the tune of Rs. 100 crores. On this basis, we pleaded that these sterling accumulations should not be allowed to proceed unheeded to the day when, through some major blunder, they would be more or less wholly wiped out. We argued that the twin dangers attendant on large amounts of foreign balances in the currency reserves are immediate inflation at home and insecurity through various circumstances in the long run. We suggested, therefore, that in the treatment of this problem of sterling balances, the authorities should not, as on the last occasion, confuse the transfer problem, the exchange problem and the currency problem. For a country like India with a large volume of foreign indebtedness, the repatriation of such debts is obviously the first charge on such favourable balance of payments. It is a matter for gratification that this suggestion on the whole found favour with the authorities. The scheme that we then outlined will be found elsewhere in this number. Here it is pertinent to note the actual events, before proceeding to consider in what terms the problem of sterling balances should be regarded and tackled in what remains of the present war period and the years that will immediately follow.

It is not possible to give the figures of India's sterling debt as at the beginning of the war and as at the end of three years. The figures that are available to us are as at the end of each financial year. That is to say, the analysis with respect to sterling debt has to cover the three-year period between April 1939 and March 1942. It may, however, be added that the position of sterling debt at the end of August 1939 could not have been materially different from that on March 31, 1939. On the other hand, it is not unlikely that the Reserve Bank has, as in the past, continued to buy 3½ per cent India sterling stock from the open market in London in the months of the current financial year. It may, therefore, be necessary to make some manner of adjustment to allow for the contingency of such open market purchases.

Bearing these facts in mind, we may now proceed to a comparison of our sterling debt as in 1939 and as in 1942. India's sterling debt which was the equivalent of Rs. 469.10 crores on March 31, 1939 had declined to Rs. 180.00 crores on March 31, 1942, thanks to the repayment of all dated loans and of 2½ per cent and 3 per cent non-terminable loans. The decrease in sterling debt for the three financial years, 1939-40, 1940-41 and 1941-42, was thus Rs. 289.10 crores. Assuming that open market purchases of 3½ per cent sterling paper have been made between April and August, 1942, we may estimate the net decrease in India's sterling debt at the round figure of Rs. 300.00 crores.

In other words, while sterling securities held by the Reserve Bank have increased by Rs. 275 crores, sterling balances utilised during this period for sterling debt redemption amount to Rs. 300 crores. Surplus sterling thus acquired in three years is, therefore, of the order of Rs. 575 crores.

The piling up of sterling resources has been helped both by ordinary and extraordinary factors. Taking India and Burma together, this being necessary from the point of view of balance of trade resulting in sterling purchases by the Reserve Bank, the growing balance of trade in merchandise during the twenty-eight months of the war was in favour of India by Rs. 204 crores against Rs. 100 crores which was the favourable balance in the twenty-eight months preceding September, 1939. While imports show only a slight reduction from Rs. 348 crores to Rs. 344 crores, exports are substantially higher at Rs. 552 crores against Rs. 444 crores. A more important factor in the accumulation of sterling balances is the increasing sterling payments being made by the British Government to the Indian Government in respect of Britain's war commitments in, and Britain's war supplies from, this country.

We have considered the question of sterling balances first, because in many ways, it is, at any rate, at the present stage, a simple issue and what is more important, the brightest spot in the picture of India's war economy. The rise in our sterling balances seems to convey an assurance to every well-wisher of the country that whatever may be the nation's vicissitudes in other spheres of its economic life, it would be wrong to allow them to lead to any gloomy conclusions. But it is well to remember that we can by no means be certain that the problem will continue to be simple or even that our sterling balances will continue to show the same rise or a rise at all. For our sterling in London is the net result of our international transactions of which our dealings with Great Britain form such a predominantly large part. Hitherto, the British Government have had to pay us far more than what they had to get from us. This favourable balance was due not only to our export of goods and services to Britain, but also to the settlement between the Government of India and His Majesty's Government in regard to our military expenditure. The course which the war is taking and the increasing burden of expenditure which it entails, tend to unsettle the settlement. As is well-known, Sir Jeremy Raisman had to proceed to London to discuss the terms on which the settlement is to be revised. Though these terms have not been published or probably have not been arrived at, it is certain that this revision must lead to an increase in our military expenditure and to a consequent slowing down of the rate of increase in our sterling balances.

There is one other respect in which the sterling problem has to be viewed differently in the immediate future. Hitherto, we have looked to the reduction of our external debt for a solution of the problem. And as has been pointed out the external debt has been reduced by about Rs. 300 crores. The sterling debt stood on March 31 last at Rs. 180 crores, while the sterling securities of the Reserve Bank figure in the statement of Dec. 18, 1942 at Rs. 469.42 crores. It is obvious that even if our sterling balances rise at a much slower rate in the future, the extinction of the sterling debt will provide by itself a solution of the problem. Besides, there are obviously



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other uses to which surplus foreign balances can be put. This question is examined in some detail in another article in this Supplement. What must be noted at this stage is that if the rise in sterling is an index of our prosperity in the past, this prosperity has to be considered in relation to such increases in the burden on the national exchequer as may come about in the future. And for this purpose we shall consider in brief the experiences of government finance during the last three years.

At the end of three years of war, the most outstanding feature of India's finances is the unimpaired integrity, the impregnable strength and proven resiliency of the central and railway budgets as well as of most provincial budgets. This country has a unique status in the world in this regard. This uniqueness is particularly noteworthy in three important respects. Firstly, the budgetary deficits, in spite of colossal increases in expenditure in defence services, are definitely on the small side; so much so the deficit in the case of India is only a small fraction of the total budget whereas, in most other countries, the deficit is very much more than the budget itself. Secondly, there has hardly been any addition to the public debt of India; and this stands in pleasant contrast to the experience of countries like Britain and the United States in whose cases the pubilc debt has been piling up at a fast pace. Thirdly, the Government of India, which was in the position of a debtor to Britain with respect to loans raised in London, is now being transformed into a creditor, with millions of pounds to its credit. These favourable developments are no doubt due to the inherently healthy factors of India's finances; but it is only fair to acknowledge that they have been greatly helped by the able and conscientious stewardship of Sir Jeremy Raisman.

When the budget estimates for 1939-40 were announced on the last day of February 1939, the Finance Member based his plans on the assumption that there would be no war. The revenue and expenditure estimates at Rs. 82.15 crores and Rs. 82.65 crores respectively envisaged a deficit of Rs. 50 lakhs, to meet which an increase in the import duty on raw cotton from six pies to one anna per lb. was given effect to. This was expected to provide an additional revenue of Rs. 53 lakhs. The prospective gap was, thus, reduced to Rs. 3 lakhs. The war broke out in September of that year; and, when Sir Jeremy Raisman outlined, in the following February, his revised estimates for 1939-40, he had to take into account a twelve-month period of which seven were marked by war conditions. Due to this cause, the budgetary position underwent a striking change; but the change was, surprisingly enough, for the better. Against an anticipated surplus of Rs. 3 lakhs, the revised estimates for 1939-40 disclosed a surplus of Rs. 91 lakhs. The final accounts for 1939-40, revealed by the Finance Member in February 1941, sprung an even more pleasant surprise. The surplus of Rs. 91 lakhs in the revised estimates increased to Rs. 7.71 crores in the final accounts for 1939-40. Thus, the first seven months of war, far from adversely affecting the budget, gave a good kick-off by providing a surplus of Rs. 7¾ crores.

The budget estimates for 1940-41 had to be framed on the assumption of continuance of war throughout the year. On the basis of the taxes in force in 1939-40, the revenue and expenditure estimates for 1940-41 disclosed a deficit of Rs. 7.16 crores. This deficit was proposed to be met by drawing mainly on the additional taxable capacity created by the war.

While the deficit was thus Rs. 6.53 crores, the net addition to debt was only Rs. 3.53 crores after making allowance for the provision of Rs. 3 crores towards the reduction or avoidance of debt during the year. It may here be recalled that a similar provision of Rs. 3 crores was made in 1939-40 accounts for the sinking fund. Taking 1939-40 and 1940-41 together, the net addition to debt was only Rs. 53 lakhs. That is to say, the first nineteen months of war accounted for an uncovered deficit of only Rs. 53 lakhs in the budget of the Central Government.

The Central Government budget estimates for 1941-42, on the basis of taxation in force in 1940-41, were a total revenue of Rs. 106.39 crores, an expenditure of Rs. 126.85 crores and a deficit of Rs. 20.46 crores. Out of the prospective deficit of Rs. 20.46 crores, it was proposed to meet Rs. 6.61 crores by additional taxation and the rest by borrowing.

In the result, the deficit for 1941-42 was estimated at Rs. 13.85 crores. The revised estimates for this year, as announced in February, 1942, turned out to be Rs. 17.27 crores. There is no reason to suppose that the actuals would prove worse than the revised figure. As the provision for reduction or avoidance of debt in 1941-42 is on the usual scale of Rs. 3 crores, the uncovered deficit in that year may be reckoned at Rs. 14.27 crores. It may, therefore, be said that, during the first thirty-one months of war, the uncovered deficit of the Central Government was only Rs. 53 lakhs plus Rs. 14.27 crores or Rs. 14.80 crores.

The budget estimate for 1942-43 places the total expenditure at Rs. 187.07 crores and the total receipts at Rs. 140.00 crores, the prospective deficit of Rs. 47.07 crores being intended to be met by additional direct and indirect taxation to the extent of Rs. 12 crores and by borrowing of Rs. 35.07 crores.

The proposals for additional direct taxation, as modified by the Finance Act of March, 1942 which are expected to yield an extra revenue of Rs. 5.30 crores, include:

(a) a tax on incomes from Rs. 1,500 to Rs. 2,000 at the rate of 6 pies in the rupee on the excess over the first Rs. 750;

(b) a central surcharge on incomes exceeding Rs. 2,000, less progressive in incidence than the old flat percentage surcharge, but raising the rate on the whole from 33⅓ per cent to a minimum of 50 per cent; and

(c) an increase in the Corporation Tax to 1½ annas in the rupee. The indirect taxation proposals, estimated to result in an additional revenue of Rs. 6.70 crores, comprise enhanced postal, telegraph and telephone rates, an overall surcharge of 20 per cent on the import tariff except on raw cotton, salt and petrol, an increase of 3 annas per gallon in the excise and import duty on motor spirit and an increase in the excise duty on kerosene and silver equivalent to the higher Customs duties.

The budget of this year contains new features in the nature of savings schemes designed to alleviate the pressure of the enhanced volume of purchasing power on the inevitably limited supplies of goods and services available for private consumption under war conditions. Thus, an option is given to new assessees for income-tax under the lowered exemption limit, to escape the liability by depositing an amount approximately 1¼ times the amount of tax assessed, in the Post Office Defence Savings Bank, such deposits not being ordinarily withdrawable till one year after the end of the war. Besides, to mitigate the incidence of the enhanced surcharge on incomes between Rs. 2,000 and Rs. 6,000, which works out at more than 50 per cent., a provision has been made to refund a portion of the tax equal to ½ per cent. of the assessees' total income, after the end of the war. Again, Government have announced their readiness to contribute an amount up to one-tenth of the net excess profits tax, provided that the assessee deposits a sum equal to double this amount, to a reserve to be used for the object of assisting industrial rehabilitation after the war.

From this prospective deficit of Rs. 35.07 crores has to be deducted Rs. 3 crores, being the appropriation towards the sinking fund. The uncovered deficit is, therefore, Rs. 32.07 crores. In this context, there is a significant qualifying factor. The budget estimates have been framed on the assumption that the lease-lend supplies from America are to be paid for on a cash basis. It is obvious that no pressing cash payment is contemplated with regard to lease-lend supplies. One wonders whether repayment in this respect is anything more than a hypothetical contingency. The provision for such cash payment is Rs. 45 crores. If this provision is reversed, the result is that the anticipated uncovered deficit of Rs. 32.07 crores is converted into a surplus of Rs. 12.93 crores. It may be added, however, that the developments in the budgetary position since last February have been such as to result in a much larger deficit than the figure envisaged in the original budget estimates. At the same time, revenue receipts have also been making an excellent showing. And it may be justifiable to hazard the guess that, subject to the reversal of the proposal for cash payment of lease-lend supplies, the revised estimates for 1942-43 may disclose neither a deficit nor a surplus.

The increase in military expenditure to which reference has already been made, and which may be due as much to the waging of warfare near our frontiers as to the revision of the financial settlement threatens to end the finances of the current year in a considerably large deficit. That, however, belongs to the future and we can only note at this stage that the first three years of the war have not impaired the national

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finances. On the other hand, we might even go further and suggest that the financial position of the Raiways has improved vastly as a direct result of the war and that provincial finances are far from having suffered a setback. The finances of the Provinces have perhaps no close relation to the question of how India will be able to weather the storms of the war period. But it should not be forgotten that depending as they do on the well-being of cultivators and of our principal agricultural products, they may get out of gear and cause serious embarassment. We shall content ourselves therefore with giving below a table showing the revenue and expenditure of the provinces during the last three years.

(In Lakhs of Rupees)

	Accounts 1939-40			Accounts 1940-41			Revised Estimates 1941-42			Budget Estimates 1942-43		
	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus or deficit	Revenue	Expenditure	Surplus deficit
Madras	16,66	16,37	+29	18,08	17,55	+53	19,42	19,24	+18	18,98	18,94	+4
Bombay	13,14	12,83	+31	14,48	13,61	+87	15,66	15,28	+38	15,18	15,17	+1
Bengal	14,32	13,71	+61	13,54	14,45	—91	15,29	16 32	—1,03	15,70	16,75	—1,05
United Provinces ...	13,52	12,45	+7	14,65	14,64	+1	16,50	16,32	+18	17,12	17,08	+4
Punjab	11,69	12,06	—37	12,89	12,20	+69	14,20	13,95	+25	13,54	13,64	—10
Bihar	5,43	5,36	+12	6,18	5,88	+30	6,51	6,04	+47	6,43	5,80	+63
Central Provinces ...	5,69	4,76	+33	5,26	4,96	+30	5,18	5,13	+5	5,26	5,23	+3
Assam	2,93	2,92	+1	3,29	3,13	+16	3,21	3.32	—11	3,19	3.17	+2
Northwest Frontier Provinces ...	1,83	1,87	...	1,92	1,83	+9	2,19	2,09	+10	1,97	1,96	+1
Orissa	1,88	1,84	+4	1,93	1,88	+11	2,06	1,97	+9	1,97	1,97	...
Sind	4,29	4,05	+24	5,20	5,05	+15	5,43	5,57	—14	4.81	4,96	—15
Total ...	90,83	89.22	+1,61	97,48	95,18	+2,30	105,65	105,23	+42	104,15	104,67	—52

War conditions have thus effected a change for the better in respect of provincial budgets in spite of the increasing financial burdens. The better showing of provincial finances is partly due to fresh taxation imposed by most of the provinces in 1939-40, and largely due to rapid and progressive increase in the share of income-tax accruing to provinces. The improvement in provincial finances may, in part, be also attributed to the stimulating effects of war on receipts under land revenue, excise and forests.

Fresh taxation was resorted to by most of the provinces to meet (1) increasing expenditure as a result of their spending policies, particularly with regard to nation-building departments and (2) the losses in receipts due to the abandonment of revenue on account of the introduction of Prohibition, remission of land revenue, etc. Important among the new provincial taxes were (1) taxes on sales, (2) taxes on property, (3) taxes both graduated and ungraduated on professions or employment and (4) taxes on entertainments, prize competitions, betting, etc.

Equally gratifying was the experience with regard to 1940-41. The original estimates showed a prospective deficit of Rs. 77 lakhs, combined revised estimates, however, reduced the deficit to Rs. 25 lakhs. The final accounts provided an even more gratifying surplus than in the previous year, the figure being Rs. 2.30 crores. This was due to higher surpluses in Madras. Bombay and the Punjab, the conversion of Assam's deficit into a surplus and a smaller deficit in Bengal.

The original budget estimates for 1941-42 placed revenue at Rs. 95.30 crores, expenditure at Rs. 96.17 crores, and deficit at Rs. 87 lakhs. In the case of Bengal which expected a deficit of Rs. 1.34 crores, the estimates for 1941-42 did not take into account the estimated receipts from new taxation measures such as the General Sales Tax which was passed after the introduction of the budget. The Punjab budget included a small amount of taxation on account of a General Sales Tax and an Urban Immovable Property Tax. The Governments of Madras and Bombay were, on the other hand, able to effect some reductions in taxation. Madras reduced the sales tax from $\frac{1}{2}$ per cent to $\frac{1}{4}$ per cent and Bombay lowered the Urban Immovable Property Tax by 20 per cent. The revised estimates for 1941-42, however, show a substantial increase in revenue to Rs. 105.65 crores and in expenditure to Rs. 105.23 crores, the original deficit of Rs. 87 lakhs being converted into a surplus of Rs. 42 lakhs. All the provinces excepting Sind share in the improvement. In the case of most provinces, there were larger increases in expenditure than in revenue.

The budget estimates for 1942-43 are framed on the basis of a combined revenue of Rs. 104.15 crores, expenditure of Rs. 104.67 crores and a deficit of Rs. 52 lakhs. Bengal expects an additional revenue of Rs. 1 crore from the Sales Tax Act, 1941, and Rs. 37 lakhs from the new Bengal Raw Jute Taxation Act, 1941. Bombay has reduced the Urban Immovable Property Tax to 3 5/6 per cent from the 1st April, 1942 despite an appreciable drop in revenue on account of the restricted scope for export of cotton and groundnuts. In the Punjab, the rate of the new Urban Immovable Property Tax Act, 1940, is raised from $3\frac{3}{4}$ per cent in 1941-42 to $7\frac{1}{2}$ per cent from 1942-43, with an estimated revenue of Rs. 17 lakhs for the year, while the General Sales Tax Act, 1941, another new taxation measure, is expected to bring in Rs. 7 lakhs. Under the refunding arrangements effective from 1942-43 in respect of the Lloyd Barrage Debt, the Sind budget includes a payment of Rs. 75 lakhs, the first of 15 equal annual payments.

Another feature is the rapid and progressive increase in the share of income-tax accruing to provinces. In the first year of provincial autonomy, the share of the provinces in income-tax receipts was Rs. 1.25 crores; in 1938-39, it increased to Rs. 1.50 crores; 1939-40 witnessed a sharp rise to Rs. 2.79 crores; thereafter, the provincial share has risen by leaps and bounds to Rs. 4.16 crores in 1940-41, Rs. 7.39 crores in 1941-42 and Rs. 8.37 crores in 1942-43.

On the other hand, the share of the jute export duty assigned to the jute-producing provinces has continually declined during the war, and is estimated at Rs. 1.75 crores in 1942-43 as against Rs. 2.65 crores in 1937-38. There is also a reduction in subventions from Rs. 3.12 crores in 1937-38 to Rs. 2.75 crores in 1942-43 as, under the terms of the Niemeyer Award, the annual grant of Rs. 25 lakhs to the United Provinces must be discontinued from 1942-43 and that to Orissa was to be reduced from Rs. 43 lakhs to Rs. 40 lakhs.

The total permanent debt for the provinces as a whole increased from Rs. 15.07 crores at the end of 1938-1939 to Rs. 23.02 crores at the end of 1941-42 while floating debt declined from Rs. 1.50 crores to Rs. 1 crore in the same period. The total of 'Loans from the Central Government' declined from Rs. 123.24 crores at the end of 1938-39 to Rs. 119.02 crores at the end of 1941-42.

From the increase in the Provincial share of the income-tax, one can deduce the improvement in the Railway contribution to the Central Exchequer. In fact, in this period of heavy military expenditure, the problem of the central finances would be wellnigh insoluble except that war, too, brings its

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own compensatory advantages in the sphere of finance. The two chief sources of relief are the Excess Profits Tax and the Railway Contribution both of which may be directly attributed to the war. This is heartening, inasmuch as it contains the assurance that so long as the war lasts there will also be two dependable sources of additional revenue, whatever may be their significance to the national economy. We may note in passing the improvement in the position of the Railways as seen in the following table

(In Crores of Rs.)

	Accounts 1938.39	Accounts 1939.40	Accounts 1940.41	Estimates (Revised) 1941.42	Estimates (Budget) 1942.43
Total Traffic Receipts	99.62	97.65	111.94	127.00	125.50
Net Misc. Receipts ..	0.23	0.64	0.85	0.94	1.56
Total Receipts ..	99.85	98.29	112.79	127.94	127.06
Total Working Expenses (including depreciation ..	69.18	64.85	65.65	73.13	70.76
Net Revenue ..	30.67	33.44	47.14	54.81	56.30
Deduct Interest Charges ..	29.30	29.11	28.68	28.61	28.35
Surplus ..	1.37	4.33	18.46	26.20	27.95
Contribution to General Revenue ..	1.37	4.33	12.16	19.12	20.13
Contribution to Railway Reserve Fund	..	..	6.30	..	..

While the increase in sterling balances and the position of the national finances and of the Railways are certainly a matter for gratification, one must beware of exaggerating their value as indices of national prosperity. For it should not be forgotten that our sterling balances have been obtained from a number of sources, only a few of which have a close relation to the economic well-being of the masses. The relation will be clearly seen from the following list of the sources from which our sterling balances are derived :

(1) Favourable balance of trade.
(2) Sales of gold and silver.
(3) Cost of services rendered to His Majesty's Government, e.g. maintenance of Italian and other prisoners of war, repairs to ships etc., etc.
(4) Value of supplies made to Britain or other allied nations.

These are the four broad divisions into which the sources of our sterling balances may be said to fall. Of these, it will be seen that only the favourable balances of trade is an index of well-being. Not that other items represent a loss. But their relation to current well-being is decidedly different. In the case of maintenance of prisoners of war, though, doubtless, India is being paid the cost thereof by His Majesty's Government, at the moment the strain on the total resources of foodstuffs and consumer's goods is increased thereby and the immediate effect from the point of view of the people is a hardship, unless it can be shown that the increased demand for such goods has been adequately met on a profitable basis of production. The effect of the other items of services rendered and supplies made to the Allies is also similar. The payment made to the workers and the staff represent an addition to the total purchasing power in the country, which can only raise prices and accentuate the scarcity of goods, unless production keeps pace with the demand. This, however, is an aspect of the question which we must consider in greater detail at a later stage. In the case of export of bullion the increase in sterling balances represents only a change in the form in which a part of the national wealth is held. What has been said of the foreign balances is also true of the central budget. After all, there has been no respite in increased taxation and the period under review is one in which there was little of active warfare in which India is directly interested. As for the Railways, the improvement is attributable solely to the war conditions; and the railways cannot serve the civilian population half as well now as during peacetime.

The relation between the increase in national income in a period of war and national prosperity in the first instance, and national progress in the long run, is a subject which does not permit of easy or quick conclusions. We have therefore to examine the other aspects and the various sectors of the national economic life. Foreign trade is usually the best index inasmuch as it is not only a determinant of the well-being of the large majority of people, but its vicissitudes are readily seen in the figures of foreign trade. With the onset of war, not only a large mass of details in regard to foreign trade is withheld from the public, but not all the transactions are recorded in the seaborne trade figures. Nevertheless, the statistics of foreign trade are invaluable for our present purpose of examining how India has fared during these three years of war.

Looking back over the last three years, one feels a sense of relief that this country has been able to get over the shocks of the early stages of the war period and the loss in trade, with the closure of certain markets, has been more than gained by the increase in trade with certain other new markets. The expansion in export trade is limited only by the availability of shipping space. With the large natural resources and a favourable geographical position, it is convenient for the United Nations to draw upon this country for their supplies.

It is, indeed, remarkable that this country has stood to gain ultimately on account of the war situation in spite of the loss of the continental markets, and more recently of Japan, Malaya, the Straits Settlements, Burma and the Netherlands East Indies.

Coming to the course of trade during the first three years of war, figures are available at the time of writing this, only for eleven months in the third war period September, 1941 to August, 1942, total exports in 1939-40 (first war year) were Rs. 212.64 crores ; in 1940-41, Rs. 157.58 crores ; and in the eleven months of 1941-42 Rs. 213.13 crores. The figure for 1941-42 was adjusted on the basis of the figures for July, 1942 ; the total for 1941-42 will be about Rs. 228 crores. During these three years of war, imports totalled Rs. 161.37 crores in 1939-40 and Rs. 175.23 crores in 1940-41. In the eleven months of 1941-42 actual imports were Rs. 114.14 crores and the figures for 1941-42, adjusted on the basis of July 1942, will be about Rs. 124 crores. Total exports in the first three years of war, will thus amount to Rs. 628.22 crores against total imports of Rs. 460.6 crores. The favourable balance of trade thus amounts to Rs. 167.62 crores. In the twelve months ended March, 1939, a year in which peace-time conditions existed, the surplus of exports over imports was only Rs. 10 crores. So that on a three-year basis the total favourable balance of trade was only about Rs. 30 crores. In spite of the serious handicaps and the disturbances to trade experienced by our exporters, the advantages accruing to this country on account of the present emergent conditions is thus of the order of Rs. 130 crores. The improvement may be striking, but compared to the achievements in the field of industry, even with our limitations, the addition to the purchasing power of this country, having consideration to the higher level of prices, is nothing much.

An actual study of the figures shows that the improvement in the balance of trade in our favour was due more to the declining rate of exports than to any appreciable expansion in the volume of trade. To this extent, it must be said that the improvement is negative. Our trade in the important commodities is still on a very small scale, cotton export in 1940-41 being Rs. 17 crores lower than the figure for the first year of war and jute exports Rs. 10 crores lower. Oilseeds in spite of the recent improvement in trade conditions are still Rs. 1¼ crores lower while trade in oilcakes has practically disappeared. The only improvements to be noticeable in the export of articles, wholly unmanufactured, are in metallic ores, and hides, undressed. Prior to the fall of Burma there was a big export trade in food grains but we are not sure whether the trade in this regard has been actually discouraged during the past few months in view of the present conditions in the country. Other notable increases are those in tea and sugar. Total exports of food grains, drink and tobacco show an improvement from Rs. 38.42 crores in 1939-40 to Rs. 51.87 crores (11 months) in 1941-42. Raw materials and produce and articles mainly unmanufactured show a decrease in the same period from Rs. 82.43 crores to Rs. 54.64 crores. The increase in the exports of manufactured articles would be even more pronounced (the increase being from Rs. 89.77 crores in 1939-40 to Rs. 102.94 crores in 1941-42) but for the decrease in the exports of jute manufactures, hides and skins and metals, iron and steel. The only saving feature is the boom in exports of cotton manufactures from Rs. 10.65 crores to Rs. 41.23 crores.

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Coming to a study of the direction of trade in 1940-41 and 1941-42, out of the total exports of Rs. 213.2 crores in the eleven months of the third war year, Rs. 135.24 crores was taken up by Empire countries and Rs. 77.96 crores by foreign countries. In 1940-41, out of total exports of Rs. 187.53 crores, the share of Empire countries was Rs. 120.87 crores while that of foreign countries was Rs. 66.66 crores. The improvement in trade with Kenya, the Union of South Africa, Canada and Australia is substantial. Of the total increase of exports of Rs. 14½ crores in the eleven months of 1941-42, nearly half is accounted for by the United Kingdom. Among foreign countries the trade with Iraq shows an increase from Rs. 1.11 crores in 1940-41 to Rs. 5.01 crores in 1941-42, Iran from Rs. 0.17 crores to Rs. 4.81 crores, Egypt from Rs. 2.91 crores to Rs. 6.84 crores, the U.S.A. from Rs. 31.22 crores to Rs.. 38.51 crores and the South American Republics from Rs. 5.93 crores to Rs. 7.9 crores. There is considerable scope for a further increase in trade with all American countries but the difficulties on account of shipping prevent us from taking advantage of the position. The development of trade with the Middle East countries and the greater co-operation between Empire countries is the most important feature of the present war.

Somewhat reassured by the figures of foreign trade that the country has not suffered unduly by the prevalence of the war, we may now turn to a consideration of the position of Indian industry. Here one has, no doubt, to distinguish between the progress of Indian industries and the progress of India's industrial development. The latter has reference to Government policy and the like; and as we are at this stage concerned primarily with an objective account of the principal developments during the war period, we shall note at first the progress of Indian industries. Even a cursory glance at the figures of production will suffice to convince one that on the whole, Indian industries have enjoyed considerable expansion during the war. The interference with communications caused by the war, it is often forgotten, really cuts both ways. While on the one hand, it causes a stoppage of imports of consumer's goods, it, on the other hand, deprives industries of some of the essential stores and disables them for taking full advantage of the increased demand and wider market. The disadvantage has to be overcome wholly or in part before the industries can avail themselves of the new opportunities. Doubtless, industries have been adapting themselves to the new conditions. But, at the same time, it should not be assumed that the war conditions affect all industries in the same manner. An industry like iron and steel benefits directly and to the greatest extent from the war demand. While the Government has need for the utmost of output that the industry is capable of, there is no danger that the normal civilian demand will be catered to by others or that the postwar and peacetime market, will be affected in any way. The cotton textile industry also tastes liberally of the bounties of war. In fact, it benefits from war conditions in more diverse ways than iron and steel. For, the Indian cotton textile industry is virtually rid of the competition of the importer. It is also called upon to supply foreign markets which have been cut off from their usual sources of supply. The demand for its products on war account are not less; at the same time, the internal market for civilian needs is more pressing and lucrative than ever before. The other industries are not so fortunately placed in relation to the war. Jute has had to effect a reduction of acreage and output as a result of the inaccessibility of normal peacetime markets. In the case of sugar, prolonged bungling on the part of the Government and industry and a most inexplicable failure to foresee the pressure of demand in the third and subsequent years of the war has arrested the increase in production which with a degree of passivity on the part of those concerned, would have come about in the natural course. As for other industries, paper has a scarcity value, which the productive equipment of the country is still unable to reduce appreciably. It fact, it has been pointed out, though only as a joke, that the price of paper may well prove a safeguard against any disastrous inflations. Cement has of late figured among goods that are denied or at least grudged for ordinary civilian consumption. The huge programme of building aerodromes has set up a very big demand for cement; and the cement industry serves the war demand with great alacrity.

In spite of the stimuli mentioned above, the increase in industrial production is of a very limited kind. Cotton manufactures stood at 4269 million yards in 1940-41, the same level as that of 1938-39 and improved to 4479 million yards in 1941-42. The figures for the first quarter of 1942-43 show a small rise as compared with the corresponding period of the previous year, yarn going up by about 6 percent and piecegoods by about 1 percent. Jute manufactures show a decline in the first quarter of the current year of over 12 percent. Paper production shows an even more serious fall, while sugar production has gone up in the last season.

Though statistics of production is neither up-to-date nor comprehensive, there is sufficient to warrant the conclusion that the increase in industrial production is not such as to add to the volume of consumers' goods available to the country's population. It is not sufficient even to meet the increased demand for the products of Indian industry. If the usual market estimates of consumption were available for our industrial products, it would be found that the country is doing with less than formerly. Everyday experience and the broad facts of our economic life certainly confirm the impression. The rise in prices during the last one year, connected as it is with the increase in the volume of currency, is also due to the increased demand relatively to the increased supply. None of the products of Indian industry is as much in supply as formerly. Sugar is scarce; cement is not easily obtainable; cotton goods are prohibitively priced; for paper there is a near famine.

The position in regard to foodstuffs and agricultural products is hardly better. Here, too, the demand on account of the war presses hard on supplies which have little or no elasticity. In the case of rice, India has suffered in both ways, of decrease of supply and increase in demand. The loss of Burma has meant the stoppage of imports of about 3 million tons per year. At the same time the duty of supplying Ceylon has devolved on this country. Some increase in acreage under rice has been made possible by the need to restrict the area under jute. But so far as this season is concerned, the damage caused by the cyclone in Bengal has reduced very considerably the surplus which Bengal will be having. The wheat-growing areas are restricted, compared to rice, but it would appear that with judicious control and distribution, serious shortage can be avoided.

If we take Indian agriculture as a whole, the position of the money crops is not in consonance with the hopes of war profits formed at the beginning of the war. It has been already mentioned that in the case of jute, the prosperity of the early months of the war proved to be shortlived and that restriction of acreage is recognised to be necessary. In the case of cotton, too, a similar reduction has to be accomplished. The woes of groundnuts are well-known. It will be a long time, before the discovery of special dietetic merit in groundnuts can alleviate the sufferings of groundnut growers. In Indian agriculture to-day, the growers of minor food crops like ragi, barley, jowhar are perhaps in a better position than before the war. The pressure of demand on wheat and the consequent high price of the grain has already diverted a part of the demand to the minor foodcrops. It is not known how the additional one million acres under foodcrops, which the authorities claim to have brought about by the "grow more food" campaign, is distributed among the various crops. But since a large part of it must be land of comparatively low fertility, the minor foodcrops must have a large share of the additional acreage. However, the increase in the area, it must be remembered, is a late developmnt. Th first three years of the war can only be said to have subjected Indian agriculture to numerous and vareigated strains and to have brought to the Indian a real and near threat of food shortage.

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One of the favourable results of the pressure of war conditions on Indian agriculture is the institution of research with a view to make Indian agricultural, particularly forest, products serve the same purpose in manufacture of war goods as imported products. Such research became necessary when, as a result of the war, these imported products were no longer available. Instances of these are given in the agricultural section of this supplement. It is quite possible that after the war is over India will be left with a few such products with fair prospects of an export trade. This is, however, so small a part of the total picture of India's agriculture during wartime that at the moment one is more impressed by such results as food shortage than by the prospects of export trade in a few commodities of minor importance.

It is not possible to say how far the increase in the prices of agricultural products will have had the result of putting more into the pockets of the cultivators. For one thing, the various measures of price control have not operated in favour of the Indian cultivator. While, on the one hand, the agriculturists have not been free to get the utmost advantage of the rise in the prices of their produce, they have had comparatively little protection from the rise in the prices of goods which they have to buy. Probably, the actual effects of war economy on the Indian agriculturist will be gauged either directly by means of economic survey instituted as a preliminary to post-war reconstruction or indirectly through the working of co-operative societies.

Of the various classes of the population only the industrial workers may be said to have indubitably gained by the conditions of our war economy. Dearness allowances and increments in wages have been granted liberally and with alacrity born, in the main, of the fear that otherwise the industrial workers might be annexed by the Congress or other anti-governmental parties in the country. While there is no doubt that the industrial worker has been in receipt of higher wages and bonus, it is not yet clear whether he has utilised the present opportunity for permanently improving his economic position. The prevalent view is that the industrial worker has gone in for cheap excitement and is in no better position than when the war broke out. Among the business and commercial classes, those who have been in receipt of contracts from the Supply Department have been able, despite the apparently rigorous scrutiny of costs and the imposition of excess profits tax on higher income and super taxes, to make good money during the war period. In spite of all this, it is doubtful if war profits have occasioned any considerable reshuffling of income groups within this country.

Considered from the national standpoint, there are tangible gains to record. There is firstly the outstanding fact that India has ceased to be a debtor nation. Though this is obviously an over-simplification of India's economic position, the wiping out of all the foreign obligations of the Government of India inclusive of contingent obligations in the future such as pensions is almost a revolutionary change and the more so because it has been accomplished within the space of three years. Whether this development will extend to foreign interests in this country or not will depend largely upon the duration and nature of the war in the future. It would appear that the Government do not regard with favour the idea of British investments in India passing to Indian hands. At the moment, it would seem that a further avenue for the utilisation of our sterling balances will be found in earmarking amounts for the supply of British machinery to India in the period of post-war economic reconstruction. At least, to this extent, it may be said that India has not only ceased to be a debtor nation, but has also taken a step on the path of becoming a creditor country.

In the other spheres of our economic life, it is not possible to appraise the significance of the changes that are now happening. If the main industrial problem of India after nearly two decades of discriminating protection is to acquire the capacity to produce producers' goods, it is doubtful if the war will have done much to facilitate its solution. Nevertheless, the large amount of technical skill and plant and machinery

(*Continued on page* 16)

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PROBLEM OF LEASE-LEND RELATIONS WITH U. S.

By far the most notable feature of the economic side of Allied war effort is the provision of aid by the United States of America to all nations who are active opponents of the Axis on terms which have come of late to be known as Lease-lend. The term "Lease-lend," short as it sounds, really stands for a highly elaborate and complicated piece of American legislation which makes appropriations on a truely American scale for the purpose and prescribes the terms on which this appropriation is to be used by the President to enable the countries, "whose defence the President deems vital to the defence of the United States to procure assistance from the agencies of the U.S. Government." It has behind it a long period of transition from the spirit of isolationism which actuated the American public and the American Congress to the acceptance, at once realistic and enthusiastic, of the obligations of a country placed as the United States of America is to aid, as well as she can, the defence of Democracy and Civilisation. Just as in its origin, the Lease-Lend Act marked a slow and necessarily reluctant transition from isolationism to active intervention, likewise, the administration of the Lease-Lend Act and the building up of the general body of principles and practices has had to be done slowly over these years. The ring of countries to whom lease-lend aid was to be provided was also slowly expanding, partly because the active opponents of the Axis grew in number, and partly because the provision of lease-lend aid made it increasingly difficult to allow normal trade to function in the normal manner. Chronologically, if not otherwise, India may well be said to come last on the list of beneficiaries of lease-lend aid from America; and the peculiarities of the financial, economic and political conditions of India, added to its late entry into the orbit of lease-lend, have naturally created problems peculiar to the lease-lend relations between these two countries. If it is remembered, that even in the case of Britain, for whom primarily the Lease-Lend Act was intended, the lease-lend obligations have not yet been clearly determined but have been left for final consideration at a later stage, it will be easy to appreciate that these relations in the case of India are even more vague. Without making a grievance of this uncertainty or seeing in it room for sinister, ulterior purposes, the Indian public may yet try to apprise the issues involved and to clarify its ideas in regard to it.

For such a purpose, the history of the lease-lend legislation in America prior or subsequent to its passage through the American legislature is not quite indispensable. Nevertheless, it is well to realise, as it has been hinted already, that the Lease-Lend Act was passed by the Congress nearly months before America's entry into the war and that the legislation was conceived by America when she had not fully outlived the isolationist phase or been driven to accept American belligerency in this war as inevitable. But American public opinion had begun to recognise that the further triumph of Nazi arms in Europe was fraught with the gravest danger for the new world in general, and the U.S.A. in particular. Never lacking in sympathy for the Democracies, America was able, as soon as the depletion of Britain's dollar resources became patent, to realise that the utmost provision should be made for the continuance of the resistance of the Democracies to the tide of Nazi aggression. But since the frame of mind, which actuated the Johnson Act and the Neutrality Act had not been wholly outgrown, the Lease-Lend Act had to be passed embodying the two leading principles of aid to democracy out of stipulated Congress appropriations according to the discretion of the President and leaving the terms and manner of repayment for decision at a later stage. Such a piece of legislation would be altogether difficult to understand or explain except against the background of the history of war debts and their repudiation, the growth of the American spirit of isolationism on both political and financial grounds, its manifestation in the Johnson Act and the Neutrality Act with the special cash and carry clause and the slow emergence of a spirit of cheerful acceptance of America's responsibility in this world war.

This change in the American attitude is to be attributed firstly to the phenomenal successes of Hitler in the earlier stages of the war and secondly, to the extraordinary skill, tact and sincerity with which Lord Lothian presented the position of Britain in regard to her ability to pay for American goods in American currency. As the Federal Reserve Bulletin of May 1941 pointed out, "the exhaustion of available British reserves which is the immediate occasion of the diminished gold movement, has forced the British into heavy sales of American investment in order to continue making dollar payments and both American securities and direct investments have been liquidated." The American public reacted to this development in the manner in which one would expect it to, and the result was seen in the passing of the Lease-Lend Act which, despite the opposition of the diehards of isolationism, found its way into the Statute Book.

It is no matter for surprise, therefore, that lease-lend relations between India and Britain have been left so far in a state of even greater uncertainty than those between the United States of America and other countries. This uncertainty, regrettable in any conditions, are even more so in the case of India, not only because India can ill afford to have it in regard to her financial commitments, but also because as a subject nation or, at best, as one newly freed, India would hardly be in a position to ensure full respect for her rights. A third reason may also be cited namely, that American attitude to aid provided to foreign countries under lease-lend terms is apt to grow less benevolent and more stringent as time passes on. Evidence of this tendency can already be seen in the frequency with which one hears of reciprocal lease-lend which one would have thought would not normally be taken for granted. There is also the circumstance that there is more insistence in America that lease-lend is not an outright gift but that America expects some return, the form of which will have to be gone into afterwards.

Data about the supplies to India under lease-lend terms have been so meagre that no useful or accurate picture of them can be formulated. While it is known that the budget for 1942-43 contained appropriations of about Rs. 40 crores for a contingent liability to make immediate payments for supplies from America, it is not known up to the moment of writing whether the value of supplies had reached or exceeded that figure, or whether the right to such payments has been waived in lieu of reverse lease-lend facilities to be provided by India. It may be reasonably supposed that American supplies to India are much in the nature of materials that in normal times would have passed through the ordinary commercial channels, but which have now to be brought within the orbit of the lease-lend machinery. As has been hinted already, the enforcement of the principles embodied in the Lease-lend Act in America involves a degree of official interference in the distribution of productive work among the important factories and workshops in the United States. During a war like the present, the system of priorities tends to have an expansive character leaving less and less of the industrial machinery of the country untouched. India's requirements, as indeed the requirements of any other country, cannot therefore be met except by bringing them within the scope of the administration of the Lease-lend Act and making adequate provision for their satisfaction. If India were a theatre of war, or if, indeed, India herself had a larger share of direct responsibility for campaigns like the Burma offensive, it is understandable that the supplies to India would have had a larger proportion of munitions and other direct necessaries of modern warfare. But inasmuch as the Burma offensive is primarily the interest of America and Britain, it seems unlikely on the face of it that large imports of munitions would have bene made into India on India's account.

Nevertheless, since supplies in wartime are so largely on Government account, the problem as to how the return for these supplies is to be made remains to be considered. It has been said already that the intention of the Government of India was to make cash payments in regard to these purchases, but at the time of the 1942-43 budget Sir Jeremy Raisman made it clear that it was only a contingent liability inasmuch as other means of payment might be preferred by the United States of America. It was the first hint of the problem of reciprocal lease-lend which since that time has emerged more clearly into public view. It is too early to expect the American position to be stated fully and finally. For the present, it would appear that America would be content if the Government of India would meet all the requirements of the American forces in this country which have to be paid for in Indian currency. In fact, at his stage, the whole principle of lease-lend is regarded as one by which the country in receipt of

lease-lend aid would recognise and discharge its obligation to meet, on behalf of America, all the expeniture incurred in that country's own currency. Without accurate quantitative items involved, it is extremely difficult to determine the equity of this course of action.

Put, considering that the discharge of reciprocal lease-lend is by no means a full discharge of the obligations under lease-lend, it would appear that India's relations with America in this regard are by no means free from the possibility of misunderstanding or injustice. Strictly speaking, lease-lend relations have to be considered not in themselves but as part of the far wider problem of inter-Allied obligations during the present world war. And, in this context, it is necessary to bear in mind that, though it would be extreme and fallacious to hold that India is neither a party to, nor interested in, this war, her position as a subject nation and the incalculable handicaps that have been imposed on her by the sins of commission and omission of Britain's economic policy in India in the pre-war period, render her unfit to take obligations in the same spirit and in the same way as other members of the United Nations. There are, besides, a number of considerations which will entitle India to greater consideration at the hands of the United States of America in the matter of lease-lend obligations than any other country with which the U.S.A. has had to deal. The principle that the Government of India must meet all the requirements of the American forces in this country which have to be paid in rupees may, no doubt, be accepted during the war as a matter of obvious convenience to the Government of the U.S. Up to this stage these charges may not have grown to be a heavy burden in India. But it is certain that, when the war in the Eastern hemisphere grows, these charges will prove an onerous burden on the slender resources of the Government of India; and if these principles were applied rigorously, the practical effect might well be that India is put outside the orbit of nations entitled to anything under the Lease-Lend Act.

The Budget for 1943-44 will, it may be presumed, throw light on the lease-lend relations between America and this country. Meanwhile, it is well to state that the U.S.A., which is developing more than one point of contact with this country, and which, as the war draws to a close, must of necessity have a keener sense of responsibility to the world order of the future, must recognise that to the building of a secure world peace, its relation with countries like China and India will make a far more effective contribution than its relations with the European nations. The public mind in India is already full of apprehension that, as a result of the nexus of relations, political and economic, between Britain and America, the economic integrity of this country may have to suffer more in the future than it has ever done in the past. This apprehension is heightened and not reduced by tentative solutions of the problem of reciprocal lease-lend and the reservation of rights to final settlement for an indefinite future.

(Continued from page 13)

of various kinds that have been garnered in the process of stimulating India's war efforts will make a great difference in the nature and pace of post-war industrial development. Likewise, in agriculture, too, there are changes afoot which will tend to integrate Indian agriculture, in the sense of reducing our undue dependence on export markets, and also to explore the ways and means of increasing our capacity for food production. It might be thought that food shortage being due mainly to the cutting off of Burma as a source of rice supplies, our efforts to improve food production at home will tend to become in the post-war years either a costly superfluity or cause a dangerous accentuation of the bias towards economic nationalism. Such a view can only be said to arise from mistaking the consumption in the past as marking the limit of our real needs of food. If it is realised that in the post-war years any Government worth the name will have to ensure adequacy of food for the whole population, then the importance of the efforts that we are now making under pressure of war to explore other sources of food supply will be readily appreciated. Despite disappointments, various and varied, the present war will have done more than the last to facilitate the development of India's economic life on new and progressive lines.

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EQUAL ACCESS TO RAW MATERIALS

By GAGANVIHARI L. MEHTA,

(President, Federation of Indian Chambers of Commerce and Industry).

While the war aims of the United Nations in the political sphere have been the subject of public interest and discussion, such aims in the economic sphere, although not less important, have not received similar attention. It need hardly be emphasised that the struggle for raw materials and markets and fields of investments has been a potent cause of economic rivalries ensuing in war. Nor is it less certain that the dominant issues after the termination of hostilities would be economic in character. The whole question of transition with minimum dislocation from war to peace economy would necessarily occupy the energies of governments and peoples after the war. It is already evident that a common economic policy is proposed to be evolved by the British and American Governments for the post-war period. The economic war aims of the allied nations have been summed up in the provisions of the Atlantic Charter as well as in the Anglo-American Agreement of February 1942. Clause 4 of the Atlantic Charter, for example, lays down that:

> "They (the U. K. and the U. S. A.) will endeavour with due respect for their existing obligations to further the enjoyment by all the States, great or small, victor or vanquished, of access on equal terms to trade and to the raw materials of the world which are needed for their economic prosperity."

It is proposed to deal here with that aspect of the problem which relates to equal access to raw materials.

The question of equal access to raw materials received consideration even before the outbreak of the present war and it may be recalled that Sir Samuel Hoare, when he was Secretary of State for Foreign Affairs, raised this question in the League of Nations in 1935. It was felt that the inequitable distribution of the world's raw materials through the colonial system was one of the strongeest and most legitimate grievances of countries like Germany and Italy which described themselves as the "have-not" nations of the world. It was sought to be proved by British economists and publicists that British colonial possessions did not give any special advantage to Britain herself in respect of raw materials. But this argument lacked force partly because of the preferential system introduced by the Ottawa Agreement and partly because Britain was not prepared to hand over her colonies to international control where there would be no favours or preferences.

The problem, however, remained unsolved and now constitutes one of the issues of post-war economic reconstruction. Significant pronouncements have been made by leading American and British public men like Mr. Cordell Hull, Mr. Anthony Eden, Sir Stafford Cripps and Sir William Jowitt on the question of providing to all countries access on equal terms to the world's raw materials through international regulation of their production and distribution. On the one hand, the Pope, for example, in his Christmas message last year laid stress on the question of participation of all nations in access to "economic sources and materials of a common use" while, on the other hand, a special International Resources Organisation has been constituted at a Conference arranged by the Division of Social and International Relations of Science of the British Association with a view to implement Clause 4 of the Atlantic Charter in regard to equal access to raw materials and mineral resources of the world after the war.

Any examination of this important problem should take into account the objects of such a policy of international control of raw materials no less than the methods and machinery devised for its execution. It is apparent that behind all such proposals of international regulation, there is more than a hint of economic hegemony, either Anglo-American or Axis. It is no secret that one of the primary causes of the failure of the League of Nations was its utilisation by certain Powers primarily to advance their own political ambitions. It is, therefore, necessary to scrutinise in the light of past experience the interpretation placed on such clauses of the Atlantic Charter and of the Anglo-American Agreement relating to raw materials. The London Chamber of Commerce in their report on "General Principles of a Post-War Economy" rightly observed that they "cannot support any scheme which in the economic sphere relies upon some supra-national authority (which, in practice, must mean the powerful nation or nations) to dictate to weaker nations what their international policy shall be". In considering any plan for international distribution of raw materials, a country situated like India is entitled to claim that her economic conditions should be fully taken into account before she is made a party to any international agreement about raw materials. It is evident that proposals regarding international control of raw materials is mainly designed to benefit industrially advanced countries with a view to their being provided with raw materials, adequate in quantity and cheap in price. Such a scheme would have serious disadvantages so far as countries producing raw materials are concerned, unless it is made absolutely clear that the producing country will have a prior claim on its own products and that it is only the surplus raw materials left over after satisfying domestic needs to which such scheme would be applicable. I cannot do better in this connection than quote from a speech I delivered at the Ninth Congress of the Interational Chamber of Commerce held in Berlin in 1937:—

> "While on this subject, I may refer to the question of utilization and rationing of raw materials. Much is spoken and written about the excellence of the principle of the international division of labour, but it might well be enquired whether the existing division is based on purely economic forces and whether political factors have not helped the stronger powers to build up their industries and trade on the basis of their colonial possessions. Why are countries which do not grow the raw materials essential for their manufactures and do not possess adequate home markets for their disposal but are able to acquire both these through the aid of their colonial and imperial possessions considered to be naturally suited, in the strict economic sense, to manufacture such commodities? It is a strange vindication of *laissez faire* and of the principles of international division of labour that economic laws and forces operate freely only in a world whose sources of supply and markets are determined by political considerations and forces. We must make it clear that the rationing of raw materials from the countries producing them among the industrially powerful and advanced nations, as well as the provision of markets in such economically backward countries irrespective of the effects of such a policy on their economic and industrial development is unacceptable to us. Behind this policy is an undoubted apprehension of the loss of markets in such undeveloped countries. This fear is not anything new. Industrialized England had the same apprehension when the Continental European countries were being industrialized; later Europe had the same fears when the United States became industrialized and the whole West was alarmed when Japan underwent the same process. We cannot therefore permit such apprehensions regarding the industrialization of countries producing raw materials to influence an international economic policy. We desire to emphasize that India, for instance, has the right and liberty to utilize its raw materials itself in the first instance and that no extraneous influences must be allowed to impede this right of a country's normal economic development in the name of the rational distribution of the world economic resources. Such international collaboration is not, and cannot be, truly international until it is based on the free and independent national economies of the various countries including the countries of Asia and Africa co-operating for mutual benefit. We are fundamentally opposed to a rigid division of the world into economic hemispheres resulting in the perpetual exploitation of the resources of the weaker countries by the more powerful ones."

The volume of international trade is not the sole criterion of economic betterment; and it is essential to emphasise that the maintenance of international stability and of domestic equilibrium is no less fundamental to the economic progress of a country than preservation of international trade.

It should also be pointed out that a country producing raw materials should be free to determine the quantum of production of any particular raw material, according to its own economic needs and requirements. This question, it is obvious, would have a vital bearing on the welfare of the cultivators. Mr. Herbert Morrison, the British Home Secretary, in his speech the other day acknowledged the possibility of such divergence between international needs and the interests of a producing country. "If there is a conflict of short-term interest," he observed, "for instance, between world needs for raw materials and the needs of the colonial people to grow more food for themselves, then the colonial needs must come first without question." It is there-

fore a question for careful consideration whether India should adhere to international agreements for the purpose of planned marketing of staple crops and if so, on what basis and on what terms. There is apprehension in India, for example, that the United States, being itself a large grower of commodities like cotton and wheat would be interested in restriction and reduction of crops in India so that in the export markets of the world, India might not compete with her. Countries like the United States, Canada and Australia are interested in exports of raw materials and have been trying to capture markets in South America, Africa and elsewhere. The desirability of India entering into such agreements and if so, on what lines and in what manner, is a problem for thorough and impartial investigation from the standpoint of India's economic interests.

Any plan of access to raw materials, moreover, presupposes that there would be free and unfettered exports and that the countries concerned would have not only the right but also the purchasing power to buy the goods. Mr. Sumner Welles, U. S. Under-Secretary of State, speaking at a Convention some time ago said that access to raw materials means effective power to buy in the world's markets and emphasised the fact that "access to raw materials comes in the end to access to the great buying markets of the world." Mr. Andre Istel, writing in "Foreign Affairs" sometime ago on this provision in the Atlantic Charter, stated, "access would necessarily include the means of making the purchase". The problem, therefore, is not merely one of ensuring free international trade in such commodities and of regulating through expansion or restriction of the commodities produced but also of foreign purchasing power and control of exchange. It is doubtful whether in a question of this nature where the interests of the cultivators, traders and finance are so vitally involved, independent national governments would readily agree to subordinate their particular policies to the demands of an international economy controlled by a few powerful nations of the world. The fact is that hitherto Europe and America have dominated the world. Their economic machinery draws in raw materials from the Continents of Asia and Africa and, like a pump, sends them back in a stream of finished products. Rivalries for possession of colonies have been due in no small measure to struggle between different Powers for obtaining raw materials as well as markets. Europe, as a whole, or along with the United States and Japan has hitherto failed to evolve any stable plan or machinery for common exploitation of the resources of the more backward countries of the world. The real "have-not" nations of the world are India, China and other countries in the East and in Africa which have been under the domination of one or the other White Power and many of which are now under Japanese control. No plan for international regulation of raw materials can be acceptable to those countries, unless it is first recognised that countries should manufacture articles for which they have raw materials and other facilities. Any scheme for international division of labour on the existing basis is illogical; on no valid grounds is Britain entitled, for example, to manufacture cotton textiles when she does not produce cotton and has no adequate home market, both of which she has obtained through her political domination and colonial possessions. India, on the other hand, grows cotton and has a large and ready market for cotton goods, but for a long period, she was precluded from developing her cotton industry owing to "the long arm of political injustice". "Equal access" to raw materials, as propounded by Anglo-American leaders, would be detrimental to Indian interests if it deprives her of the right to utilise and consume raw materials which she produces. It should be pointed out, moreover, that even during the period of this war, such international control is already in operation in respect of several commodities. State-controlled bodies like the U.K.C.C. and the Defence Corporation in U.S.A. seek to regulate imports and exports of commodities while special commissions have been sent from Britain and the U.S.A. for purchase of such commodities as mica and rubber and for regulating their output and prices. It is, therefore, evident that international control of raw materials in one shape or the other is already at work.

It is necessary to realise that difficulties in regard to raw materials or markets are a symptom of the disease and not the disease itself. The fundamental evil is not unequal distribution of the world's goods but the colonial system itself with its preferences and exclusions and its basis of exploitation of the backward peoples of the world. If, therefore, economic maladies of the world are to be cured, it is the fundamental evil of economic imperialism which has to be recognised as such and dealt with on the basis of free and equal units.

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PRICE CONTROL IN INDIA

The problem of price control flows from the handing of the ultimatum as directly as mobilisation or black-out. Governments had, as a rule, been slow to realise it. In the last war, the responsibility for price control was thrust on the unwilling shoulders of governments only by the irresistible pressure of events. The reason is to be found largely in the grip which laissezfaire had on the minds of the ruling classes. But even during this war, though the theory has lost a great deal of its unquestioned respectability, there is an anxiety to restrict the scope of price control which militates against its success. But the war imposes a degree of totalitarianism even on the most democratic of nations. And this, together with the practical difficulty of restricting the scope of price control and the financial and economic exigencies have urged nations to pitch their aims high and to spare no effort in attaining them. The cost of living index in countries like Great Britain shows that the Governments have met with singular success in their efforts in this regard. Their success must be accounted for by the fact that the problem has been attacked from many sides, instead of being regarded only as a matter of assertion of governmental power.

The same can hardly be said of the Government in India and of price control in this country. The only point of similarity that can be cited is the alacrity with which ordinances were published immediately after the war by way of attempts to control prices. The Government were also careful to devise and bring into being a machinery and a technique which would ensure that, where Government was involved as buyer, private profiteering would not go unchecked. In all matters of supply to the Government, the Supply Department soon evolved and put into force a system of estimating costs and fixing prices by allowing for a reasonable margin of profit. But this is not, strictly speaking, part of the problem of price control, which is meant to regulate prices in transactions between any two private individuals. Where the Government is itself a buyer or seller, price regulation is only a variation from the ordinary bargaining which any individual or corporation is entitled to make. That the Government can assume during war time special powers to enhance its bargaining strength may constitute an important difference, but cannot alter the nature of the transaction. But price restriction in the interest of the Government as buyer or seller tends to expand slowly over a wider orbit, as when the Government is obliged to restrict the price of certain raw materials in the interest of the manufacturer whose prices have been cut to the bone.

But the problem of price control during war time is apt to be misunderstood, if it is thought of solely in relation to profiteering of the more or less unscrupulous kind. Economic conditions and financial exigencies alike contribute to the emergence of the problem of price control in an acute form. Since war invariably causes interference with transport and communications and reduces the supplies of goods and at the same time sets up a heavy demand for them, scarcity, both relative and absolute, is often the direct result of war. There is then the monetary factor. The most puritanical of financiers find it next to impossible to avoid some measure of inflation in the currency and credit sphere. When the economic and the monetary factors work in the same direction, a steady rise in prices becomes inevitable. But, as is well known, a rise in prices invariably leads to higher costs, particularly because the working classes, conscious as they are of the increase in the cost of living, are able both by virtue of their being a large part of the democratic electorate and by their special importance in a war economy to obtain higher wages. This process of higher costs and higher prices is generaly known as the obvious spiral of costs and prices.

The problem of price control in this form is common to all the belligerent nations. But recent changes in economic ideology have tended to minimise its severity in the totalitarian countries. In Britain, the problem is attacked both from the economic and from the monetary side. On the economic side, shortage in the supplies of commodities, whether due to low stocks or to the necessity for providing for the contingency of cessation of supplies in the future, is frankly accepted and the task of rationing the scarce goods amongst the consumers concerned is faced as an administrative problem. In the case of consumers' goods the popular appreciation of the exigencies of war together with the deserved confidence of the public in the impartiality of the Government enables the smooth functioning of the system of rationing. In the case of raw materials for industry, too, the exigencies of the war take practical form in the system of priorities that is worked out by the various authorities concerned. In the totalitarian countries, nice problems of satisfying public opinion do not arise, merely because the whole nation has been reared for the last one decade and more on the principle that what the dictator does is in the best interests of one and all.

The position in India is far different from that of the countries mentioned above. The Government of India is not dictatorial in matters in which dictatorship might be a practical advantage to the people. Nor is the popular enthusiasm for the war comparable to that of the people in Great Britain or other belligerent countries. There is, besides, the unspoken fear of the common people that measures of price control or regulation of the distribution of scarce commodities are apt to be conceived more in the interest of the Government and of foreign nations than of the people at large. There is thus, from the administrative point of view, initial difficulties which can be overcome only when the system has a measure of demonstrable success to show to its credit.

The circumstances cited above together with the size of the country make rationing 'prima facie' impossible. And once rationing is ruled out, economic forces have free play and attempts at price control only tend to strengthen the phenomenon of black markets. Perhaps, not the least of the handicaps of price control in India arises from the fact that the necessity for it arose but slowly. While in the case of countries like Great Britain, it was an immediate and complete necessity, in India it often looked as though the problem in its more severe forms might not arise. For, both the economic and the monetary causes were slow alike in emergence and in operation. When the war broke out, there was what in essence was a psychological rise in prices particularly of imported products which, it was presumed, would become increasingly scarce with the scarcity and uncertainty of shipping.

Orders were therefore issued within the first week of the war delegating power under the Defence of India Rules to Provincial Governments to fix prices of certain necessaries of life, viz. foodstuffs, salt, kerosene oil and the cheaper qualities of cotton cloth. But the First Price Control Conference was not, however held till October 18, 1939. Discussion proceeded on the basis of what had been done and it was agreed at the Conference, (1) that the list of essential commodities already notified was adequate, (2) that in the case of imported goods and those that were of all-India importance, the basic price at the first stage should be fixed centrally, and in the case of other goods, by the Provinces; (3) that the normal basis should be "replacement cost", and (4) that it was desirable to develop a "price intelligence service".

The general opinion of the Conference was that it was not at this stage necessary to prevent the rise in price of agricultural products. At the time of this Conference the weekly index number of primary commodities stood at 111.4 only (base: week ended August 19, 1939=100).

SECOND CONFERENCE: FIXING OF WHOLESALE PRICES CENTRAL RESPONSIBILITY

Soon afterwards a boom period began, and in December 1939 the weekly index number rose to 135.9. This necessitated the convening of the Second Price Control Conference, which was held on January 24 and 25, 1940. The general opinion in this Conference too was still to favour non-interference with rise in the basic prices of agricultural products. The necessity for co-ordination of activities was emphasised and it was generally agreed that the fixation of prices at the stage of production and at primary wholesale markets should be a Central responsibility; Provincial and State units to be responsible for determining the margins between the primary wholesale stage and the later stages, including the retail stage, of distribution, and to fix retail prices by superimposing such controlled margins on the controlled or, in the absence of control, the current wholesale prices.

From the date of this Conference until late in 1940 a period of generally declining prices set in, the above quoted index number falling from 135.3 in January 1940 to 109.7 in February 1941. A rise then began, however, the index number rising to 138.3 in September 1941. In June 1941, the powers of price control already delegated to Provincial Governments were strengthened by delegation of power to prohibit withholding from sale of the articles scheduled for price control.

THIRD CONFERENCE: QUESTION OF STANDARD CLOTH

The Third Price Control Conference was held on October 16 and 17, 1941. At this Conference most attention was paid to the cases of cotton cloth and yarn, prices of which had soared as a result of the freezing order against Japan. This discussion may be said to have been the genesis of plans for the production of standard cloth and for the control of distribution of yarn.

Even at this stage, foodstuffs had not come prominently before the Conference. The Hon'ble Sir A. Ramaswami Mudaliar, then Commerce Member to the Government of India, who presided over the Conference, observed that there did not seem to be very grave apprehension at the moment regarding the rise in price of agricultural products, but that the question of wheat prices had to be very carefully watched. It might be possible, or even necessary, he added, for the Central Government to intervene at any stage if there was a tendency for a rise in the price of wheat.

But the wheat problem continued to grow in seriousness. The reduction of the duty to a nominal level on September 30, 1941, had little effect. On November 2, a press note was issued warning traders that the Government considered Rs. 4-6-0 per maund at Lyallpur and Hapur to be a suitable maximum price and that traders trading at higher rates would be doing so at their own risk. But as this and other warnings were of no avail, on December 5, 1941, a definite order was issued fixing the maximum price for wheat at Rs. 4-6-0 per md. at Lyallpur and Hapur, and authorising Provincial Governments to determine the maximum price at any other place "having regard to the normal relation between prices at such place and at Lyallpur and Hapur." On December 31, 1941, a Wheat Commissioner for India was appointed. In the hope of stimulating activity in the marketting of the new crop, the maximum prices were revised at the end of March 1942, so as to stand at Rs. 5/- per md. at Lyallpur and Hapur and Rs. 5-4-0 per md. at Sind Centres. On April 30, 1942, the Wheat Control Order was issued; and thereafter movements of wheat by rail from producing Provinces to consuming areas were regulated by permits issued by the Wheat Commissioner. Movements within producing provinces were left to be controlled by the Provincial Governments.

FOURTH CONFERENCE: IMPORTANCE OF TRANSPORT

The Fourth Price Control Conference was held on February 6 and 7, 1942. At this Conference it was recognised that the accommodation of traffic to the most efficient use of the limited transport facilities available was a consideration of great importance and that control over distribution in co-ordination with transport arrangements might have to take precedence over control of prices. A distinction was drawn between commodities (like wheat) which were subjects of all-India distribution and commodities that were to be distributed to certain zones. To deal with the latter, the idea of Regional Transport Boards, was evolved.

The Fifth Price Control was held on April 7 and 8, 1942. The vital importance of linking control over distribution with price control was now fully emphasised and the Conference recommened the introduction of the licensing of wholesale dealers (preferably established dealers), by provincial and State Governments, which would enable those Governments to maintain information as to the course of distribution of the various foodgrains, and would minimise the evil of hoarding. It was left to the discretion of the Provincial Governments to decide whether retail dealers should also be licensed.

The Foodgrains Control Order was issued on May 21, 1942, giving powers to Provincial Governments to license wholesale dealers in foodgrains and to require returns of their transactions. By another order issued a few days later an attempt was made to check speculative dealings which were believed to be partly responsible for the pressure of prices against the prescribed maximum even so early in the season.

PRICE CONTROL MACHINERY

The Price Control machinery at the centre, besides the Price Control Conference organisation, consists of the Economic Adviser to the Government of India, the Wheat Commissioner for India, the Civil Supplies Commissioner and the Sugar Controller. The Control of prices of wheat at the primary wholesale stage and of inter-Provincial movements of wheat is in the hands of the Central authorities. Similar control at later wholesale stages and at the retail stage is the responsibility of Provincial and State Governments. All stages of control of prices and distribution of other foodgrains have been left to Provincial and State Governments to enforce, aided by the advice of the Regional Boards.

All the Provinces have set up control organisations, whether in the hands of officers designated as Price Controllers, Directors of Civil Supplies etc., for forming a branch of the Provincial Secretariat. Generally speaking, these organisations work through District Magistrates and the District staff.

From the foregoing account of the measures of price control in India, it will be clear that the Government did not start with a frank and full acceptance of the need for the control of foodstuffs and that they were led on to it only step by step. It may be imagined that in a vast agricultural country like India the control of foodstuffs and food prices is beset with innumerable and almost insuperable administrative difficulties. The system of licensing wholesale dealers and restricting movements of grain from one part of the country to another was tried only half-heartedly for over a year till the unsatisfactory nature of its working, and the growing certainty of the shortage of food stocks forced the Government to attempt more comprehensive systems of control. For the food problem in its earlier phase the Government had, on the one hand, a campaign for encouraging the people to grow more food and on the other, a number of speeches from official spokesmen assuring the people that the fears of shortage were exaggerated. But as soon as the shortage became apparent, the necessity for fuller measures was recognised and a separate Food Department was constituted in the Government of India. Almost one of the immediate results of the constitution of the Food Department is the decontrolling of wheat which is tantamount to a confession that the earlier measures of regulation were a more or less complete failure. In fact, the Government's efforts in the region of food and of other consumers goods have been restricted to provide certain amount of relief partly through the acquisition and control of a part of the production and partly through the stimulation of production. In the case of cotton piecegoods, the Government have succeeded in persuading the Indian mills to secure a part of their production for what is known as standard cloth, which is to be made available to the people through recognised dealers at reasonable prices. To the extent that production in commodities like sugar and salt has risen, though not proportionately to the demand, the provincial controls have been successful in mitigating the scarcity, and in making the goods available to the general body of consumers. Likewise, in regard to the food problem, the Government of India have been able to secure appreciable relief by contriving to import wheat from Australia.

It may be hoped that as a result of the higher prices and as a result of the universal experience of the conditions caused by the scarcity of food stuffs, production in the country will tend to increase. But it is not alone in the economic sphere that the causes of the steep rise in prices are to be sought. For, when the total volume of currency in circulation has been increasing by leaps and bounds, a measure of responsibility for the rise in prices must be deemed to rest with the currency and credit policy. In so far as the decontrolling of wheat is a confession of the failure of the control measures, it is incumbent on the Government of India to recognise that part of the solution of the problem of price control in India is to be found in the regulation of the currency and credit policy in the country. Of this recognition there are, up to the moment of writing, no signs. It is to be hoped that India will not be subjected to the kind of inflation that devastated Europe in the last post-war period, and that, before the situation gets out of control, the check to the rise in prices will be brought about through appreciable contraction of currency.

INDIA'S STERLING BALANCES

The problem of India's sterling balances, though it gained public attention only towards the last quarter of 1942, was almost inherent in the economic and financial relations between India and Britain during a world war. The experiences of the last war left no room for doubt, despite the large differences between the present war and the last, that the financial relations between the two countries during the two wars would be largely similar and that the demand for the goods and services which India could supply would result in large payments being made to her credit in sterling in London. There are, of course, certain differences between the conditions of the present and those of 1914-18. Firstly, in this war, India is very near, if it is not yet in itself, a theatre of war. For this reason, the measures that India would have to take in the interest of her own defence are varied and costly; and since defence equipment for India entails orders for such goods on foreign countries, chiefly Britain, there are, in the present war, debits in her international accounts for which there was no parallel in the last war period. Secondly, far more territory has come under the enemy than in the last war; in fact practically the whole of the European Continent came under the Nazi heel at quite an early stage; and in the latter stage the entry of Japan, this time as an enemy of Britain and the Empire, has contracted still further the area in which India can have trade relations. The result of this is that India's favourable balance of trade is not as large as it would have been.

These important differences notwithstanding, India's favourable balances of repayments have been steadily going up even after the policy of repaying sterling debts, about which more will be said later, was adopted and pursued energetically by the Government of India. The following table shows the rise in sterling securities during the years of the war together with the attendant changes in rupee securities and total notes issued.

(In Lakhs of Rupees)

Date	Notes Issued	Sterling Securities		Rupee Securities
		Issue Dept.	Banking Dept.	
September 1939 ..	217,96	60,50	13,01	37,36
December 1939 ..	244,87	96,30	9,71	37,33
March 1940 ..	252,93	113,50	25,20	38,35
June 1940 ..	259,67	129,25	20,13	48,35
September 1940 ..	258,59	131,50	32,53	49,61
December 1940 ..	255,42	131,50	54,40	49,61
March 1941 ..	267,61	130,94	68,30	59,18
June 1941 ..	290,53	118,80	36,92	91,31
September 1941 ..	295,59	135,37	53,38	77,00
December 1941 ..	335,44	213,12	55,58	42,75
March 1942 ..	413,48	207,35	41,07	133,76
June 1942 ..	457,07	258,10	62,66	122,28
September 1942 ..	499,43	325,29	82,16	102,43
December 1942 ..	573,04	388,33	76,83	126,13

It will be seen from the above table that the total amount of sterling securities stood at the end of 1942 at near about Rs. 400 crores and since nearly 370 crores had been utilised for repayment of sterling loans, India had over Rs. 700 crores of sterling paid to her during the war period upto the beginning of 1943. It is not possible to say whether this rate of sterling accumulation will be kept up in what remains of the war period. The budget for 1943-44 will throw some light on this question though it is doubtful if even the Finance Member can make an accurate forecast, considering the difficulty of estimating the demands which the war will make on India. Assuming, nevertheless, that net additions to our sterling balances will continue to be made, it may be said that the problem will call for the continued efforts of the public and the Government to ensure a wise and timely solution of it.

It has been contended that the problem of the sterling balances should be solved by aiming at the prevention of its emergence. The problem arises, it is urged, mainly because when India sells her goods and services to foreign countries, she does not exercise her right as a seller to stipulate the medium and means of payment. It is argued, therefore, that India should insist on being paid in rupees, that is, in loans raised in this country by foreign nations or by the transfer to India of securities and interests in this country owned by the nations which are now our customers. If India's rights had been so exercised in the past, sterling balances would not have risen as they have done, leading to inflation at home and all the upsets that inflation causes. There is little to be said against this view; but it is obvious that the policy in this regard rests with the Government of India and ultimately with the British Government. Whether such a policy is adopted in the future or not, the fact remains that it was not in the past. Sterling balances have accumulated. Certain steps have been taken in regard to their utilisation which are to the advantage of the country. And, after all, the difference between what has been done and what is advocated is that the repayment of the sterling debt has been done by a somewhat circuitous process. But the problem is still there because we have still over Rs. 400 crores of sterling and more must be coming. It is more important that public opinion should be insistent on its proper utilisation than that it should address itself to the comparatively difficult problem of forcing the Government to adopt an altogether new policy in regard to payments to India. For whatever may be done in the future in this respect, the experiences of the last war suggest we ought to be careful about the utilisation of sterling resources.

India's war profits on the last occasion were realised in conditions of uniqueness of our currency system, a system which lent itself admirably to the denudation of a large part of these profits when the time came. It might be said that, if all the war profits had been so lost through the sale of the reverse councils, India got nothing out of the war except fantastically high priced silver and high prices through persistent inflation of currency. The gross note circulation in India rose from Rs. 66.12 crores in March 1914 to Rs. 161.40 crores in December 1920, while at the same time gold, which rose from Rs. 31.59 crores in March 1914 to Rs. 48 crores by March 1920, came down by the end of that year to Rs. 23.89 crores. Sterling securities rose from Rs. 4 crores to over Rs. 82 crores by the beginning of 1920 and came down by December to Rs. 8.35 crores. Rupee securities showed an increase from Rs. 10 crores to Rs. 68 crores, but not as a result of the replacement of sterling by rupee loans as in the present instance. So far as Indian currency is concerned, the war left us only the damnosa hereditas of the rupee rate problem; and only the world crisis of the thirties and the world-wide movement away from gold gave us relief from this problem.

What India missed and lost through the official policy and what might have been done through her foreign balances were best presented by Sir Dadiba Dalal in the dissenting minute which he appended to the report of the Babington Smith Committee.

> "These revolutionary changes in the Indian money system should not have been possible and much less necessary at a time when immense sums were due to India in exchange for her commodities. They are to be explained by the particular bent of the policy followed—a policy of making India accept payment in India of the balances due to her as far as possible in the form of rupees. A policy less rigidly bent in that direction would have been susceptible to the need for meeting the very special circumstances of the time by other methods, such, for example, as that suggested by the Governor of the Bank of England when he pointed out the desirability of investments abroad in settlement of India's foreign claims. It is a policy which has persistently ignored the essential safeguards of a gold standard, and particularly the safeguard of limiting the issue of token coins. It has by mere executive action changed the legally-established gold standard into a gold exchange standard, making the maintenance of exchange the object to be attained in place of the provision of gold money with a limitation of token money. And while the maintenance of exchange was the main object, the policy has broken away from the normal rate of exchange on the ground that the rise in the price of silver rendered that course necessary, although, as I have endeavoured to show, there was no real necessity for doing so. The fact that the maintenance of exchange was so readily abandoned and the sale of rupee bills continued, combined with the persistent flooding of India with silver token money, gives ground for the theory that fixity of exchange was only the ostensible object of the policy, and that the real object was to compel India to take silver in place of gold money. Further, it is a policy which is settled and managed in London, and which necesarily operates in the markets of London and India. That the interests of the London market have not been without influence in shaping the policy may be gathered from the enormous sums of money or investments belonging to the Indian currency which have been accumulated there. The profits on silver coinage were steadily collected into the gold standard reserves in London, and now that the coinage of silver has ceased to be profitable, a new departure has been made in the issue of currency notes in India on the security of investments in London, which has had the effect of rapidly accumulating an enormously increased store of Indian currency money in London."

It will be seen that a part of what Sir Dadiba said, especially in regard to gold coins, has lost its appeal. But what is important in this context has been succinctly stated.

To avoid a similar danger to India's war profits maintained abroad in the form of sterling securities in the Currency Reserves, it was insisted by "Indian Finance" that the Government should not confuse the transfer problem with the currency problem and that only if the sterling balances are viewed as a transfer problem, that the Government could secure a transfer of our foreign balances to India instead of paying out in inflated currency here every time sterling is received in London. The process was clearly explained as one of repaying the sterling loans of the Government of India with the cooperation of the British Government and replacing them pari passu with the repayment of rupee loans raised in India.

This policy has been adopted with certain immaterial differences; and by the beginning of 1943 India ceased officially to be owing any money on loans quoted in the London market. For the 3½ per cent non-terminable sterling stock was repaid in the first week of January 1943 and the plan for the repatriation of India's sterling debt was formally completed.

With regard to Railway annuities payable in sterling, the scheme that was put into effect sometime ago does not contemplate liquidation of the liability, but provision of the requisite sterling assets for the meeting of this liability as and when due. That is to say, the present value of the annuities was estimated at slightly over £30 million; and sterling balances for this amount were made over to the British Government from whom the sums as needed from time to time will be receivable by the Indian Government who, from these proceeds, will make payment to the annuitants. In simple terms, the Indian Government have subscribed for British Government stock for £30 million on an interest basis reckoned at 2½ per cent per annum; and the stock has varying repayment dates in accordance with the schedule for the payment of the annuities. Thus, though India may be said to have discharged her liability for sterling in respect of railway annuities, she is not discharged from her formal liability for payment. If we may say so, it is a case of repatriation of sterling but not repayment of debt.

Taking this fact into account, the present position is that, while the Government of India's sterling debt in 1936 was £376 millions, the balance now outstanding (which means the balances of India sterling stocks remaining unredeemed plus liability on Railway annuities) is £80 million. This liability, technical and otherwise, will continue for some time though we have ample sterling resources for meeting it now and here and though, for over 40 per cent of it, we have actually provided in advance the requisite sterling.

India has cause to be both gratified and relieved by this significant development. Gratified because she definitely sheds her status as an age-long debtor country and well on her way to the esteem of a creditor country.

Equally impressive, though not spectacular, has been the progress of plans for raising loans in India corresponding to loans paid off in London. In broad terms, it may be said that the programme of sterling debt repatriation embraced four stages. And it is fortunate that each successive stage was taken on hand only after it had become possible to make permanent arrangements for the rupee finance involved in the earlier stage.

In the first stage, sterling loans were being purchased from the open market in London; and rupee loans in the form of counterparts of these stocks were being sold on tap in India. Thus was full provision made for the sterling loans redeemed in the first stage (amounting to slightly over £30 million).

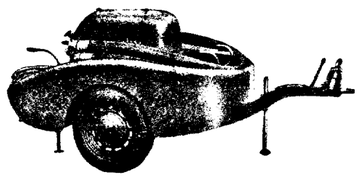
The second stage pertained to the terminable India sterling stocks whose repayment before due dates was made possible through the good offices of the British Government. The rupee finance was, in the first instance, provided by temporary makeshifts such as drawing on Government's cash balances, sale of ad hoc securities to the Reserve Bank and advances on ways and means account from the Reserve Bank. In the following months, however, these make-shift arrangements were replaced largely by loans issued to the public. This was accomplished in time to allow the third stage to be tackled.

In the third stage, redemption was taken on hand of the 2½ per cent and 3 per cent India non-terminable sterling stocks. The Indian end of the arrangements was, as in the earlier case, managed by recourse to make-shift devices. These have now been replaced by permanent arrangements, information regarding which is furnished in a New Delhi notification dated January 14. Drawing attention to the important, but not generally appreciated, fact that, side by side with investment in defence loans, a steady investment of new money is proceeding in the various rupee counterparts created in connection

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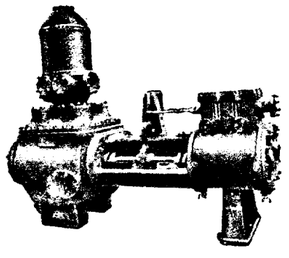
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with the repatriation of the terminable India sterling stocks, the government note says:—

"During the 6 months ended mid-December, 1942, investments in counterparts and certain extensions of existing issues amounted to nearly Rs. 45 crores while investments in defence loans of all kinds totalled just over Rs. 26 crores. (By the middle of December, 1942, approximately Rs. 115 crores had been invested in counterparts and extensions of existing issues since the repatriation operations were first started).

Beyond the above amounts, about Rs. 8 crores of new money was subscribed during the 6 months in question to certain provincial loans which were floated for the purpose of making advance repayment of part of the consolidated debts of the provincial Governments to the Centre."

In other words, Rs. 79 crores have been raised in the form of rupee loans in the last six months; and this has greatly helped to complete the plans for providing the rupee-finance for the third stage.

The fourth and last stage was taken on hand with the repayment, on January 6, of 3½ per cent non-terminable India sterling stock. For the time being, this has been financed at this end mainly by issuing ad hoc treasury bills to the issue department of the Reserve Bank. And we may be certain that permanent arrangements will, in due course, be accomplished as successfully and as smoothly as in the earlier stages.

If the repayment of the Government of India's sterling debt is the first step, there are also closely associated with it certain other measures which are theoretically indistinguishable from it. It is generally accepted that one of the means of settlement of international balances is the sale of securities. The only difference between the India sterling stocks and the loans and debentures and other British investments in India is that the former are owed by the Government and the latter by public local bodies or private parties.

The buying up of British investments in India must therefore be deemed to be the next step in the programme which we are attempting to outline here. It is not possible at the present moment to give in concrete terms the effects of this proposal. British investments in India have been estimated differently by different persons. It is difficult to say how much of them Britain would be prepared to part with. It may be supposed, however, that if the rate of sterling accumulation in the future does not slow down and Indian opinion is insistent on payments being made to this country in assets and not in paper money, then Britain will find herself obliged to sell her investments in India.

Before we turn to other avenues for the utilisation of our sterling balances, it must be recognised that a certain minimum of sterling balances, India will be well-advised to keep. For one thing, it is a good gesture to Britain, that is, it will be a token of India's readiness to follow a policy of non-embarrassment in the financial sphere. This minimum we may put at Rs. 150 crores. Of the balance, a little more than half should be converted into dollars as the nucleus of a dollar reserve. The importance of dollar balances arises partly from the desire for freedom of trade relations in the post-war period and partly from the fact that the backing against our note issue should not consist so largely of a currency which is bound to have its special troubles in the post-war period.

Our suggestions in regard to the sterling balances are: (1) the maintenance in the reserves of a minimum sterling balance of the value of Rs. 150 crores (2) the building of a dollar reserve by the conversion of Rs. 130 crores worth of sterling securities in the currency reserve to start with and (3) the buying up of British investments in India starting with the capital of public utility companies and loans and debentures of public local bodies and the Indian business units. In as much the replacement of sterling liabilities by Indian investments is easier in the case of the industry and of business, it would appear that the loans of public bodies are best left to be tackled at a later stage.

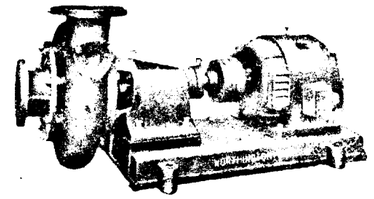
Another proposal which readily finds favour with most sections of opinion in India is that capital equipment necessary for our industrial expansion and development should be acquired in lieu of the obligations owed to India. It will be readily appreciated that this raises a number of issues ranging from the availability of such equipment or the shipping space necessary for their transport to the place which such industries will take either in the present conditions or in our post-war economy. If we seem to attach less importance to this proposal it is not because capital equipment is not worth having, but because the programme for the immediate future must be definite and independent of preparatory measures which are yet to be taken either by this country or others.

It may be hoped that as in the matter of the repayment of the sterling loans, in other suggestions, too, the Government will prove responsive.

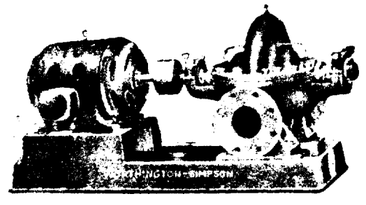
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Board of Scientific and Industrial Research

The Board of Scientific and Industrial Research with its offshoots is a direct result of the present war just as the appointment of the fiscal commission may be attributed to the last war. And it may be said that the Board might conceivably revolutionise Indian industry in the post-war period the same as the fiscal commission gave a great fillip to its development in the years following the last war. The difference between the fiscal commission and the Board of Industrial Research is perhaps a measure of the difference between the conditions and aspirations of the past and the circumstances and aims of the present. The fiscal commission was bound by the technical and economic ideas which ruled in those days. But the Board of Industrial Research today is all out for making the most of our resources. The cramping limitations of the former are done away with.

The Board then, has a fine start so far as freedom of action goes. And as for incentive, the conditions of the present war leave little to be desired. Due to the war, there were great many established industries which suddenly found themselves bereft of some of those commodities which, minor in themselves, were essential for the continued functioning of these industrial organisations. They had to depend on other countries, countries not even within the British Commonwealth of Nations, for the supply of such commodities, and the war emphasised the need for some arrangement by which these products could be produced within this country, so that the country may not be at the mercy of the exporting countries if it is again to be situated as they are to-day. From the point of view of Government, too, there were various commodities that were essential for the prosecution of the war which could not be produced in this country and which could not be obtained from outside without serious difficulty. A certain amount of research was also necessary before these commodities could be produced in this country.

"The whole object of this Board of Scientific and Industrial Research" as the Commerce Member pointed out, was "to advise Government from time to time as to the lines on which research for industrial purposes could be carried on, through which existing organisations it could be carried out, to what extent Government should undertake research through its wholetime officers, and to suggest also what financial help could be given to existing organisations and individuals for carrying out such research work." As may be expected, the Board has the Member for Commerce and Labour as its Chairman and includes, among its members, besides officials like the Chief Controller of Stores, eminent scientists like Dr. Bhatnagar, who is its director, Dr. J. C. Ghosh and Dr. M. N. Saha, and industrialists like Mr. Kasturbhai Lalbhai, and Sir Shri Ram.

It should not be thought, however, that the Bureau has to explore altogether new ground, without the benefit of useful prior work. Research, after all, is not altogether new. Government institutions, especially those engaged in arms and munitions work have also engaged in continuous research. There are Departments of Government like the geological Department, and Government Test House, and the Imperial Council of Agricultural Research which cannot function except with certain amount of scientific investigation. And there are also the scientific departments of the various universities and, scientific institutions of a quasi-public character of which the Indian Institute of Science, Bangalore, is the best known. Likewise, there were also before the constitution of the board, the Industrial Research Bureau and the Industrial Research Council which met once a year. It was composed of the eleven Directors of Industries of the Provinces and about four or five Directors of Industries, or officers of corresponding status from some of the more industrially advanced Indian States. The Council reviewed all the research work taken up by the Research Bureau from time to time, to allot certain problems of research to scientists.

Just as the Board resulted from a fusion of the Industrial Research Bureau and the Industrial Research Council—the two parent bodies were not abolished till after the constitution of the Board—the Board also has led to important offshoots like the Industrial Research Utilisation Committee, not to speak of its increasingly large number of sub-committees entrusted with the various special subjects of study.

Thanks to research done by industry in the past, there were, as soon as the Board was constituted, a number of schemes of subjects of scientific and industrial interest, which were readily submitted to the Board for their examination and appraisement. These problems relate to the exploitation of India's natural resources. The production of sulphur, the building up of a heavy chemical industry, the utilisation of molasses for power alcohol, the manufacture of cheap wireless sets, of drugs, of synthetic dyes and vegetable dyes, the utilisation of vegetable oils for other than export or edible purposes—on all these matters some enquiries had been conducted in the past; and the results had to be enquired into.

Since the Board has been functioning for more than two years, it is fair to ask for concrete results, concrete in the sense that its work has led to practical schemes which are fit to be commercially executed. The position at this time last year was described in the last Year Book as below :—

An indigenous product (Bhilawan resin) had been found to be good for making a type of varnish akin to Black Japan but very much better in qualities. The paint is resistant to acid and alkali, can stand heat up to about 300 C. and can be used for insulation purposes also, though this use has not yet been tested. Another important research, completed but awaiting exploitation, relates to luminous paints which will be of very great use in war, especially during air raids. They have evolved certain paints which are very cheap and good as they give very good light without being seen from afar. They are not radio active paints but they give good light as intense as the radio active paints. Another interesting fact about it is that by having an ultra violet lamp over it, it is possible to utilise these paints in place of the neon signs, which are rather very expensive. With some suitable expedient, neon lighting can be substituted by this arrangement. Such paints were in use in England and other countries as lamps for dining tables, etc. The additional advantage about these paints is their resistance to moisture when suitably protected by transparent filmforming media.

There is then the process of hardening of wood which has also been brought up to the pilot plant stage. By the aid of this device wood of an inferior type can be made to acquire stiffness and surface hardness to an extent equalling that of the best wood. Experiments have been made on bobbins, shuttles and butt ends of rifles and the reports are satisfactory.

By using resin, it is possible to give a polish and finish obtained in a high class wood. The Board has been able to harden wood to such an extent that their machinability has been found to be very difficult and consequently they had to adjust the treatment according to particular requirements.

Another process has been devised by which they can include certain resins in paper and paper pulp and they were able to make many materials of interest from it. It is also possible to give any desired amount of flexibility or strength to the materials so that a host of substitutes for fibre boards and fibre baskets could be made.

Regarding oils, work has been done on six oils which are considerably used in the trade, particularly in the textile industry. The oils they had been experimenting upon were blends of mineral and vegetable oils, particularly groundnut oil which is now in surplus, and these have been found to stand tests up to I.S.D. verifications. These could be recommended for large scale use when the big industrialists, after giving them trials have reported that they are good.

It is now possible to give a general idea of the problems of Indian industries which have been taken up by the Board. Necessarily, they refer to some of the minute details of the working of industries. It is the wide range of the problems that is important. The problems may be listed as below :—

Healds Varnish; indigenous Moulding Powders; phenolic type of synthetic plastic materials; chlorinated waxes from naphthalene; purification of rock sulphur; caffeine from tea wastes; application of ultra-sonic waves to industrial problems; production of dimethyl aniline; transparent organic gels;

phthalic anhydride from naphthalene; alumina from bauxite for the manufacture of aluminium sulphate and aluminium; vegetable oils as lubricants; black Japan and enamel and lacquers; hardening of woods for bobbins and other textile implements; motor accessories such as shock absorbers, washers, battery containers, etc.; manufacture of ammonium phosphate from calcium phosphate; plastics and resins from coffee beans; plastics from seed cakes; extraction of sulphur and sulphur compounds from coal, oil and other mineral products; preparation of sulphur from iron pyrites.

The concrete results up to the middle of 1942 may now be summed up:

1. Scientific and Industrial Research having a direct bearing on the War Effort; 2. research relating to Indian Industries which have been taken up at the laboratories of the Director of Scientific and Industrial Research, Calcutta; 3. Research work carried out at Universities and other Research centres, which is being financed by the Board.

Work Already Done

Here is a brief summary of some of the work already done under the first category:—

Two formulae for proofing have been recommended both of which employ indigenous raw materials available, and the cloth prepared according to the formula have passed all tests required by the Army. There is a considerable demand for these fabrics not only in India but outside India, and the Supply Department has entrusted the production of varnish according to these formulae to four firms operating in India. These formulae with suitable modifications will not only solve the problem of manufacturing anti-gas cloth, but will further lead to the development of the oil-cloth and the book-binders' cloth industries, neither of which have so far flourished in India.

The problem of manufacturing an unburstable container for the transport of petrol, lubricating oils and water with the aid of aeroplanes and parachutes suggested at the instance of the Army Headquarters, has been very successfully solved. These bags have been tested at heights of over 100 to 150 feet and would not burst. Apart from their enormous advantage in war time, the containers made according to this method which have been developed by the Director of Scientific and Industrial Research can be used as containers for oil paints and oils even after the war. They are lighter and less liable to damage by impact than tin cans. Large orders are likely to be placed for these containers.

Cheap solid fuel from Indian raw materials has been developed for Tommy's cookers. This solid fuel is of particular importance in military operations owing to its ease of transport.

It will be seen from the above account that the work of the Board of Industrial Research refers to the detailed working of industry in India and not to grandiose schemes and far-reaching questions of policy. It is in this respect, perhaps, that the contrast with the Fiscal Commission is most arresting and most significant. Who knows that the industrial revolution which the Fiscal Commission failed so signally to achieve by large changes in policy may not be achieved as the cumulative effect of a number of new inventions by the Board of Industrial Research?

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PLANNING FOR WAR ECONOMY

The following article is an abridgement of the series of leading articles which appeared in "Indian Finance" from the outbreak of the war to the middle of 1940. The abridgement has been made less with a view to sneak in any claim for prescience on our part, than to enable the public to see how far the economic problems of the war period lent themselves to intelligent anticipation and for such precaution as would ensure satisfactory solution when the need arose. The subject of war economy was dealt with under three different, though correlated headings; Planned Money, Planned Industry and Planned Economy.. The following article has not been re-written in any part, and such expurgation of portions as has been effected was only with a view to avoid repetition or to secure conciseness and continuousness of treatment.—Ed. I. F..

It is necessary to make it clear at the outset that these articles do not refer directly to, though they, doubtless, have a bearing on, the tasks before the National Planning Committee or the problems which are examined in our National Planning Series. The aim of this triple series is to concentrate the attenion of the Government and the public on the ways and means of relating the developments and policies of the war period to the requirements of economic planning in the period after the war. The developments of a war period have usually a lightning character which leaves no time for reflection and either leads to frantic activity or has a paralysing effect on the autnorities and on the public. Policies are resorted to under pressure; and action is mostly in the nature of make-shifts or mere expedients. Such passivity, undesirable in any condition, has elements of danger for a country which of late has dreamed of being able to shape its economic destinies according to its will. From the standpoint of Indian economy, the war is by no means an unmixed evil. But it is axiomatic that not all the repercussions of the war on our economic life can be helpful to the realisation of our economic aspirations or to the smooth execution of any scheme of planned economy which the collective wisdom of the nation may be able to evolve. Our aim, therefore, in instituting this threefold series of articles is to examine these repercussions of the war on our financial, industrial and economic structure and to suggest ways and means of ensuring that public policy in the present juncture is not a bundle of makeshifts and that even the apparent expedients of the moment are made to serve the larger purposes of economic planning in normal circumstances. In other words, the war and the forces and factors which it creates should, far from causing any upsets, prove in the end to be powerful, though largely fortuitous, aids in the acceleration of economic planning.

PLANNED MONEY FOR INDIA

In the ten weeks following the declaration of war, events in the world of Indian finance have moved so fast, and so many far-reaching developments have taken place, that it is of urgent importance to make a critical estimate of these trends and happenings and to gauge the future in the light of facts and probabilities and plan for such future in a way that will enable India to secure the maximum benefits. Let us set down the more salient features of the monetary situaton as it has developed since early September.

Demand for money on account of trade requirements has shown heady increase. Prices of jute, jute goods, iron and steel, hides and leather, cotton, chemicals and a host of other articles have risen—in some cases, phenomenally. For financing the rapidly expanding trade in these commodities, the volume of funds required is twofold or even threefold of what was the case, say, this time last year. By the same token, the prices of shares of every description have registered substantial advances. Stock exchange operations are, therefore, causing increasing pressure on banks for security loans. It is also to be noted that there is a pronounced tendency on the part of market circles to carry and hold larger stocks of commodities than usual, in the hope that much higher price-levels are inevitable. In these circumstances, demand for money may be expected to keep rising and rising.

The next feature to which we should draw attention is the exchange position. Imports, except of what may be regarded as priorities, have more or less dried up. But exports, particularly in certain commodities, have been greatly, even extravagantly, stimulated by war demand. The orders which Indian industrial concerns may be receiving on account of British and Allied War Offices may be conservatively put down at Rs. 100 crores for 1939-40. All these payments will, doubtless, be made to the London office of the Reserve Bank. Likewise, the purchase of gold made in India by the Reserve Bank on account of the Bank of England are being for in London. Besides, the Reserve Bank will get credit in London for the large sums promised by Britain to the Indian military authorities for mechanisation. There is, in addition, the inevitable surplus of private mechandise and treasure account. In sum, India's accumulation of sterling balances in the remaining months of the current fiscal year may be of the order of £100 millions, after providing for the ordinary requirements of the Secretary of State.

Let us now turn to the Government of India's budgetary position and ways and means operations and to the repercussions of these on the monetary and financial situation. On the revenue side, the present indications are that the budget estimates are being more than realised. As regards expenditure, no definite data are available; and we are left with no more than shrewd conjectures. Taking all factors into account, the budget for 1939-40 may be expected to be adversely affected by the war to the extent of Rs. 15 crores or thereabout.

All this extra expenditure is, for the time being financed by expansion in the floating debt and by occasional recourse to ways and means advances from the Reserve Bank. The strain imposed on these methods of financing is aggravated by the short fall in the realisations of the last loan. The market has been called upon to finance provincial governments' treasury bills whose aggregate total comes to Rs. 5½ crores at the present moment.

Such is the picture presented by the phase of war finance as it has so far developed. And it strikes us that these are admirable conditions for the application of what Sir Basil Blackett would have called "planned money".

For such planning we have to lay emphasis on the following:

(1) Enlarged demand for money.
(2) Expansion of currency.
(3) Increased sterling purchases by the Reserve Bank. We estimate that excess sterling remittances might amount to £100 millions by March next.
(4) Adverse effect of the war on Government's budget.
(5) Greater strain on ways and means, the burden being borne by expansion of floating debt and advances by Reserve Bank and the effect being persistence of unwarranted dear money.
(6) Initial fall, very precipitous in the first shock, in giltedged and subsequent recovery under the influence of brighter reports from London.
(7) Increased net profits made by provinces likely to supply war materials.
(8) Repercussion of (7) on provincial and central budgets.

The surplus sterling purchases, which, as pointed out above, are estimated to amount to £100 millions by the end of March, provide the most appropriate starting point for a discussion of a scheme of planned money. The question arises: If such a large accumulation of sterling resources materialises, what is the best use to which it can be put? Our answer to this query was given in the following passage:

We would propose, for the careful consideration of the Finance Member, a scheme for utilising this golden opportunity to reduce India's sterling debt. It is, undoubtedly, a most rare happening that permits India an occasion to redeem its external obligation by such a substantial amount as £100 millions. India's sterling debt is now in the neighbourhood of £275 millions; and, if anything like a third of this could be liquidated, it should be a tremendous achievement for India from every point of view. India's credit will rise sky-high in the London market. This should have corresponding effects in the Indian market. To the extent that British investors are paid,

say £100 millions against their sales of India sterling stocks to the Indian Government, there is a considerable increase in the potential purchasing power of British investors for the Defence Loans. India's redeeming of a moiety of its sterling debt will, thus, be a most direct help to Britain's economic defence in the difficult war period.

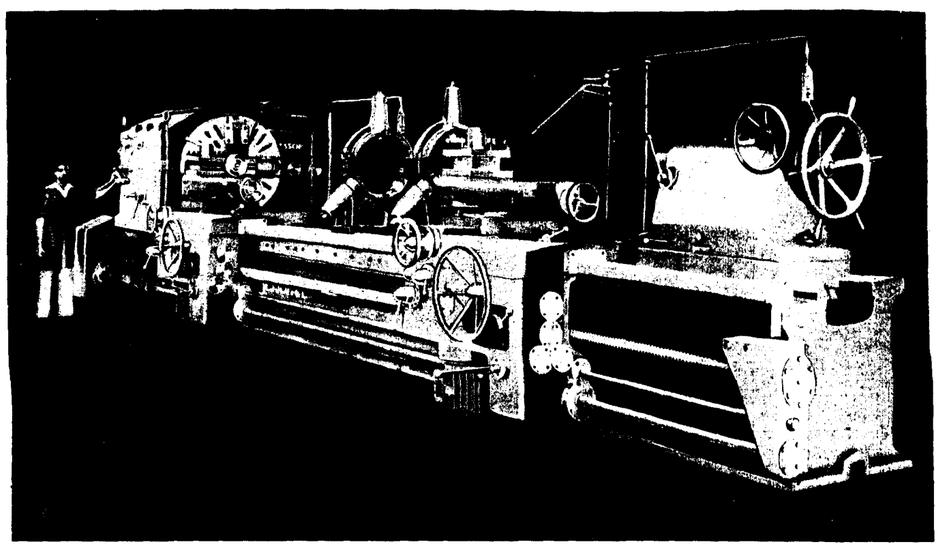
Among India sterling stocks, 3½ per cent. sterling paper, the total outstanding of which amounts to £88 millions, should prove the best choice for purpose of repayment. If India has to redeem this loan at par, it will mean payment of a heavy premium over current market rates. Our first important suggestion pertains to the redemption of this loan at a rate which will be fair and equitable to all concerned. Just as the British Government have, under DORA, assumed (and exercised) the power to call for returns of various kinds of securities held by the British nationals and just as they may, by all present indications, be exercising, in time, the power to ask for the surrender by British holders of specified foreign securities against payment in British currency, so could they call for particulars regarding holdings in 3½ per cent. India sterling stock and, on securing such particulars, decide on the scrip-holders being repaid on what may be decided on as equitable and fair terms. This proposal was put forward in our issue of November 25; and, as against the then-ruling rate of £79¼, we suggested that the holders of 3½ per cent. India sterling stock must be paid £85. Since then, there have been considerable rises in British Funds as also in India sterling securities. 3½ per cent. India sterling stock is now quoting £87¼. It will, therefore, be necessary to revise our ideas of what would constitute an equitable price.

The redemption of 3½ per cent India sterling stock will need £75 millions to £80 millions. To the extent we liquidate our liabilities in London for £75 millions to £80 millions, we will need to issue loans in India for Rs. 100 crores to Rs. 110 crores. As the growing surplus sterling balances are, in our plan, to be utilised for reduction of our foreign debt, it is worth while to consider if it will not be far better to keep the surplus balances apart from the currency reserve and in a separate fund to be called Sterling Debt Redemption Fund. So far as the additional currency required for payment against Reserve Bank's large-scale purchases of sterling is concerned, recourse to expansion against 'ad hoc' Treasury Bills seems appropriate. In which case, it will be necessary to raise the present statutory maximum of rupee securities (held in the Issue Department of the Reserve Bank) to, say, Rs. 120 crores.

If we have, thus, to tap the Indian capital market for Rs. 100 crores, it is of urgent importance that the technique of borrowing in India is brought in line with the British practices and traditions of recent years. From this point of view, there are three important lessons which India has to learn from the borrowing activities of the British Government during the last decade. They are: (1) the interest yield offered on a new loan must be less than that forthcoming on existing analogous securities, so that the immediate effect of the announcement of the terms and conditions of the loan is to cause an upward rise in existing securities so as to bring the yields of the latter in consequence with the lower yield of the loan; (2) an effective and elastic open market policy; and (3) the utilisation of the large extra-budgetary balances belonging to the various public departments such as postal savings, social insurance, etc., for the pursuit of an effective open market policy. In addition to these three main features of the credit policy and credit plans of the British Government, there is also the consistent and persistent devotion to a complete faith in cheap money as a solvent for the many difficulties and conundrums with which British industry or the British Treasury may be confronted from time to time.

The essential foundation is cheap money. To maintain cheap money and to keep maintaining cheap money, the problem of a bill market must be immediately and constructively tackled; and, pending the creation of such a market, the main objectives of official monetary policy must be:

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(1) the reduction of the floating debt; (2) expansion of currency to an amount of, say, Rs. 10 crores to Rs. 15 crores against "ad hoc" securities and the resultant addition to the Central Treasury's cash balances; and (3) the clearest indication to the market that, as a strong and confident borrower, the Treasury is not prepared to secure its short-term accommodation from the market unless it can get it at its own rates.

Next in importance to the maintenance of cheap money is Government's unshaken confidence in their own credit—and their determination to borrow at the cheapest rate possible. The tendency of the Government of India is to offer a more attractive yield on the new loan than that forthcoming on analogous existing securities. This is unsound tactics. This is suicidal policy. The British Treasury has, with triumphant success, pursued the opposite policy. The success of the War Loan Conversion in 1932 was due largely to the yield on the new loan being fully ½ per cent. lower than the then-ruling market yields. In a pamphlet on Cheap Money Policy, Mr. Frederick George Conolly describes the war loan conversion operation in the following words:

"The liquidity of the market was intensified with liberal purchases of securities by the Bank of England, which expanded the cash reserves of the Bank.

The scene was now set in exceptionally favourable circumstances for the great War Loan conversion, the mere idea of which had been a headache for the Treasury since 1929. The long-term rate on the market was about 4 per cent —the 4 per cent Funding Loan was around par, while the 3½ per cent Conversion Loan was 90—and the conversion of the War Loan to a 4 per cent basis was generally expected. When the rate of 3 per cent was announced at the end of June, 1932, the whole market, after the first shock of surprise, quickly adjusted itself to the new situation—the 3½ per cent Conversion Loan shot up to par and the 4 per cent Funding Loan to 110. The very size of the Loan to be converted and the obvious impossibility to reinvest on better terms gave assurance of success.

A conversion to a 4 per cent would merely have followed the market; the bold imaginative stroke anticipating events and leading the way to 3½ per cent, this was the very essence of the cheap money policy."

The same conclusion is forcibly impressed by the offer by the British Treasury of a 2 per cent five year loan to holders of 4½ per cent Conversion Loan. Mr. Keynes has been propagandising the necessity of the Treasury deciding that 2½ per cent must be the maximum borrowing rate in respect of defence loans. The British Government have made a good start with the first loan of the series bearing interest on a 2 per cent basis. Immediately on the announcement of the 2 per cent Loan, the giltedged market in London has risen in strident style. The test of a correct credit policy and the criterion of a scientifically planned new loan are that, on the publication of the terms and conditions of the latter, the giltedged market should react in a strikingly favourable manner. The Indian Government's credit policy and new loans should, by this test and by this criterion, be considered more or less uniform failures. It is time there is a sharp break with such an unedifying past.

If the Government are thus to be masters of the giltedged market instead of the market being their masters, the technique of an open market policy should be correctly understood and resolutely applied. In proclaiming this faith in an open market policy, the Indian Treasury will not be embarking on any sensational or novel procedure. This is nothing more than the bringing in line of the Indian credit policy and practice with the credit policy and practice followed by all countries which have adopted modern and scientific financial standards.

The resources for making an open market policy effective are to be found, directly and immediately, in the annual contribution towards reduction or avoidance of debt. This amounts to Rs. 3 crores. By way of additional funds and on the analogy of the large extra-budgetary sums now controlled by the public departments in Britain, we adovate the creation of an autonomous body under the name and description of "Unfunded Debt Commissioners," to whom the custody and management of Post Office Savings Bank, Post Office Cash Certificates, State Provident Funds and Depreciation and Reserve Funds should be handed over. The total amount involved in these funds is, on the basis of 1939-40 budget estimates, Rs. 269.04 crores. The proposal in this regard is, in rough outline, as follows:—

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"Against this liability, the Central Government will pass on assets for a corresponding amount in the form of 'ad hoc' treasury bills. These bills will be so adjusted as to yield to the Commissioners an annual income slightly in excess of the total interest obligations. The future accruals in postal savings bank deposits and in state provident funds will be invested by the Commissioners in Government securities and/or treasury bills according as the situation warrants from time to time.

As working capital in the earlier stages, the Government may decide that the assets to be passed on to the Commissioners will be Rs. 10 crores in rupee coin and as to the balance in 'ad hoc' treasury bills. As the stock of rupee coin in the hands of the Government of India is, according to our estimates, of the order of Rs. 35 crores, there should be no difficulty in sparing coin for Rs. 10 crores to serve as the initial working capital."

The annual accretions on which the Commissioners may reasonably rely are somewhat as follows:—

	(In crores of Rupees)
Post Office Savings Bank	6.00
State Provident Funds	3.00
Depreciation Funds	4.25
Total ...	13.25

If Rs. 13¼ crores could, thus, be available every year for the enforcement of an open market policy (and, mark you, this is in addition to Rs. 3 crores representing the contribution from central revenues towards avoidance or reduction of debt), there is every ground to believe that, in correspondence to the size of India's public debt, the resources which will be controlled by the Unfunded Debt Commissioners will come to play as important a part in the control and guidance of the giltedged market and the bill market and in the fashioning of the borrowing rate and the treasury bill rate in India as the large funds belonging to the public departments in Britain have been playing in British financial and credit policy and operations.

The principle of open market policy accepted, and the resources found, what should be the machinery and what the new 'personnel' required for a scientific and effective execution of such a policy? The Reserve Bank is, obviously, the institution through which open market operations should be carried out; but the 'personnel' of the Bank are hardly equal to this task as there is hardly anyone in the Bank's service who may be said to have central banking knowledge or experience of a practical and expert kind and to be skilled in the rites and rituals of high finance and money market technique as understood and practised in financial centres like London. Just as the British Treasury as well as the Bank of England have expanded their technical staff consequent on the many-sided expansion of activities such as the management of Exchange Equalisation Fund, the Indian Government should give immediate thought to the need of securing the services of one or more real central banking experts.

PLANNED INDUSTRY FOR INDIA

We may now turn to the planning of India's industrial development during the war. While in the case of monetary and financial policy, a minimum of continuity is inevitable, planning for industry in an emergency like the war pre-supposes a larger plan for India's industrial development, into which the immediate effects of the war and such positive steps as we may have to take under pressure should be properly fitted. Some indication of planned industrial development in the years following the termination of the present war would, therefore, be needed. But to attempt a detailed delineation of such a development will widen unduly the scope of this series, which seeks to concentrate public attention on the present wild currents of war economy and how best they may be controlled and canalised.

The vista of problems for industry opened up by the war is indeed very wide. But the problem of industrial planning during the war period lends itself to being examined in the following aspects:

1. Stimulus to existing industries to expand through (a) increased foreign demand, (b) enlargement of home market by stoppage of imports, (c) expansion of domestic purchasing power and (d) needs of new industries that may spring up during this period.

2. Need for new industries through
   (a) stoppage of imports,
   (b) needs of internal defence, and
   (c) production of war materials for the benefit of the Allies.

3. The relation of industry to the changing nexus of economic forces during the period of a war.

4. The relation of industrial development during the war period to the background of economic conditions at the end of the war.

It will be seen from the delineation of the four aspects of the problem that at more than one point, it impinges on the problem of "planned economy." No one will deny that, though action in an emergency is judged by its appropriateness for the hour, its ultimate wisdom is in the light of conditions which will rule when the emergency has passed away. If industry expands during war-time as a result of an increased foreign demand or a widening of the internal demand consequent on cessation of imports, there can be no question of the propriety of taking advantage of these new factors. But planning implies careful regard for the changed conditions after the war. Either the increased demand must be stabilised, or industry must preserve a degree of elasticity in its production. Likewise, new industries springing from the emergencies of the war will need to have their future reassured by appropriate changes in State policy or start their career as avowedly temporary expedients.

In both these cases, the need for contraction can, to some extent, be avoided by taking care to stabilise the home market by sustaining the volume of purchasing power within the country. But no one can deny the virtual certainty of a post-war slump or the folly of planning our internal economy on the basis of a considerably reduced volume of imports. Our import trade to-day is almost the bare minimum needed to sustain our export trade; and any further reduction in the value of our imports would involve a serious reduction of our exports. And no one would overlook the futility of economic planning in conditions of thoroughly disorganised foreign trade. We can, however, rely on imports of machinery making up for reduction in imports of consumer's goods. We can also expect internal industry to increase its consumption of our raw products thus reducing the export surplus. But all these factors are dependent on the general background of economic conditions which is the resultant of the forces that operate during the war period, the complexion of the Government which will be in power at that time and the policies which it will be in a position to pursue. But there can be no doubt, however, that the problems of planned industry overlap those of planned economy and that, in matters like avoidance of strikes and wage disputes and price control, even changes in the political constitution become relevant. They are of paramount importance in the matter of changes in fiscal policy calculated to ensure the stability of new industries.

Considering the various aspects of the problem of "Planned Industry" and their ramifications, it would be useful to devote this series to examine the problems under the following heads:—

1. Expansion of Existing Industries.
2. New Industries of the war period.
3. Needs of Indian Industry during the war.
4. Stabilisation of New Industrial Activity.
5. Industry and the State.
6. Industry and the Public.

EXPANSION OF INDUSTRY IN WAR TIME

It is necessary in the first place to examine the nature and extent of the expansion of existing industries. Of the industries catering to the demand for war-material, jute, iron and steel are the most important, followed by a number of miscellaneous productive activities. It has been announced more than once during recent times that the capacity of the woollen industry has been already strained and the Department of Supply has had to requisition the help of a large number of handlooms which it has switched over from cotton weaving to woollen. The manufacture of footwear is in a similar position. There are doubtless other activities which are stimulated directly or indirectly by the war demand. Whether the demand for these products will lead to the establishment of more organised large-scale units of production or not remains to be seen. But from the point of view of adjustment to post-war conditions which can be clearly foreseen to-day, there is

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much to be said for the kind of improvisation which the Supply Department appears to have carried out without any sacrifice of efficiency.

In any case, the importance of the miscellaneous industries is nothing compared to that of jute and iron and steel which are as important in peace time as in war. Jute and jute manufactures account for more than a fifth of our total exports, and iron and steel is the basis of all our industrial aspirations. If the expansion of the war period should entail any disorganisation in the post-war years, the consequences would be very serious to our national economy. In the case of jute, the expansion that has taken place so far is only in the nature of increasing working hours and the utilisation of the full complement of looms. While before the war, production was on the basis of 45 working hours with 25 per cent. of the looms sealed, after the war there have been two instalments of increase. All the looms were unsealed in mid-September and the hours, which were then increased to 54, were later raised further to 60 hours per week. This is a position which has never obtained through the long period since the termination of the last war.

In the case of iron and steel, the Tata Iron and Steel Co. has maintained an upward curve of production during the whole of the last decade and the curve has been more steep in recent years. The more significant of recent developments is the establishment of the Bengal Steel Corporation whose production is about a fifth of Tata's. Rearmament being far older than the outbreak of hostilities, booming conditions in the iron and steel industry in India are now of long standing. The immediate effect of the war is to necessitate the entry of the Indian industry into fields which they had so long neglected. The decision of the Tatas to put up a new blast furnace, which will be another record and which will have a capacity of 1,100 tons per day, represents the demand which the war has created for the products of Indian industry.

Turning now to industries which do not cater to the demand for war material, cotton textiles are the most important, as they are most favourably placed to take advantage of all the three factors, (1) the fall in imports, (2) lesser competition in foreign markets and (3) expansion of the home market. Up-to-date figures of production are not available in the case of indigenous industry. But the mild increase in the exports of cotton textiles and the fall in imports in the first four months of the war, for which figures are available, show that the forces for expansion are already at work.

Another indigenous industry which may be considered in this context is cement. But, it is more than doubtful if cement stands to benefit from the war conditions. It would appear that, cement, in common with soap and a few minor industries, can benefit less from the war directly than indirectly from the prosperity that the war might induce. There is then the chemical industry which has increased its production. But the more important parts of it are the new industries which have to be established.

Such, then, is the picture of the expansion of organised industry as a result of the war. How far the lines of development up to now can be projected in the future, during the currency of the war, it cannot be definitely said. But if war prosperity does not prove to be an idle dream, the present rate of development is bound to continue; and while expansion is exhilarating, so long as it continues, the need for adjustment, when it appears, is bound to be more painful.

It will be generally recognised that for the expansion of existing industries, unlike the establishment of new industries, there is no need for special aids. It may be presumed that every industrial unit has conserved the means of increasing production or otherwise utilising new advantages as they appear. Just as the iron and steel industry and the jute industry have been able to increase their output according to the improvement in demand, the cotton textile industry, in spite of its being less compact, more diffused and in most cases, less organised, will be able to increase the production and even improve its position in neighbouring foreign markets.

It may be said, therefore, that the far more important problem is that of preparing for the conditions that will follow the termination of hostilities. Here again, there is the counterpart of every force which during the war makes for expansion. Firstly, there is the cessation of the demand for war material which affects all industries which catered to it, whether old or new. Secondly, imports are bound to be resumed on the old scale, under more or less free conditions. Thirdly, the internal demand will suffer a notable shrinkage from cessation of production of war material and, what is far more important, the inevitable post-war slump. The post-war slump, it need hardly be said, is a far wider phenomenon than changes which originate within the country.

These aspects are best dealt with in relation to each industry which is subject to the stimulus of war conditions. In the case of jute, the difference between production and productive capacity, before the war, may be reasonably expected to represent the contraction that will be needed. It should be remembered in this context that the capacity of the jute industry, before the present war broke out, was nearly twice as much as at the end of the last war. The world has certainly grown up to the increase in our production of jute and jute goods. But world demand cannot be stabilised at the present war level. To ensure order in the jute industry, without exposing it to the dangerous chaos of the last decade and more, is an elementary function of a modern State.

The position of the iron and steel industry is far different in that an increase in steel production is the very basis of any real industrialisation. The increase in production that will be achieved in war time is not likely to be far in excess of the progress made in the years before the war. If new industries are established, as we have every reason to hope they will be, and if the industrialisation achieved during the war period has, in it, the seeds of further growth, then the productive capacity of the iron and steel industry will be found at the end of the war to be, if anything, below rather than above our needs. No problem, then, of contraction is likely to arise.

The case of the cotton textile industry is different in that its increase will rest on all the three factors we have mentioned before, viz., fall in imports, increase in exports and increase in internal prosperity. Cement and miscellaneous industries, will also find themselves in a similar position at the beginning of the post-war slump. In so far as the interests of any industry impinge on our foreign trade position, we have always emphasised the folly of seeking relief in a reduction of imports. But an attempt to stabilise or improve our exports to neighbouring markets, by closer commercial ties with Burma, Ceylon, Afghanistan, East Africa and other places, is on a different footing. It seems almost certain that the Indian industry will gain a better footing in those countries which should be strengthened by appropriate trade agreements.

NEW INDUSTRIES IN WAR-TIME

In the redistribution of productive activity in world industry and agriculture, a great war is undoubtedly the most potent factor. History affords many instances of nations being able to establish new industries in their territory on account of the prevalence of active hostilities between other nations, whether they are neighbours or otherwise.

The present war, if it does not end abruptly, will likewise prove to have effected similar far-reaching changes in world economy. The last war occurred when the world was on a predominantly free trade basis. But the present war comes after a fairly long period of economic reconstruction on a predominantly national basis. National economic policies have been pursued by almost all nations. To some, such a policy has been a necessity of war preparation. Others have pursued it for lack of a practical alternative. In such a position, the effects of war conditions are naturally different from the effects of war on a system of international free trade. For a country like India, whose problem is essentially one of raising the level of productive activity, war conditions are important only as affording the opportunity for a start in projects which even normally should be regarded as a necessity.

We have dwelt at some length on the relation of war to new industries, as, we believe, an understanding of this relation is of considerable importance in determining the kind of new industrial activity which India should attempt during the course of the present war. There is a radical difference between the relation which expansion of existing industries, bears to the war, and the relation of the new industries to it. For, while the former may be regarded as mainly a question of utilising a fortuitous prop, it would be wrong to think that war conditions afford anything more than a valuable start for the establishment of certain industries. War or no war, a variety of new industries have to be established in India, some to fill the gaps in our industrial structure, some to meet the needs of national defence and others to ensure that the volume of annual production of wealth will rise to the requisite level and facilitate the progress necessary for a reasonably high standard of life for our population. It may be said therefore that, while in the matter of expansion of existing industries, our policy during war time must take into due consideration

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the conditions of the post-war period, in respect of new industries, it is, generally speaking, the policies of the post-war period that must be adapted to the needs of these new industries at that time.

The industries which are likely to be started during the course of the war may be divided into three groups: (1) those which are necessitated by the cessation of imports, (2) those which will be established by the Government in order (a) to augment the supply of war material for the Allies, (b) to strengthen the defence of India, and (3) those which private enterprise may find it profitable to institute in the general economic conditions which the war may create within the country. The new industries for which the impediment to imports has caused more favourable conditions are mostly in the nature of necessaries for the operation of existing industries. A large part of our imports before the war represented the raw materials and spares and parts which no industrial nation can afford to acquire from abroad. Reliance on foreign sources for such goods really represents the gaps which we have allowed to remain in our industrial structure.

Industries for war material whether for the Allies or for the defence of our frontiers depend to a great extent on the initiative of the Government and depend, therefore, a great deal on official policy. A high degree of industrialisation is an essential preliminary to adequate war-preparedness; and if the political status of India improves or if the war should spread, India would have to acquire without further delay these attributes of industrialisation. The same may be said of shipping, too, whose growth, particularly in regard to shipping, is bound up with the building of an Indian navy commensurate with the long coast line that has to be guarded. Manufacture of aircraft is still an extravagant aspiration, but an automobile industry, which is a stepping stone to it, has been planned from a long time ago.

NEEDS OF INDIAN INDUSTRY DURING THE WAR

The requirements of industrial expansion during a specially favourable period are best thought of in relation to the initiation of new activity, the conduct of such activity and its stabilisation and progress in the future. The problems in regard to such new activity are different when it pertains to expansion of existing ones and when it relates to altogether new fields. Expansion of existing industries, as we hinted at an early stage in this series of articles, raises no special problems. The position is different, so far as new industries are concerned. Here it is necessary that the realisation of possibilities should be regarded as the special responsibility of our industrialists and businessmen. In India, our industrialists are more keen on a dispersion, than a proper integration, of their interests. It is not uncommon to see the same set of magnates interested in every one of our leading industries. Though there are, doubtless, historical reasons for this, as, for instance, the traditions of the managing agency system, and though there is also some good flowing from this tendency, it is now extremely important that the leading interests in every industry should seek to increase their activities on the lines of what is commonly known as vertical combination. Every industry in India has a strong all-India organisation which looks after the common interest of its members. The imprimatur of the official organisations of such industries has a value far exceeding any specific calculations that one might make of it.

In this view, it should be possible for the Bombay Millowners' Association to set out plans for the production of spares, stores, miscellaneous machinery required in cotton mills, dyes, chemicals etc. The jute mills of Calcutta could similarly look after the industries subsidiary to the jute industry. The iron and steel industry, whose position is different in that it has to assist more directly than others in the prosecution of the war, could lend not a little assistance in the manufacture of small machinery. The automobile industry, when the time is ripe for its establishment, will depend on the iron and steel interests, not only because of the importance of the raw material, but also because of the resources, material and other, which these interests can command. It is clear from the above that to realise the possibilities for expansion, the main tasks that have to be performed should be deemed to be assigned to the various industries on the basis of the close relation between each industry and the requisite new activity.

We may now turn to the question of the conduct of new activity as distinct from its initiation. Here there are somewhat disconcerting problems regarding equipment in men and material. We have no desire, and we are hardly competent, to enter into the technical aspects. But it is obvious that where machinery has to be imported from abroad, special steps have to be taken to ensure such import. That applies also to

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specially skilled technicians. But industrial activity in India has improved so much in variety and in quality that we are probably less dependent than before on outside sources. Here, too, the initiation of new ventures under the auspices of our industrial organisation has the advantage that it can bring about, for all practical purposes, a pooling of our resources of technical skill. There is a feeling, the justice of which we can hardly vouch for, that foreign technicians in Indian employ are dissatisfied and are unable to put forth their best. It is imperative that such feeling should be given no room.

PLANNED ECONOMY FOR INDIA

Planned Economy, as distinct from planned money or planned industry, should aim at providing a proper foundation for the impressive superstructure which the special conditions of the war enable us to construct in the shape of repatriation of foreign debt or establishment of a wide range of new industries. The task would have been almost impossible, if the war did not afford the same kind of special opportunities in the general economic life of the country as in that of money or industry. It consists, therefore, largely in ensuring that the benefits, which the masses derive from the special conditions of the war period, do not evaporate or are frittered away but are stabilised to form a secure foundation for further progress. The advance on the "money" and "industry" fronts has thus to be strengthened by a consolidation of the general economic conditions in the rear. New industries and increased investments of the Indian public in government securities should derive strength from a more broad-based prosperity in the country. By the same token, they must contribute to the increase in the prosperity of the masses.

Our aim in this series of articles on Planned Economy for India will, therefore, be to examine, firstly, the benefits which the war bestows on the masses; secondly, the means by which they are conserved; thirdly, their relation to the advance in money and industry and fourthly, how best they may form the basis of the comprehensive schemes of economic planning which the country expects to pursue after the war.

The War and the Masses

In regard to the first, the impact of war conditions on the economic life of the masses is rarely susceptible of exact measurement. While industry is always in a position to derive the maximum benefit from every favourable development and, to some extent, dodge the obstacles that may be thrown in its path, agriculture has no similar advantages. And while there is a whole series of administrative actions which may benefit industry and business in the urban areas, the only act which affects the masses is price control, which at best cuts both ways.

The first step, therefore, in the task before us is to sift the factors which affect the masses favourably from those which either do not affect them at all or affect them only adversely. It should then be possible to appraise the favourable factors and determine the extent of the benefits they confer on the people. As is well-known, the war benefits India through the increased demand for our raw materials and through the scope for expansion of existing industries and the establishment of new ones consequent on the interference with imports and the needs of defence. Of these, only the demand for raw materials can benefit the masses.

Of the commodities which are in greater demand as a result of the war, jute, of course has pride of place. Here we are concerned with the increase in the realisations of the cultivators. Considering that the drop in the price of jute is about 50 per cent. from the peak levels of the first two months of the war, the average price for 1939-40 can be safely put at Rs. 60 per bale against a comparable average of Rs. 30 per bale in the previous year. With the increase in the crop from 90 lakhs bales to 105 lakhs bales, the increase in the income of the cultivators should be in the neighbourhood of Rs. 36 crores. Groundnuts and linseed have a position similar to jute inasmuch as the internal consumption of these commodities is inconsiderable and more or less the whole of the increase in price may be deemed to be paid by foreign importers. With an increase in price of Rs. 5 per candy, groundnuts may well account for an increase in income of Rs. 5 crores. The price of linseed rose by about 100 per cent. immediately after the war and there has since been a fall of 30 per cent. from the peak level. Taking the average price at Re. 1-8-0 per maund, a total crop of 3 crores maunds may yield an additional income of Rs. 4½ crores.

We may now turn to raw cotton, which is differently placed from jute as only 30 per cent. of the total crop is exported in normal years and indigenous mill consumption

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has been steadily on the increase. In this case, the rise was too sharp to admit of any large sales by cultivators at those high levels; and the higher level of prices obtained for an all too short period. The fall since then has, however, been only to the extent of 25 per cent. With the average price at Rs. 225 against the average of 1938-39 of Rs. 160, the entire cotton crop would account for an increase in income of Rs. 30 crores. Though exports of wheat are not high, the increase in the price of wheat has the same immediate effect as in the case of other commmodities of putting money into the pockets of the cultivators. As the average price is higher by Rs. 4 per candy, one might put Rs. 1½ crores in this account to the credit of wheat.

As for rice, it is doubtful how far it would be justifiable to include in this estimate the increase in the price of the total rice crop. For one thing, a larger part of rice is grown for home consumption than any other food crop. Rice no longer figures in our export trade; and the increase in the price of rice is almost as sterile as a purely inflationary rise in prices. Nevertheless, till it is fully neutralised by a rise in costs of living, cultivators do derive a benefit from the rise in the price of rice. Though on the basis of an increase of Rs. 5 per ton in the price, the war profits on this account may be put at Rs. 10 crores, it would not be unduly conservative to halve that figure for our purpose. There are other commodities whose prices have improved to the advantage of the masses. Various seeds, castor and the rest, have gone up in value. There is also the case of raw hides and skins which are produced by the rural masses. No estimates are possible in this regard. But one might assume that all these would together account for an addition of not less than Rs. 5 crores to the income of the masses. These figures put together make an impressive array and total Rs. 87 crores.

It is difficult to be positive about the changes which this figure will undergo in the subsequent years of the war. The state of communications is a very uncertain factor. Competition, too, might be keener in later years than it has been till now in the commodities in which India has no monopoly; but it will tend to be more than offset by the Allies' facility of payments to India. The demand for our raw materials may be expected to continue; but official policy and political conditions are unpredictable. Above all, war profits in the future are bound to be neutralised to a greater extent than till now by the rise in costs of living. So far, the increase in cost of living, reckoned as an average of the increases in the urban centres for which the cost of living index is compiled, is only 7.5 per cent. of the pre-war level. It is bound to increase as the war prolongs. But war profits are certain to continue; and the chances of their being neutralised or otherwise reduced only make it all the more necessary that official policy should clearly recognise the Government's duties in this regard.

These duties are, (1) to augment by every legitimate means the income of the masses during this period, (2) to prevent any unfair inroads into these profits by other sections of society, either by profiteering or by other means, (3) to ensure their proper utilisation in the direction of (a) the removal of old handicaps like indebtedness, (b) productive expenditure like such rise in standard of living and improvement of capital equipment as are conducive to more efficient production, and (c) savings.

War Profits for the People

In this country the economic problem of the masses during the war period is not half as complicated as in Britain or any of the belligerent countries.

The role of the Government in India is not to equalise the privations of war but to augment its profit for the masses and to ensure the utilisation of such profits in such a manner that the masses and the country at large will alike derive the utmost benefit therefrom. But these incomings are threatened firstly, by the rise in the cost of living due not only to natural causes but also to artificial causes like profiteering, secondly, the indiscretion, of an ignorant and long-suffering class.

It is comparatively easier to increase the war profits of the masses than to ensure proper utilisation. For it is always the case that problems are more difficult to solve when the solution depends on the co-operation of the people than when it rests on the administrative actions of the Government.

The first step, therefore, in this direction is to disarm all suspicion that, through a number of administrative measures, each of which by itself tends to escape public attention, the authorities are seeking to apply the brake to the rise in the price of our export staple. It should suffice in the present conditions if the authorities would desist from increasing the handicaps of trade and confine themselves to preventing inflation and inflationary rise in prices and profiteering in the necessaries of life. The Government can hardly afford to increase the restraints on trade without an attempt to provide compensations in the shape of special facilities which would not be available in the conditions of the war.

The other aspects of increasing the war profits of the masses is comprised in the price policy of the Government. Price policy is not and cannot be altogether divorced from the currency and credit policy. Prices during the war period are

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dependent in the initial stages on the psychological factors, the anticipations of security or plenty, the general feeling of unsettlement and the ability of groups to take advantage of these feelings on the part of others. From the standpoint of the masses, two more or less conflicting objects have to be kept in view. Firstly, it is necessary that the rise in prices of agricultural staples should not be jeopardised by inadequacy of finance and restriction of credit. Secondly, no inflationary rise in prices should be allowed which will neutralise the high prices or affect unduly the increased incomes, which the agricultural masses may be deemed to be entitled to in the conditions of the war period.

PREVENTION OF INFLATIONARY RISE IN PRICES

We trust it will be readily agreed on all hands that when we ask for a high level of export prices and comparatively low cost of living, we are asking for no unfair manipulation in the interest of the people. For the high prices of our agricultural produce have every conceivable justification. That the agriculturist was ruined by the Great Depression and that even the so-called recovery, he was not better off and that for nearly a decade this is the first chance he has of a fair recompense for his troubles will be readily granted. But they are far less important in this context than that the rise in price is justified by the intensity of demand. Likewise, in regard to the cost of living, it is obvious that it will degenerate into mere profiteering, if higher prices are not justified by higher cost of production. Now, when we consider that the necessaries and comforts which are within the reach of the masses are all too few and that the majority of them are produced at home with indigenous raw material and indigenous tools, an increase in their cost of production is not inevitable and may, generally speaking, be prevented. It will be seen, therefore, that there is nothing intrinsically uneconomic in making the demand that export prices should be helped to rise and cost of living should be maintained at low levels. Administrative and not theoretical objections can alone be held to be valid.

But the solution may be sought in two different ways, one by taking steps to increase the volume of goods by organising new industries and raising the standard of living. The other is to divert these incomes, in the case of each class to appropriate capital expenditure, so that not only are these incomes prevented from running into current purchases and thus leading to a rise in prices, but a great part of the money flows back through various ways into the coffers of the Reserve Bank. The masses should be taught to spend a part of their increased income in reducing their indebtedness, in improving the capital equipment of their respective callings and in inaugurating new forms of co-operative activity. To the extent that the propaganda for these purposes succeeds, a headlong rush of new money into current expenditure will be avoided. But far more important than the incomes of the masses are the additions to currency necessitated by the transfer of foreign balances to India. It will be seen that the financing of the movement of the crop and the settlement of the claims of the exporters go hand in hand in the process by which the Reserve Bank accumulates sterling securities in London and, on the strength of those securities, expands currency and meets the claims of the exporters. To increase the volume of circulation merely because the exporters have to be paid in rupees is to confess to a confusion of the currency problem and the transfer problem.

PRICE CONTROL FOR THE PEOPLE

So far, we examined the objectives of price control, with a view to dispose of spurious claims to its benefits. We stressed the fact that the legitimate interests of the Government are not met by artificial control of the prices of agricultural produce and that what Government might lose by having to pay high prices for jute or other agricultural war material can be more than recouped by the E. P. T. and the general expansion of revenue consequent on the increased prosperity of the country. At any rate, the fact that the benefits of controlled prices may be reaped by others who have no claim on the agricultural masses of India should be a conclusive argument against control of the prices of agricultural produce. There remains, however, the case of other sections of the population, notably, the producers of manufactured articles which are consumed by the people. It would be manifestly unfair to call upon the manufacturers to make any positive sacrifice for the sake of the consumers. But it will be readily seen that manufactured articles, which are articles of general consumption among the masses, are but few. If the aim is to prevent the cost of living from showing undue increases, then the number of manufactured articles whose prices have to be watched are limited in number. Cotton

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goods, kerosene, coal in certain urban areas and a few others are all that matter. An attempt at regulating the prices of these goods cannot give rise to complicated problems. Neither the supply of kerosene oil nor the supply of raw cotton for our cotton mill industry is likely to be seriously jeopardised during the progress of the war.

The larger and more complicated problem of controlling the prices of raw material and finished products of various industries does not, therefore, concern us here. The complications of this problem arise from the fact that not only are some raw materials derived from abroad and are, therefore, liable to suffer variations in stocks and supplies, but the product of one industry is often the raw material of another. When the authorities restrict the price of the product of one industry, they must accept the obligation to regulate the prices of the raw materials of that industry. This necessarily involves wandering in a labyrinth of economic relations. The difficulties and embarrassments of the authorities cannot, obviously, be got over by any cut-and-dried formula. All that can be said is that the attitude towards industrial products cannot be the same as the attitude towards agricultural produce. For, while the rise in the price of the latter benefits the people at large, an improvement in the price of manufactured articles can benefit only those who are connected with the industry. To the extent of this difference, the claims of the Government to regulate the prices of industrial products may be said to be different. In a number of cases, the increase in the demand for manufactured articles originates in a Government order. Some of the industries during war time owe their very inception to Government help and Government custom. In such cases, the action of the authorities is less in the nature of price control, as ordinarily understood, than in the nature of a business deal between producer and consumer. Sandbag orders, orders for shoes and other requisites of soldiers go through this process of intelligent and seemly bargaining. And one may be sure that, when new industries are started to meet the needs of the Government in respect of the war, there will be similar understanding of the terms on which the ventures will be made and the products disposed of.

We have thus seen that, on the one side, there is a whole series of agricultural products which should not be subject to price control and that, on the other, there are a number of manufactured articles whose prices tend to be regulated by the Government acting less as the repository of communal authority than as an important consumer. The problem of price control arises in the main in regard to the goods that remain between these two extremes. It is in these goods that the tangle of prices and costs is most difficult to unravel. The guiding principle should, no doubt, be that no increase in prices should be allowed which is not justified by a rise in costs. In other words, a mere intensification of demand or a relative shortage of supply arising from interference with communications should not be accepted as a valid reason for putting up the price. Where there is a real shortage, there is a case for Government control of stocks and rationing according to the public interest, and not a mere increase in price such as would fleece the consumer. Discussions on price control have often laid stress on the principle of replacement costs. While it is undeniable that the value of any given commodity is determined by the cost of replacement, it is by no means equitable that any individual or group of individuals should be allowed to profit by a sudden scarcity.

The scope and objectives of price control are then best determined by a process of elimination. The first step is to recognise that the prices of the agricultural staples of our export trade should not be controlled. Secondly, in war industries and in industries supplying war material, the position of the Government as by far the most important customer will lead to a process of bargaining which obviates the need for control. In regard to the prices of the goods between these two extremes, the principle that no increase in prices should be allowed which is not fully justified by an increase in costs, if it is adhered to resolutely, will help the authorities to overcome many embarrassments and complications; but the principle of replacement costs will more often than not lead to distinctions of an invidious kind.

Even when the scope is thus narrowed, there is the general tangle of prices and costs which has to be considered. Here, it must be recognised, the cost of living is a factor in costs which is common to all industries. By stabilising the cost of living, the authorities will be sterilising one of the most potent sources of instability in costs and in the economic life of the country. A stable cost of living is a help not only to the agriculturists but also to industry.



THE STATE AND INDUSTRY

The relations between the State and industry are normally the subject of inconclusive academic discussion. But in the present conditions they may be discussed from a rigorously practical standpoint. For certain objects like the prosecution of the war, the expansion of industrial activity for meeting fully the needs of the civil population and for war material, the maintenance of prices at levels at which social discontent can be prevented and the utilisation of opportunities for the establishment and growth of new industries are all matters of common interest for the Government, industry and the public at large. It might therefore, be said that in regard to the expansion of existing industries, the obligations of the State are mainly in regard to labour conditions and price control, the ensuring of supplies of raw material and markets for finished products and, last but not least, a financial policy which will afford scope for the growth and development of industry. In all these questions, private industry depends to not a little extent on the attitude and policy of the Government. It is not necessary here to expatiate on the principles which should govern the taxation policy of the Government during the period of the war. We have had to enunciate them in various contexts, in our comments on the Excess Profits Bill, on the Budget for 1940-41, and on various other occasions. Suffice it here to say that a policy designed exclusively with an eye on a balanced budget is apt to stunt the growth of industry. The Government may, for the moment, have the satisfaction that deficits have been avoided and may even claim that they have not allowed the burden of the present generation to be shifted to the future. But immediate taxation is almost certain to leave the future generations in a worse economic state than they would find themselves in, if industrial growth were stimulated at the present time, even at the risk of additions to our unproductive debt. It may be urged that a country whose primary problem is the increase in capital equipment and productive capacity would be ill advised to be a stickler for considerations of financial purism which must justly govern the actions of, say, the British Chancellor of Exchequer.

Another vital requirement of trade and industry during the war period is the maintenance of communications, both for the receipt of essential raw materials from abroad and for the export of Indian goods to foreign countries. Already, complaints have been voiced by the spokesmen of the commercial community that, due to lack of shipping space, trade is suffering considerable privations. Not only in the matter of shipping space but also in the matter of arranging for the import of certain goods, the watchful care of the Government is undoubtedly essential. It is, indeed, a pity that, though a major European war had been a certainty for long before its actual outbreak, the Indian Government had not given sufficient thought to such vital needs as a national shipping industry and essential defence industries. These omissions of an earlier period can in the present conditions be made up only by Government taking watchful interest in the availability of shipping space and in making special arrangements for the import of goods of which we may in the future experience a shortage.

We may now turn to the question of labour conditions of which prices and the cost of living may be considered to be an important element. It is a truism that, if Indian industry is to grow during the war period and serve itself and the country and the cause for which the present war is being waged, it is essential that industry should be enabled to operate continuously and efficiently without the interruptions caused by trade disputes. For ensuring peace in industry, it is idle to suggest that fair treatment of labour according to any pre-conceived standards would suffice. Nor would legislation empowering the prevention of strikes and lock-outs by Governmental authority serve the purpose any better. In fact, both the policies in conjunction are more likely to produce the desired result than any one in isolation. Thanks to the efforts of the popular Governments to establish machinery for the settlement of industrial disputes, most provinces have now the means of bring about a settlement of trade disputes, provided the conditions are not too unfavourable. It follows, therefore, that what is needed, more than anything else today, for ensuring continuity of industrial operation is a policy in regard to prices which, by preventing uneconomic rises in prices and consequent maladjustments of prices and costs, will make it comparatively easy to determine the extent of wage increases and to satisfy the equitable claims of labour.

Now industries, unlike established ones, require in addition special facilities from Government for their inauguration.

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Strictly speaking their needs are not far different from those which have come into the shelter of a protective tariff, except that in the conditions created by war, the special stimulus of protective duties is not needed. But, for their inauguration on an adequately big scale, it is as necessary in war as in peace time that their future should be assured through a clear enunciation of official policy. Substantial protection may not be needed when the importer is kept at arm's length by lack of communications. But the recognition of the claim to support from the State is indispensable in the long view; and most of our expectations would be belied if such an assurance were not forthcoming. It is also necessary that the other features of our policy of discriminating action, such as preference for Government orders should be vouchsafed. Government are most unlikely to think of thhe needs of new industries when there is hardly any evidence of their regarding the present as an opportunity for accelerating the pace of Indian industrialisation. More important than any specific measure for the encouragement of Indian enterprise is the assurance that the authorities in this country fully recognise the wisdom of checking the post-war slump with carefully conceived anti-slump measures. But such a policy depends, as, indeed, many others of the proposals we have suggested, on the presence of a national Government responsible and responsive to public opinion.

THE STATE AND NEW INDUSTRIES

Public opinion in India has long been insisting that no opportunity afforded by the war should be missed and that Government should not grudge private industry the aids which may be necessary for the establishment of new enterprises. The Governments of the British Dominions, who are as much at war with Germany as this country are taking care to see that the demands of Empire loyalty are not without adequate compensation in the economic field. But the Government of India seem concerned only to organise the Department of Supplies and to balance their budget both by new taxation and by the appropriation of the provincial share of income-tax.

But in his speech in the Assembly (March, 1940), the Commerce Member stated that, "so far as his department was concerned, their ideas were running in the direction of liberalization of the conditions regarding protection laid down by the Fiscal Commission so as to encourage production of commodities necessary during the war." For Sir Ramaswamy was careful to emphasise that "the Government would take care to see that they were not open to the charge, made in connection with the last war, that several industries came into existence which were of the greatest assistance in the prosecution of the war, but that, after peace was restored, they all languished and many investors were ruined." According to the Commerce Member, that charge was not just as conditions were then different and the policy of discriminatory protection had not been adopted and the Fiscal Commission had not even reported. Nevertheless, "the Government would now see that, if they encourage the development of industries during the present war, those enterprises were not left high and dry after the war ended."

The foregoing quotations are sufficient to show that the Government are thinking in terms, not of the progress of industrialisation in the conditions of the war period, but of "production of commodities necessary during the war". One even wonders whether these commodities are not limited, in the mind of the Government, to those necessary 'for' the war.

The cry for relaxing the conditions laid down by the Fiscal Commission may arouse cheers in the Assembly. But if war industries are not to be peace time burdens, the whole policy has to be conceived in terms of the entire economic structure as it is now and as it will be at every stage in the near future. Economic research undertaken after six months of a war, which is not less precarious than the peace which preceded it, can achieve nothing. When plans which are demonstrably feasible are in cold storage, it is idle to work for new ones. The Government of India must frankly and wholeheartedly accept the responsibility for industrial development to the fullest extent possible in those conditions. A correct apportionment of the task between private industry and the Government should be effected: and industry should be left in no doubt as to the help it can obtain from the Government. Every inch of new ground which Indian industry can annex must be mapped out in advance. And the general financial and economic conditions in which alone this expansion will be possible must be provided by the Government

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which, it goes without saying, must rigorously eschew all actions and policies calculated to give a setback to trade and industry.

PLANNED INDUSTRY FOR INDIA

If we consider here the question of the relation between the public and the progress of industry, it is because we believe there is now a set of circumstances in which the appropriate behaviour of the public is of great importance in the realisation of the economic potentialities of this war period. It should, however, be understood that here we are concerned with the relation of the public to industry and not to the part which the public can and should play in our national economic life considered as a whole. If the subject is so circumscribed, it will be seen that in this context the term "public" can refer only to the upper and middle classes and not to the masses. For the masses have no part to play in the progress of industry during the war. Even the crucial question of affording adequate patronage to Indian goods by forsaking the use of foreign goods does not arise in the circumstances of the war period. The special character of the period arises from the mitigation of foreign competition and the imperative need to substitute imports with indigenous products. It is the middle and upper classes alone that have to take an intelligent interest in industrial progress during this crucial period. The primary part of the classes is to appreciate the nature of the problem on hand. The first duty of the intelligentsia in any country and in regard to any problem is to be worthy of the name. When there is an intelligent appreciation of what is involved, the necessary favourable atmosphere is automatically created: and every practical step taken has far better chances of success than it would have otherwise.

It is necessary therefore, to recapitulate briefly the main conclusions which have been reached so far. We have, it will be remembered, considered the problem of industrial progress during the war under three principal divisions, the expansion of existing industries, the establishment of subsidiary industries and others that are needed to fill the gaps in our industrial structure, and the inauguration of new industries which are directly or indirectly connected with the war at the present time and with the defence of the country after the war is over. We have said that, so far as the first is concerned, existing industries should be well able to utilise, without any special assistance, the opportunities now afforded. We urged in regard to the second that it is the duty, and to the interest, of our industrialists to devise ways and means of establishing subsidiary industries and otherwise of filling the gaps in the present industrial structure of the country. And in our last article, we expressed the view that to secure this end, the Federation of Indian industries should appoint a small committee representative of our industries which will be charged with the duty of apportioning the work among the various industrial organisations and assisting them in the achievement of their allotted tasks. It is a matter for gratification that since then the Government of India have themselves offered to appoint an Industrial Expansion Board. When he announced this proposal in the Assembly, the Finance Member was not apparently in a position to give details. But whatever the constitution and functions of the official body, the need for a non-official body, which will be fully national in composition and outlook, would still remain.

These two bodies working on parallel lines would be able to initiate many practical schemes. In fact, it is a matter for consideration whether a division of labour between the two could not be brought about. For the Official Board could more appropriately deal with industries which, by reason of the close relation to the war and to the defence, would require official support and patronage. And the non-official body appointed by the Federation could look to the development and working of projects which fall within the sphere of legitimate private enterprise. While the Central Government ought to be prepared to play their part in industries which require State assistance, private industry for its part ought to be able to appraise prospects and to put forth its own unaided efforts for realising them. The tradition is yet to be built up in favour of different industrial interests co-operating among themselves to establish new industries. Such a tradition is easier to build if the common organisation of industries in India, namely, the Federation, were to take the lead.

If the industry does its part by taking up in earnest all the new schemes of development that are practicable in the present conditions the public can lend not a little help in making them successful. In the first place, the public have a grave responsibility in affording the necessary support for the flotation of new ventures. It is impossible that any considerable industrial progress can be achieved without a number of new companies being established with fresh capital. It is up to the public to participate to the fullest extent possible in the capital required for new enterprise. By being watchful of the terms and prospects of these new ventures without being hypercritical, it can raise the standards of new business in the country. It need hardly be said that without the necessary increase in savings, increased investment is impossible. To the extent that the middle classes are becoming careerist in mentality with a wistful longing for higher standards of living, the savings of these classes are bound to fall off. And what is worse, the natural temptations of a period of increasing money incomes might result in a serious setback. The idea that capital is created by the surplus income of the rich and that the lower middle class ought to live up to its income has in recent times spread far and wide. And the first obligation of the middle classes in regard to war economy is to realise that the best contribution they have to make is to the pool of annual national savings.

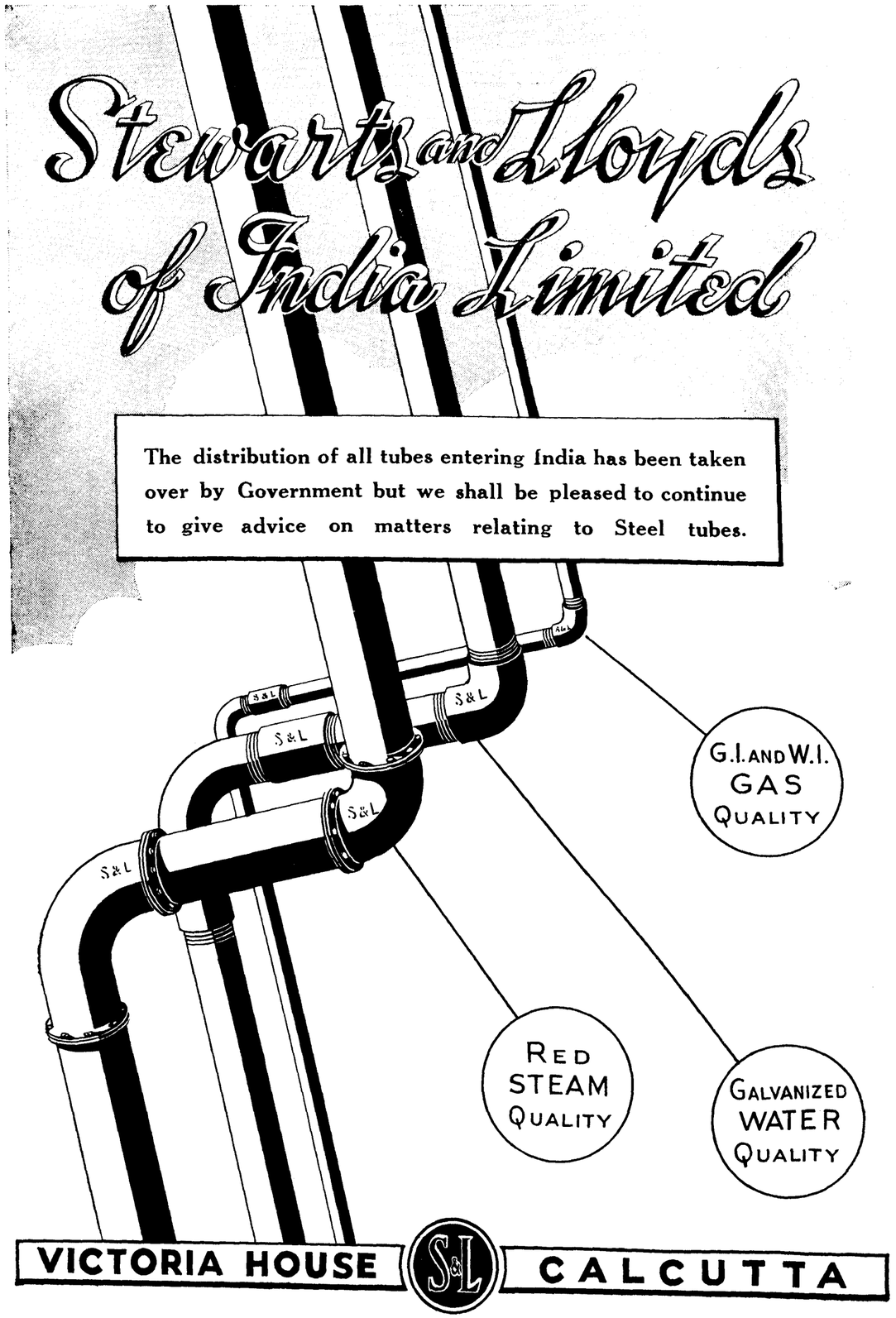
In regard to the functioning of industry, the intelligentsia of the country ought to exert the pressure of its opinion on the relations between employers and employed. With the war, there always comes an epidemic of labour troubles. We have already urged that the Government should endeavour through legislation, through the maintenance of statistics in regard to costs of living and other matters relevant to trade disputes and through other means to minimise wage disputes and interruptions to work. But an imporant factor which often tends to be overlooked is public opinion. Given a public which, while insisting on fair dealing, discountenances every stoppage of work as a serious disservice to the national cause would soon create conditions in which strikes and lock-outs will not be resorted to light-heartedly.

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INDIAN AGRICULTURE IN THE THIRD YEAR OF WAR

The impact of the war on the various products and the various sectors of Indian agriculture has, by no means, been uniform or similar. Nor has the pressure of war conditions increased at an even rate. This is only to be expected, since war conditions as they are to-day are the result of the stresses and strains set up from time to time by the direct requirements of the war and by the results of the various campaigns. These changes are necessarily wrought by the major events of the war as they occur in their historical sequence. At the time the war broke out, its effect on Indian agriculture was widely understood in terms of the known experiences of the lost war. It was widely believed that a European war would result in an enlarged demand for the foodstuffs and raw materials which are the staple products of Indian agriculture. There can be no doubt that, about this time three years ago, few people were able to envisage either the pressure that we now experience on our foodstuffs or the embarrassing surplus of export staples like cotton and groundnuts or the incentive and stimulus that are felt for the evolution of certain new types of agricultural raw materials like flax and silk hemp.

The picture of Indian agriculture during the war period such as we see it to-day was, if one may say so, slowly put together by the major developments of the world war. At the beginning, the relation of the war and Indian agriculture was true to expectations. A large demand on our raw materials like jute was immediately experienced. And though the rigour with which the blockade was maintained was not conducive to a free flow of our exports to neutral countries, it was believed that the short range of belligerency in the earlier years of this war would be conducive to the augmentation of India's export trade during the war. But disappointments were not long to follow. With the overrunning of the whole of North-Western Europe, the surrender of France and the virtually complete conquest of Continental Europe by Nazi Germany, the outlook of India's export trade changed altogether beyond recognition. Compensation for the loss of our export trade was obtained, though only partially, with the organisation of the Eastern Group Conference and the allocation to India of the definite responsibility for finding the requirements of the Eastern Group countries. It may now be possible to say that the fears, which were then entertained of the shrinkage of India's export trade, were somewhat exaggerated, though it remains as true to-day as when France fell that the problem of utilising our surplus production of groundnuts and short staple cotton is an extremely acute one. The main effect of the fall of France and the organisation of the Eastern Group was only in respect of the requirements of munitions and other things which are not too closely related to Indian agriculture. It was not till the entry of Japan into the war that the next crucial stage in the development of a war economy for agriculture was reached. The obvious effect of a war with Japan was the loss of a market for one million five hundred thousand bales of our short staple cotton. When Burma was lost, India was cut off from her normal source of supplies of 14 lakhs tons of rice. What with the reduction in supply and the increase in requirements consequent on our having to feed the growing military establishment in India and to supply neighbours like Ceylon, the food position began to cause more and more concern and to bring about the appropriate rise in prices. The pressure that was exerted by the war conditions on our chief foodgrains was naturally transmitted to the minor foodcrops and to the millets and grams which are grown in far-flung areas in all parts of the country. Thus, nearly all the products of Indian agriculture have been drawn into the vortex of war conditions. While in raw cotton, the adjustment to new conditions is to be sought either through reduction in acreage or the increased production of long staples, in groundnuts there are no alternative courses of action even on paper. In regard to the foodgrains, there is a clear need to increase production as far as may be possible, through the utilisation of lands which in normal times would be devoted to cash-crops, through the reclamation of cultivable wastes, through the increase of yield per acre by means of improved methods of manuring in particular and farming in general.

Allied to agriculture, but distinct from it, is forestry, for the products of which the war has set up in certain cases a new demand and in certain others a new need. In the case of the latter investigations and exploration are necessary before the needs can be met. In fact, it may be true to say that as a result of the war Indian agriculture calls for as much research as Indian industry if India's war effort is to be adequate to the needs.

A survey of Indian agriculture during the war has, therefore, to deal not only with the vicissitudes of our staple crops and the lines on which the food problem is sought to be solved, but also a wide range of experimental work with miscellaneous products of Indian agriculture and forestry. Even animal husbandry and poultry farming have felt the effects of the war in so far as the pressure on our foodstocks has led to measures for increasing the production of milk and eggs. The review of Indian agriculture during the war has therefore to include an inventory of the various subjects of research, even at the risk of being somewhat dull reading.

Taking foodgrains, we may start with two marked features of our national economy during the pre-war period. The first is that, though the mainland of India exported rice to a few neighbouring countries like Ceylon, it was on balance an importer of rice from Burma and rice imports from Burma were indispensable for the balancing of supply and demand. The other fact is that in regard to wheat, India has of late figured as an importer rather than an exporter and that with the increased demand for wheat during war time, self-sufficiency was the utmost that India could expect. In fact, the chances are that she may have to draw on Australia for part of her requirements. In these circumstances, the loss of Burma has increased, as already mentioned, the scarcity of rice; and the shortage of rice transmitted the pressure of increasing demand to the various other foodcrops. It is yet too early to expect official figures, which are often both out of date and inaccurate, to reflect these trends.

Considering the indubitable shortage of foodstuffs, it must be recognised that the problems ahead are far more important than the experiences of the past. The shape of Indian agriculture in the future must be determined by the success of the efforts now made to solve the problems on hand, whether in relation to the foodcrops where there is a shortage, or in relation to jute, cotton and groundnuts where there is a surplus. The two sets of problems may be said to be to some extent complementary, inasmuch as more land for the cultivation of foodcrops can be made available from the reduction in acreage of the land under foodcrops. But, it must be remembered, not only are severe limits to this transfer set by the suitability of the soil, but there are also the requirements of postwar readjustment to be borne in mind. For the present, however, the urgency for minimising food production is so great that thoughts of postwar adjustment seem an instance of far sight amounting to blindness to what is near.

It is significant that the Hon. Mr. Sarker, the Member-in-charge of the newly-constituted Food Department does not think much of the problems of postwar readjustment, so far as food production is concerned. In a broadcast on June 22, 1942, Mr. Sarker observed:

"Even from the purely agricultural point of view, the campaign in India does not present the problems or complications comparable to those in England. In Great Britain an expanded cultivation of foodgrains would force an encroachment on grass lands and consequently a curtailment of fodder and milk supply. There is also the risk of a loss on capital schemes of land improvement in respect of those areas where cultivation cannot be maintained in peace time against the competition of cheaper imported food. None of these problems and complications faces us in India. The fulfilment of the programme which our campaign has in view will, indeed, facilitate the postwar reconstruction of Indian agriculture instead of being a hindrance to it. We have, thus, no reason to be alarmed by the food situation with which we are confronted to-day."

The same view was stressed in an official 'communique' which sought to assure the cultivators that there are no risks in their responding to the Government's appeal to grow more food:

"It has been suggested, the 'communique' pointed out, that in the event of a sudden termination of hostilities, the demand for foodstuffs may fall off, leading to a deterioration in prices.

The Government of India regard the possibility of any such developments as remote. They would, therefore, ask the cultivators to be on their guard against any exaggeration of these fears and to go ahead with their plans for increased food production to meet the proved need of the hour. With the growing demand for foodstuffs on all sides, there is little chance of any serious fall in prices in the immediate future.

Even after the cessation of hostilities, the demand for foodstuffs from countries now devasted by war, is likely to increase

rather than decrease. India herself with her growing population needs more food than she grows at present."

Not content with affording this reading of the possible situation in the postwar years, the 'communique' committed Government to the principle of buying surplus stocks with a view to maintaining prices:

"It was recommended at the Food Production Conference held in New Delhi on April, 6, 1942, that 'the Government of India should undertake, should such a contingency threaten, to buy such quantities of foodstuffs in the open market as would prevent any serious deterioration in the level of prices.'

The Government of India have accepted the principle of this recommendation, and the details of a scheme for giving effect to it are now being worked out in consultation with the interests concerned. Meanwhile, the Government of India desire to convey this assurance to the cultivators that, should any developments take place which affect the saleability of the foodcrops, they will buy such quantities of foodstuffs in the open market, whether in British India or in the Indian States, as are calculated to prevent a serious fall in the prices. The Government of India are anxious to see that those who respond to their appeal for increased food production in this emergency do not suffer thereby."

With the ground thus cleared, we may turn to a bird's-eye view of the food position in India. It is well-known that even in the years of the best monsoons and harvests, the masses do not get adequate nourishment. But in a time like the present, our food requirements have to be estimated and set against our estimates of available food stocks.

Treating our total population of 388 millions as divided into 278 million adults and 110 million children, a well-balanced diet, according to Dr. Aykroyd and Sir John Russell, should consist of :—

15 oz. of cereals, 3 oz. of pulses, 10 oz. of vegetables, 2 oz. of fats and oils, 2 oz. of fruits, and 8 oz. of milk, making 40 oz. per day per head of population. The actual requirements, therefore, would be:

	Ideal requirements	Actual production	Deficit or surplus (in lakhs of tons)
Cereals	503	600	+97
Milk	365	228	—137
Pulses	101	103	+2

Of the three food items cited above, only milk confronts us with a serious shortage. There are besides other items such as fruits and vegetables in which there can be no doubt there is unlimited scope for increase.

As against these needs, what are our resources? The Hon'ble Sardar Sir Jogindra Singh in his speech at the first meeting of the Central Food Advisory Council said on August 24, 1942:

"The problem for you to consider is how to meet the requirements of our population and of the fighting forces, particularly in view of the shortage in rice ranging round 22 lakh tons as a result of closing down the sluices of supply from Burma and bad harvests in some areas.

We need not, however, be alarmed, as seasonal variations in some years have been large and in the year 1940-41 ranged round 44 lakh tons. The present shortage as compared with our total annual production of 264 lakh tons and variations, which have been experienced before, is not too large.

It is anticipated that an additional 8½ lakh tons of rice would be produced as a result of our campaign and other measures and the deficit in 1943-44 would be reduced to 11 lakh tons, provided we continue to be favoured to the end of the season by the monsoon as hitherto.

The normal production of wheat ranges round 100 lakh tons, and the last harvest yielded about 100.7 lakh tons, which would more than cover our normal consumption of about 99 lakh tons, but falls short of our estimated total war-time requirements of about 104 lakh tons. It is expected that in the next year, wheat production will be increased by about 4½ lakh tons as a result of our production drive: so no deficit is anticipated in 1943-44.

The wheat position has been aggravated at present by transport difficulties and the natural tendency of the producer to hoard the surplus. I feel confident that there can be no scarcity in the towns if we can coax the hoardings into the market. I can speak with some confidence that there is no immediate possibility of a shortage. The early rice crop will be coming into the market and should give 90 lakh tons. This would be followed by jowar (65 lakh tons), bajra (25 lakh tons), maize (20 lakh tons). We should get 110 lakh tons of these three crops. Thus, whatever the prospect may be from January to March 1943 for wheat and March to August 1943 for rice, the present position ought not to be one of much anxiety.

On the basis of our present estimates it is expected that during the current year we will have a net increase of nearly 8½ to 9 lakh tons in bajra and jowar production over their normal output."

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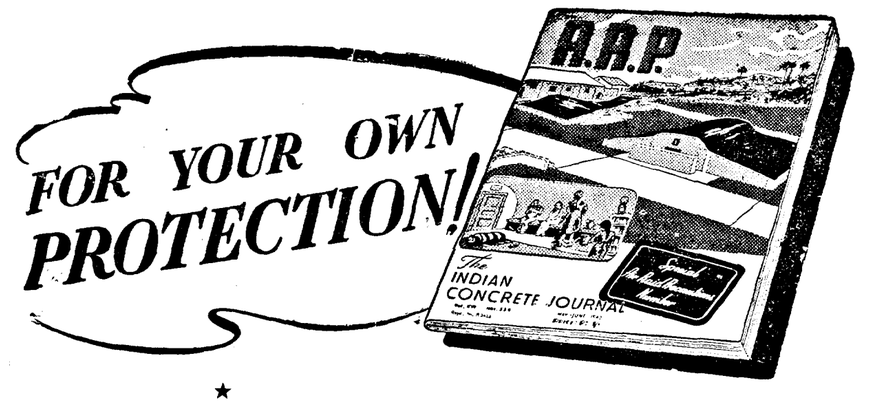
Actual experience has not, however, been such as to prove the correctness of this optimistic reading of the situation. Needs have been on the increase. And harvests have not been as good as they could have been. The havoc of the cyclone in Midnapore and other districts of Bengal and the unsatisfactory nature of the monsoons in South India have affected the yield. In the case of wheat, too, the measures that were adopted by the Government to buy and store up wheat have not been successful. At the close of 1942, the food situation wore a somewhat forbidding look; and it is certain that if conditions in 1943 are not to be worse the whole problem of adjusting Indian rice production to the needs and conditions of the war period will have to be carefully gone into.

It must be said in fairness to the Government that, though their spokesmen usually expressed very optimistic feelings, they did not underrate the gravity of the problem they had to tackle. It was recognised from quite an early stage after the loss of Burma that in the case of rice there was a clear need to extend cultivation. The Rice Committee of the Imperial Council of Agricultural Research recognised that the difference between India's rice consumption and rice production was already great and that reduction of rice supplies from Burma due to the war conditions brought forward prominently the need for a rapid increase of rice production. They therefore made the following recommendations:

(a) to provide facilities for timely and sufficient irrigation through canals and tanks in areas where such facilities did not exist at present;
(b) to distribute to cultivators manures, especially oil-cake, at cheap rates on a large scale, the price being recovered after harvests;
(c) to distribute pure and improved seeds on a large scale;
(d) to encourage the growing subsequent to paddy of suitable "rabi" crops like gram and other pulses in the paddy lands; and
(e) to induce cultivators to utilise the area released from other crops for rice cultivation so far as possible. The necessity of irrigation for paddy lands was also emphasised. It was considered to be of paramount importance to maintain and improve rice production in India and the particular attention of Provinces and States concerned was invited to this problem.

This recommendation must be regarded as part of the "Grow more food" campaign which the Government relied on to meet the problem of the shortage of foodstuffs. After nearly a year of experience of this campaign, it would appear that no claims can be made for it. One might even go so far as to say that it is strange that in a country like India such exhortations were deemed necessary for the growing of more food. For it is not as if in normal conditions the people of the country are able to get the requisite quantity of the staple food, not to mention the other kinds or the quality thereof. The conditions in which food production in India can be increased are by no means of a complicated character. Facilities for cultivation and the ordinary economic incentives should suffice to bring about additions to our production of foodstuffs. So far as the average cultivator is concerned, these incentives are no more than the chance of his being left with a fraction of the harvest which will meet the needs of himself and his family for food.

If in conditions such as these the campaign has been a failure, it is because the facilities are lacking. It is obvious no special measures are necessary to make more-food-growing profitable. Prices are high; the produce is easily marketed. And the farming classes know it all only too well. One has to conclude, therefore, that what is lacking is the means of cultivation, land, seeds, manure and water. None of these is in plenty. It is doubtful if any systematic survey of the additional land available for cultivation has been attempted. But from one's personal knowledge of the country, one may say that the problem is not of land as such, but of providing irrigation or other facilities for water for land fit for rice cultivation. In this view, even those lands, which can raise one crop more in addition to the usual number of crops, must be treated as additional. There can be no doubt that, if the Irrigation and the Revenue Departments work together in close co-operation, they can bring a considerable area of land under rice. The pinpricks, which the Revenue Department gives to the agricultural classes in the matter of water-rates, are well-known. Perhaps, they are inevitable in the zealous adminis-



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tration of this department in normal times. But in a crisis like the present, the administrative rigour of earlier days may have, so to say, been conducive to the creation of a few nest-eggs in the shape of land that can now be brought into cultivation. Likewise, there are considerable areas which can be made to raise a third crop. This is particularly true of the irrigation systems in which vast reservoirs have been created for hydro-electric installations. There is a feeling in the public mind that opportunities of increasing production may have been missed by the routine outlook of the Revenue and Irrigation Departments.

Since land and water are matters on which only the provincial governments can take action, the Imperial Council was content to concentrate on the question of seeds and manure. It cannot be claimed that the seeds problem has been solved. There is, indeed, much ground to be covered. It is known that with the improved varieties of seed, the yield can be raised by 10 to 20 per cent. But the improved varieties are used in only 6 per cent of the total area under rice. The Imperial Council is planning in collaboration with the Provincial and State Governments seed distribution schemes which ought to increase rapidly the use of improved seeds.

With regard to manure, the chief sources of additional manure are the manufacture of sulphate of ammonia, groundnut and other oilcakes, and compost making. The crops which have regularly utilised sulphate of ammonia are tea and sugarcane and, to a far less extent, rice. Since the campaign for more food cannot await the completion of measures for increased production of sulphate of ammonia, more reliance is placed on oilcakes and compost making. Oilcakes should be available more easily owing to the fall in the exports of groundnuts; and groundnut cake is found to be one of the best manures for rice. Compost-making calls for a great deal of propaganda. But one may be sure that, once the farming classes are able to get the necessary facilities about land and water, they would be able to find the requisite manure. It remains to be seen whether the authorities will take the initiative in the matter of bringing more rice into cultivation. The old idea that more land will come under rice merely because there is less need for jute and groundnuts should not be allowed to lull the government into a sense of false security regarding the food position.

The position in regard to wheat is that normally the yield of wheat in India is just over 100 lakhs of tons, of which about one-third is accounted for by the Punjab, which along with Central India, Sind, the Central Provinces and the United Provinces, have a surplus of about 9.11 lakhs of tons—the Punjab alone accounting for 5.45 lakhs of tons of wheat and 1.28 lakhs of tons of wheat flour—against an estimated normal deficit of 7.31 lakhs of tons of other provinces and States. In normal years India would thus appear to have a net surplus for export and other requirements.

In the current year the position has deteriorated a little, the output being estimated at 99 lakhs of tons. The U. P. and the C. P. instead of being surplus areas will be heavily in deficit this year. Fortunately the production in the Punjab will be practically normal. Sind, Central India and Bihar will have an exportable surplus of 136,000, 86,000 and 39,000 tons respectively. From information so far available the net deficit will be, taking into account extraordinary demands, of the order of 3.5 lakhs of tons.

Unlike rice and wheat, jowar-bajra does not present the picture of a net deterioration from an all-India standpoint, although figures of the year's production are not yet available. The normal production of jowar-bajra in India is 92 lakhs of tons, the amount available normally from the surplus areas, which comprise the U. P., Central India, Sind, Mysore and Hyderabad, being estimated at 1.89 lakhs of tons, against the estimated requirement of 1.54 lakhs of tons of the deficit areas. In other words, India has normally a small surplus of these crops.

The latest reports tend to show that in some of the important consuming areas the position is not quite satisfactory. The C. P., for instance, reports a shortage of one lakh of tons, Bihar of half a lakh of tons, while Hyderabad is threatened with a shortage of 2½ lakhs of tons, against the usual nominal surplus of 2,000 tons. These are, however, offset by a reported excess of half a lakh of tons in the Punjab and 75,000 tons in the U.P., and taking an all-India view, it may be said, broadly speaking, that the production of the year is not much below average.

A similar inference may be made about gram also, although in this case again, up to date figures are not available. The normal production of this crop is 35½ lakhs of tons, the chief

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producing areas being the U. P. followed by the Punjab and Bihar. It is estimated that the amount obtainable from surplus areas is about 3.01 lakhs of tons against the total requirements of 2.97 lakhs of tons from the deficit areas, mainly Madras, Bombay and Bengal.

Regarding the current year's crop, the latest information received from Bombay, Bihar and the Punjab, of which the latter has the largest exportable surplus in normal years, shows that the production in these provinces is normal. Nothing extraordinary has been reported from other provinces, and it may be presumed that the position in respect of this crop is more or less normal.

We have seen that the effect of the war on Indian agriculture, so far as foodstuffs are concerned, is to induce the threat of shortage and to create the need to bring in more land under rice and other foodstuffs. It may be supposed that a similar need is felt for other articles of food like milk, vegetables, eggs etc. Foreign trade enters but little into this sphere. The increase in demand is to be attributed in the main to the presence of large numbers of the fighting services in the urban areas, also of a new class of men who have acquired more purchasing power through the jobs created for the war. There is no reason to think that the production of vegetables has not been responding to the pressure of demand. It is true prices have gone up greatly; but that must be attributed to the inflationary trends rather than a marked disequilibrium of supply and demand. It is inevitable that the supply of vegetables should at times be found to be somewhat inadequate. But it is obvious that the shortage should be far more pronounced than it is, if supply had not grown to some extent with the demand.

Shortage, however, is keenly felt in the case of potatoes, since, as in the case of rice, we have had here both a fall in imports and an increase in the home demand on account of the needs of the fighting forces. The difficulty was felt more in the case of seed potatoes as the importation of potatoes into India for seed purposes from Italy was considerable, amounting to about 225,951 maunds (average for the years 1935-36 to 1938-39) valued at Rs. 11,01,509. Italian potatoes are largely used for seed purposes. The areas depending on this seed supply are mainly the Bombay Presidency and Sind.

There is a great need for increasing the production of seed potatoes in India and at the same time for the devising of means for preserving these during the hot and moist months of the year. It has been shown in the cold storage station at Kirke financed by the Imperial Council of Agricultural Research that seed potatoes can be kept at temperatures of 35 to 40 F. for five months without any effect on their germinating power. Experience is still lacking, however, as to the period during which seed potatoes will remain good after being out of cold storage and whether they will give as good crops as seed potatoes which have not been in cold store. Judging by experience in other countries, there ought to be no regulation of yield from cold stored seed potatoes.

There is also the question of the cold storage of potatoes for food purposes. In order to avoid waste and to keep prices steady, it is better to spread out the distribution of potatoes throughout the season. Expansion of cold storage, however, is a slow business. The United Provinces has the largest area under potatoes in India and a number of cold storage plants have been installed in some of the big cities of the United Provinces, like Meerut, Lucknow and Hapur.

Experiments have been in progress financed by the Imperial Council of Agricultural Research for the last four years in collaboration with certain railways on the construction of cold storage vans for the carrying of fruit and vegetables during long distances in the hot weather. No suitable design has yet been found but a great deal of useful information has been obtained and we now know fairly well what not to do. It is hoped shortly to have a design which will be practical and economical.

At the Potato Research Station in Simla a large number of valuables, including many wild species, has been collected by an Imperial Expedition to South America, largely financed by the Imperial Council of Agricultural Research. Many of these wild potato species have special advantages of qualities such as resistance to diseases and these qualities are being used to improve the local potato varieties by hybridisation.

We may now turn to consider the effect of the war on the production of industrial raw materials. While the need for increased production was felt more or less equally on all articles of food, industrial raw materials fall into two broad groups. The first group comprises the staples of our export trade, in which owing to the loss of foreign markets and the inability of indigenous industry to utilise the whole of the output we are faced with a clear need to restrict production. The other group comprises a number of miscellaneous products which are needed for war purposes or for which a new use in the present condition of war has been found by research. To take first the three great staples of our export trade, jute, cotton and groundnuts, the first is better placed than the others to face the problem of reduction, as its production is confined to one tract of land, and as schemes of restriction have been thought of in the past and applied to it on various occasions with varying success. In the case of groundnuts, the extent of reduction of output required is very great. While cotton stands in a category by itself, owing to the fact that increase of domestic consumption brings some relief and something can be done towards substituting long staple cotton in place of short staple.

The short staple cotton situation has become serious due to the closing of the Japanese market which used to absorb about 1,500,000 bales of this cotton. This constitutes a major problem which is at present under consideration by all the interests concerned.

The war has given a stimulus to the efforts of agricultural departments throughout India to extend the cultivation of long and medium staple cotton. Thus in the C. P. and Berar **Verum** cotton had extended to 2,70,000 acres in 1940-41 and had probably extended further this year. In the Khandesh District of the Bombay Presidency, **Jarila** cotton is spreading equally rapidly. Both these cottons can be grown in place of short staple **Oomras.**

As the result of research work carried out at Poona, the means have been devised for getting cotton races that are 100 per cent resistent to cotton wilt. This is an important step forward.

At Surat, success has been obtained in crossing American and Asiatic cottons. It is hoped to get fertile races from these hybrids by the aid of a drug called colchicine. Such races have the adaptability to Indian conditions of their Indian parents and the longer staple of the American parents. In all these cases, it would appear that the war would prove to be the motive power of long term changes rather than the parent of any quick transformation.

In the case of groundnuts the problem is radically different. The first objective of government policy was not to bring about an adjustment of production to demand but to protect the cultivator from the disastrous fall in prices

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which must follow so serious a shrinkage of demand. It was thought that as the British Government were the only foreign buyer of groundnuts, an agreement about the price to be paid would meet the needs of the situation. But this "solution" brought in other problems in its wake.

At the beginning of September 1940 His Majesty's Government undertook to maintain their buying price for Indian groundnuts at £10 f.o.b. per ton. This undertaking was faithfully observed; but exports of groundnuts at no time covered more than the smaller part of the whole output in this country and the quantities which His Majesty's Government were able to buy and ship at the agreed price were large enough to prevent the local market rates from falling appreciably below that level when a new and unusually large crop came into the market.

The firms through which that Government's requirements were bought therefore procured the quantities required at a rate appreciably below that which they received on shipping them. The resulting margin of profit for these shippers was consequently large. At the same time, it is clear that even if the higher price paid by His Majesty's Government could have been passed on to the actual producer, the result would have been in effect nothing but an unfair and fortuitous advantage to a small body of growers. It was decided not to reduce their prices below the agreed level. The Government received from the shippers a rebate equivalent to the difference between that price and the current market price in India. The Government of India proposed that the funds thus made available to them, supplemented, it was hoped by contributions from the Provinces and States interested, should be used as a fund to compensate such producers as were willing to submit to restriction. Finally, it was decided by a Groundnuts Conference that the most suitable method of helping the cultivator was to encourage the consumption of the crop partly by propaganda drawing attention to the use of groundnut oil as an illuminant, partly by increasing the consumption of groundnut cake as cattle-food and manure.

The development of new production after the discovery of ways of utilising some of our agricultural raw materials has, no doubt, been a slow process. But since it may well turn out to be of importance to the development of our post-war economy, we may mention here a few of the more striking instances of such development.

The outbreak of war cut off the supplies of flax to the United Kingdom from foreign countries. Flax is necessary for high quality canvas and is an important war supply. For experimentation with the growing of flax in India 60 tons of flax seed were obtained from Holland just before that country was overrun, but it got damaged during a long sea voyage and was of little use. The Committee entrusted with the cultivation of flax in India then obtained a small quantity of 30 tons seed sufficient for 600 acres from New Zealand, which has arrived in good condition and which will be grown in Bihar in the cold weather of 1941-42. The Government of India and the Government of Bihar are sharing in this undertaking.

An up-to-date plant for extracting fibre has already been obtained. If the present venture succeeds, Bihar should have an additional important fibre crop which can be grown during the cold months and will be a valuable additional cash crop.

A scheme for investigation into the methods of extraction of flax fibre in Bengal which is being financed by the Imperial Council of Agricultural Research has involved a scutching machine which is suitable for Bengal conditions. The scheme has also demonstrated the growing and extraction of flax in cultivator's land and it is expected that this work will open up a new field for Bengal. The Supply Department of the Government of India is interested in the extension of flax cultivation in Bengal and wishes to put in about 600 acres under flax in Bengal in the next "rabi" season.

The demand for sisal hemp for army purposes is great. India is unfortunately in a position to supply little of the true sisal (agave sisalana). These are only one or two sisal estates of any size in the whole of India. Other agaves are cultivated as hedges, particularly along railway lines in certain parts of India and might be made into a satisfactory though second class fibre. Certain individuals and States are considering the putting in of sisal plantations. This, however, is a long-term venture.

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DEVELOPMENT OF THE ROYAL INDIAN NAVY

The history of the Indian Navy dates from as far back as 1612, when the East India Company established armed vessels to protect their commerce from the Dutch, the Portuguese and pirates. Since then, under varying titles a naval force has always been maintained in India. In the year 1877, India's naval forces were reorganised as H. M. Indian Marine and in 1892 as the Royal Indian Marine. During the Great War six ships of the Royal Indian Marine served as auxiliary cruisers, while officers also served in the Royal Navy, in the Grand Fleet, North Sea, Red Sea and Caspian Sea Fleets, and carried out transport duties in the Indian Ocean to Africa, Egypt and Mesopotamia. As in the present war, a number of personnel was recruited on a temporary basis, amounting in all to 240 officers, 60 warrant officers and 2,000 men. This total has already been far exceeded in this war.

After the Great War, restrictions of finances bore hardly upon the Royal Indian Marine. Several schemes for its reorganisation fell through. In 1929, a departmental committee under the chairmanship of General Lord Rawlinson again proposed its reorganisation as a combatant service with the title of the Royal Indian Navy; its initial strength was to be 4 armed sloops, 2 patrol vessels, 4 mine-sweeping trawlers, 2 survey ships and a depot ship, under the command of a Rear-Admiral. The scheme was accepted by the Indian and British Governments and the necessary Act was passed through Parliament; the new Indian Naval Discipline Bill however failed to pass the Assembly in 1928 by one vote. In 1934, the Bill was reintroduced and, after circulation, finally passed.

The Royal Indian Navy was finally inaugurated as a fighting force at Bombay on October 2, 1934, and during the five years before the war broke out, it built up a small, but experienced, body of officers and men for the protection of India's coasts and borders, trained in mine-sweeping, gunnery, anti-submarine duties, communications, fishery protection and so forth. The expansion of personnel inevitably took time. It took four years to train an officer. H.M.I.S. "Dalhousie" had been converted into a training ship for ratings. It takes 18 months to train a sailor, part of which period was spent in the "Dalhousie" and the other part on the sea. By September 1939, the Royal Indian Navy had reached a strength of five sloops, or escort vessels, ranging from 1,200 to 2,000 tons, a patrol ship, a survey vessel, a depot ship and numerous small craft.

The Chatfield Committee which had been examining the whole question of modernising India's defences, when it presented its report in February 1939, made far-reaching recommendations for the Navy as well. The annual payment of Rs. 15 lakhs formerly made by India as a contribution to naval defence of the Commonwealth was surrendered by His Majesty's Government and the Royal Indian Navy assumed increased responsibility for the defence of India's coasts in close liaison with the East Indies squadron. Many of the other recommendations of the Committee remained secret but it was announced that it had recommended the strengthening of the R.I.N. by four modern sloops of the "Bittern" class and four "Mastiff" trawlers, and provision for equipping and manning auxiliaries in case of war.

The Royal Indian Navy was allowed to establish reserves shortly before the outbreak of the war. The Royal Indian Naval Reserve consists of serving officers and warrant officers of the Mercantile Marine. The Royal Indian Naval Volunteer Reserve originally had two branches, Executive and Accountant; a third Engineer Branch has been added since the outbreak of war. Officers of the R.I.N.V.R. are recruited from members of the general public, receive six months' intensive training at the depot and then continue their instruction at sea. For ratings a special procedure was set up. The ordinary continuous service rating serves for 12 years; the R.I.N. now also recruits special service ratings, who serve for five years, or less if sufficient, in the active service and then go on to the Royal Indian Fleet Reserve for the rest of their ten years' engagement. In addition 'hostilities only' ratings are recruited from personnel of the Merchant Marine; these are principally obtained from the trained crews of requisitioned merchant vessels.

The first vessel to be built in Indian yards, H.M.I.S "Travancore" was launched in July 1941. It may be interesting to observe here that the same month saw the completion of the first aircraft assembled in an Indian factory, H.M.I.S. "Baroda" followed in October, while many others are on the stocks. The vessels of this class "Basset" trawlers are being renamed, some after various Indian States, others after the chief towns in India such as Agra, Patna and Lahore. India is also building larger ships of the "Bangor" class used both for mine-sweeping and anti-submarine duties, motor mine-sweepers, 72-foot launches, tugs, life-boats and other craft.

Meanwhile, Great Britain also undertook to supply India with some of the larger craft required. Other naval construction is being carried out in Australia and it is hoped to place further contracts for fresh naval construction elsewhere in the Commonwealth. No order is placed outside India unless it is certain that India cannot meet it out of her own resources. A number of merchant ships have been requisitioned by the R.I.N. because of the enormously increased duties created by the war in connection with mine-sweeping, patrol against possible submarines and raiders, and control of contraband and so forth. Many members of the crews of the ships have volunteered and were accepted for service and they have been supplemented by other trained personnel of the R.I.N. and its reserves, armed and equipped against mines, underwater, surface and air attack and put into commission.

The ports of Cochin, Vizagapatam, Madras, Karachi, Bombay and Calcutta are being fortified and developed into naval bases.

On March 16, 1941 occurred the first combined land and naval operation in which units of the Indian Army and Royal Indian Navy had ever taken part—the re-occupation of Berbera. During the evacuation of British Somaliland in August 1940, ships of the Royal Indian Navy had co-operated with the Royal Navy in this task. Those same ships, H.M.I.S. "Netravati" and "Parvati" again supported the combined operation of the Indian Army and Royal Indian Navy which led to the reoccupation of the colony of Berbera.

During the advance of the land forces from the Sudan into Eritrea, the R.I.N. performed a vitally important part. Indian ships co-operated by maintaining by sea the supply base of an Indian army force which surprised the Italians by pushing in from the coast on to the left flank of the Italian position at Keren. Indian, British, Free French and African troops were transported by R.I.N. vessels to Mersa Taklai, an improvised operational base on the coast of Eritrea. H.M.I.S. "Clive" was prominent during this campaign which helped to open the coast road leading down from Port Sudan to Massawa.

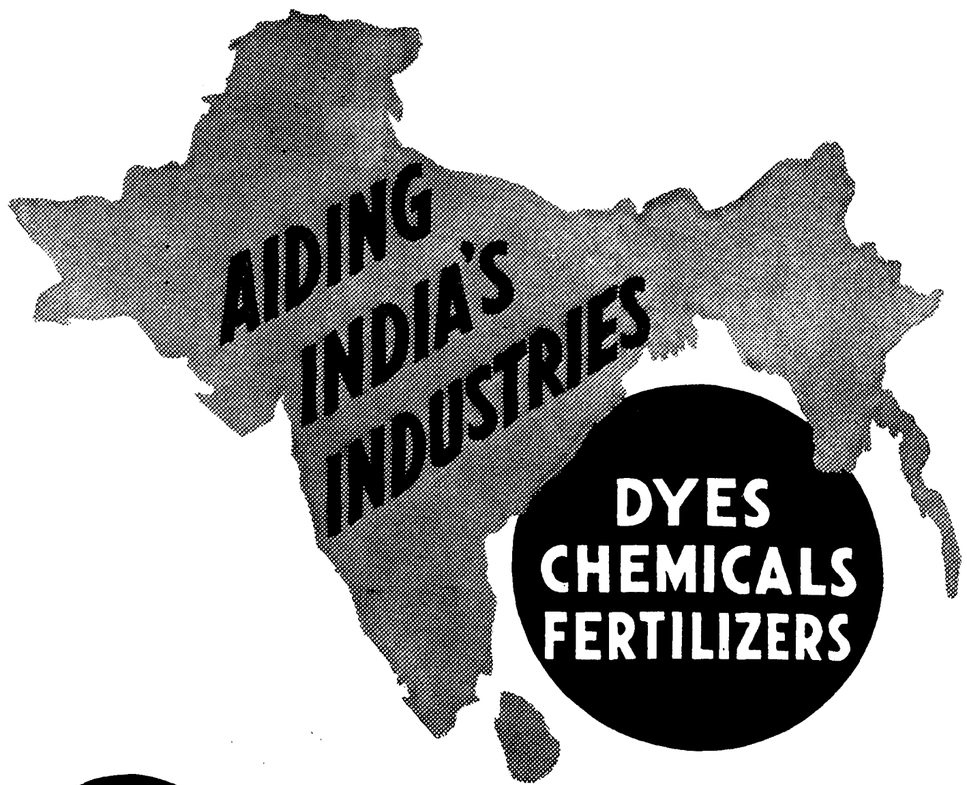
The attack on Massawa began on April 8, 1941 at dawn. H.M.I.S. "Indus" and "Parvati" also served in this action, while operations against Assat were largely undertaken by H.M.I.S. "Ratnagiri". The appearance of the British and Indian warships alone was enough at Massawa to cause the flight and subsequent scuttling of Italian warships in the harbour.

During the brief campaign which followed Nazi intrigues in Iran, the R.I.N. played its part in the transport of troops and in the combined operations leading to the capture of Abadan and Bandar Shahpur. Indian and Commonwealth troops in ships of the Royal Navy, Royal Australian Navy and Royal Indian Navy slipped out of Basra in the darkness on Sunday night, August 24, 1941.

Though the Battles of the Atlantic and of the Mediterranean still rage fiercely, the reduction of Eritrea and Italian Somaliland and the prompt action taken in Iran have removed for a time the main threat to Indian shipping nearer home waters. It is a tribute to the vigilance of the Royal Indian Navy and to the courage and experience of the Merchant Marine that losses of merchant shipping have been so negligible.

During the whole arduous period and including the combined operations in the Red Sea and Persian Gulf, India's total naval casualties are the loss of the H.M.I.S. "Pathan" in June 1940, by mine or torpedo in bad weather and of H.M.I.S. "Parvati" by mine in April 1941; in both cases the bulk of the crew was saved.

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INDIA'S AIR FORCE

The Indian Air Force, which is an entirely Indian Service, began in 1933 with one flight only, designed for army co-operation. In 1936 a second flight was added, while the first was transferred to Peshawar to gain experience in frontier work. From that time onwards a flight was sent each year to take its turn of duty on the Frontier. By the end of 1939 the Indian Air Force had increased from its original flight to a full squadron of aircraft with a strength of over 200 officers and men, not including the growing volunteer reserve.

The expansion of the Indian Air Force to a total of twelve flights was planned in line with the general scheme of expansion of the armed forces announced in May 1940. It was designed to produce three squadrons of three flights each by the end of 1941 and the equivalent of four squadrons of three flights each by the end of March 1942.

The limited supplies of aircraft, both for training and for actual service and the shortage of skilled ground staff and senior non-commissioned officers available as instructors necessarily determined the pace at which this expansion can be realised. During 1940 the supplies of aircraft which could be spared for India, either from Commonwealth resources or from the United States of America were very meagre; the Battle of France and after that, the Battle of Britain had first claim upon available production. By the early months of 1941 the prospect was considerably brighter as regards training aircraft, and it was possible to inaugurate a revised and much expanded training programme. By September 1941, the situation had improved still further and there were good prospects of obtaining service aircraft and equipment in adequate quantities. It has accordingly been decided to absorb at once into units all pilots, observers and other personnel as they become trained until all units are upto strength. The future expansion of the Indian Air Force will, therefore, be considerably more rapid than hitherto and the next immediate goal has been set at ten squadrons.

The beginnings of an aircraft industry have now been established for the first time in India. In 1941 the new factory in South India turned out its first aircraft. The factory is a private concern but Government owns a proportion of the shares and is represented on the Board. The factory is still only an assembly plant working from imported parts, and is likely to remain so for some time. It is, however, gradually training skilled labour for certain operations and may soon be in a position to undertake manufacture of certain types of components, in some cases from Indian materials. The two types of aircraft now being assembled are both American, the "Harlow" a training machine, and the "Curtiss Hawk", a fighter of good performance and modern design. It is also proposed to assemble "Vultee" bombers in India. An important feature of this scheme is that it will give India a factory equipped to carry out major repairs should the necessity arise.

India is supplied with petrol and lubricants from her own oilfields, and from the Middle East. Of late, attempts are being made to produce high octane-value aviation spirit from Indian sources, while, when tests are completed, it is hoped to produce a considerable output of aero-lubricating oil conforming to exacting Air Force standards.

In 1940 twenty-four Indian pilots, who had completed their training for the Indian Air Force, were seconded to the Royal Air Force for service with the British and Commonwealth pilots engaged in the defence of Great Britain. Two-thirds of this party of young pilots have since been in action in the Battle of Britain.

Units of the Indian Air Force Volunteer Reserve were formed shortly before the outbreak of the war to assist in the defence of India's major ports, in addition to the expansion of the Indian Air Force. They contain both a regular and a volunteer element, being, except in one case, recruited on a territorial basis. In these flights about three-quarters of the officers and ground staff are Indians, the remainder British. These units, which have done excellent work, are also included in the general scheme of expansion now under way.

Another important step was the establishment of an Indian Observer Corps to record the movement of hostile aircraft and relay the information to Fighter Headquarters. Up to May 1940 the observer organisation was based on the existing railway and military telephone systems, observation being carried out by personnel of these systems in addition to their ordinary duties. This was found unsuitable to meet the tactics which the speed and height at which modern aircraft can operate have made possible. A regular organisation was, therefore, created, the members of which, apart from British Area Commandants, are all Indian and wherever possible locally enlisted. They are a combatant corps of the Indian Army, and include a permanent element which can be called up when required. Observer posts and controlling observer centres are now distributed in vital areas, and the corps played an important part in the recent North-West India Air Defence Exercise.

Up to the outbreak of war officers of the Indian Air Force as of the Royal Indian Navy, were trained in England. With the outbreak of war, recruitment on a regular basis, both for flying and ground staff, was abolished and replaced by recruitment to the Indian Air Force Volunteer Reserve on a war basis. Immediate steps had also to be taken to establish training schools in India for all branches of the service. To begin with, training was carried out at the Air Force Training School, Risalpur, for Europeans and Indians. Later, schools for the Indian Air Force were established at Lahore and Ambala, and during the year 1941 at Begumpet (Hyderabad, Deccan) and Jodhpur. The establishment of further schools is contemplated and there was also inaugurated in 1940 an important civil aviation training scheme, designed initially to turn out 300 pilots and 2,000 ground staff per year for two years.

It would be a grave mistake to consider that an Air Force consists entirely, or even mainly, of pilots and observers. Both expansion and operation are entirely dependent on adequate supplies of highly trained ground staff. For each pilot in the air a considerable number of men are needed on the ground to maintain his aircraft and armament in perfect condition. These ground staff are trained at the Technical Training School, Ambala, also established since the outbreak of war, which turns out all the many tradesmen and technicians required—fitters, riggers, electricians, wireless operator mechanics and so forth. These men first undergo preparatory civil training under the technical training scheme of the Director of Civil Aviation; then follow at Ambala courses of varying lengths according to the trade concerned, after which they are posted to operational squadrons; those who do well may be given a conversion course which qualifies them for a higher grade trade. Apart from their service to their country, they are qualifying themselves for careers in civil life on the conclusion of the war.

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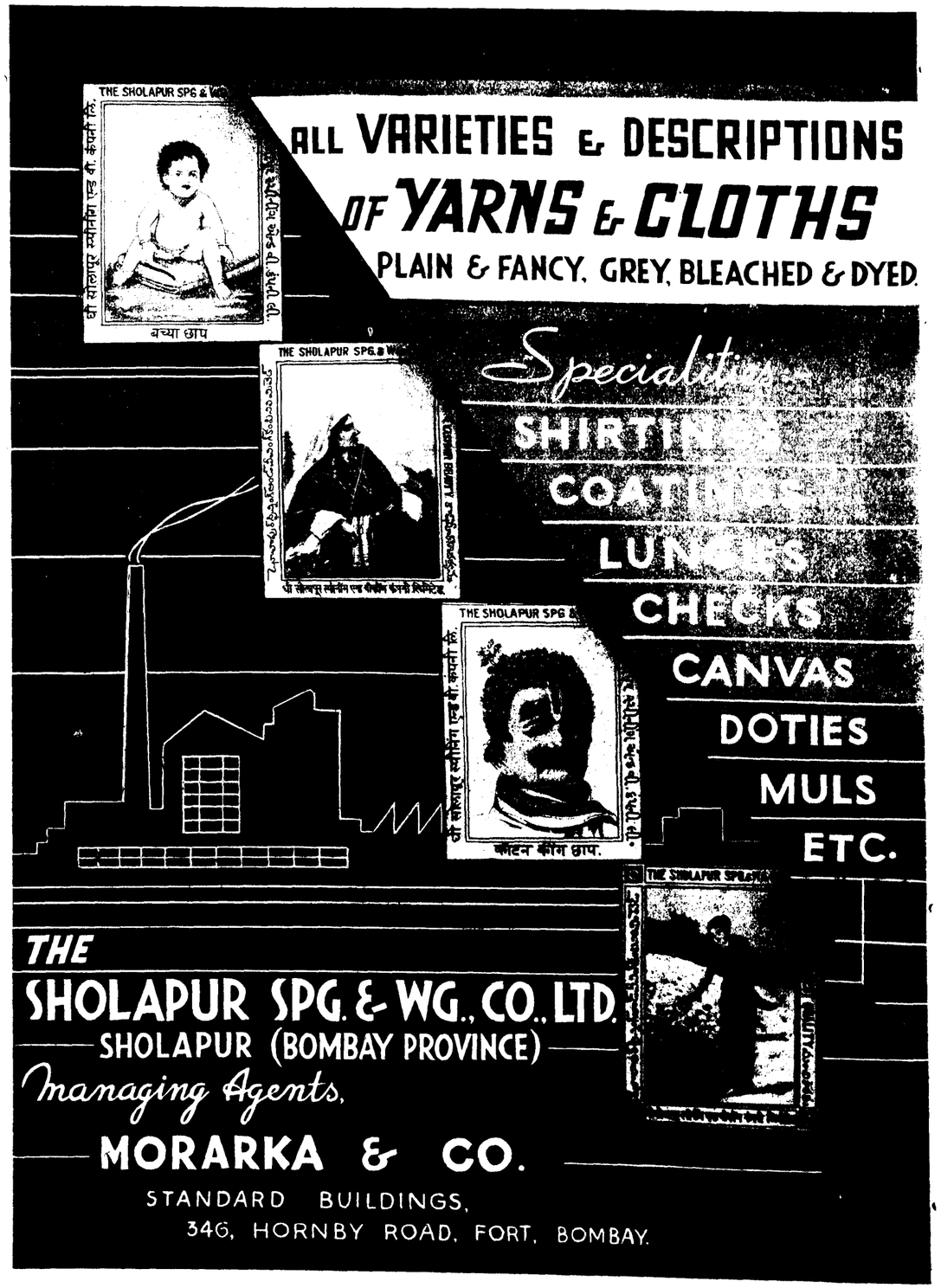
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EXPANSION OF ARMY AND ARMY EQUIPMENTS

The Chatfield Committee, reporting on India's defence policy in February 1939, made far-reaching recommendations. Of these, the most significant was the modification of the principle by which India had previously assumed responsibility only for the protection of her own frontiers, while Great Britain undertook full responsibility for her protection against attacks by any great Power. The development of modern arms and air force made it clear that India should co-operate in the defence of those strategic positions outside India which might be described as her external bastions and take upon herself a greater share of the general responsibility.

In accordance with the Committee's recommendations, external defence forces were, therefore, created. But the outbreak of war within seven months necessitated radical modifications of the Committee's plans, though they were adhered to the extent the changed circumstances permitted.

But the External Defence organisation had by then reached completion. In fact, even when the clouds of war were just gathering in the international horizon, it was possible to despatch the external defence troops to strategic positions in the Middle East and in Malaya. These troops were the nucleus of what were afterwards to become powerful armies which took part in the demolition of Mussolini's Empire in East Africa, the restoration of order and peace in Iraq and the forestalling of German action in Syria and Iran.

The expansion of the Army proper began with the outbreak of war. Man-power did not present any great problem; but the pace of expansion had to be conditioned by the equipment available and the rate at which output could be expanded. Thus, in the first eight months of war, it was found possible to enrol 53,000 additional men.

It was not till May 1940, that the authorities decided on launching a more ambitious programme. Orders were then issued for the enrolment of an initial 100,000 more men, to be armed and equipped as a modern field army. The rate at which this new force could be raised was again conditioned, firstly by the available instructors and trained personnel which could be taken from the old formations to act as its backbone, secondly by equipment; it was estimated for example that no less than 20,000 additional motor vehicles of 56 different types would be required. The Indian Territorial Force, which had been increased in strength from 16½ battalions at the outbreak of the war to 24½ battalions, while the battalion's strength had been increased by 25 per cent., took over many internal security and coastal defence duties hitherto performed by regular troops while units of the Indian States forces were also employed in suitable roles. A force of several thousand men was further provided by the independent kingdom of Nepal and employed for both active and reserve duties.

Between May 1940, and August 1940, another 37,000 more men had been enrolled, while by November of the same year, the projected initial enlistment of the first 100,000 had been completed. This may be taken as the sign and symbol of the increasing tempo of recruitment and equipment which commenced in May, 1940. At this stage, the rate of recruitment had reached 20,000 per month.

This satisfactory rate of progress both in regard to the recruitment of man-power and the finding of equipment encouraged the army authorities to embark upon a new programme of expansion for the year 1941. It was designed to bring the total of the army in India including the forces serving overseas to the half-million mark. As has been already stated, while the finding of man-power presented no great problem, the problem of equipping such a vast army with uptodate weapons, mechanised transport and other equipment was one which involved severe strain on the Ordnance and Supply services.

On the outbreak of the war the Indian army was in large measure an army of the old type. Though unquestionably well equipped for frontier warfare not to speak of the petty duties of peace-time, it was in no position to deal with a modern European striking force. The Chatfield Committee, reporting in February 1939, had recommended a thorough-going scheme of modernisation. It was planned to transform the cavalry into armoured striking forces. The infantry were to be motorised according to two scales, a higher scale for the external defence troops which the Committee advised should be created to help defend India's external bastions, and a lower scale for the general reserve. Even the lower scale involved supplies to infantry battalions with a large number of motor vehicles, motor-cycles and bi-cycles. According to the Chatfield Committee recommendations, this programme was planned to be completed in a period of five years, and the British Government agreed to bear the greater part of the cost and to give an interest—free loan for the rest.

But the outbreak of the war necessitated mechanisation within an incredibly short time. The task was rendered far more difficult by the difficulty in obtaining the necessary materials, machines and vehicles. The requirements of the fighting fronts placed severe limitations on the supplies that could be spared for India from the Commonwealth resources, while limitations of output and available foreign exchange and the neutrality legislation of the United States rendered difficult the task of importing her requirements from neutral countries. India's own war industries—apart from the Government Ordnance factories, which also required modernisation in plant and equipment—were in their infancy, for the development of such industries depends in large part on Government orders or subsidies, and these had hitherto been limited by financial considerations, though the Chatfield programme, had there been time for it to mature, would have radically altered the situation.

By reason of the difficulties which had to be overcome and the urgent nature of the requirements, India's effort in the supply field is all the more striking and all the more commendable.

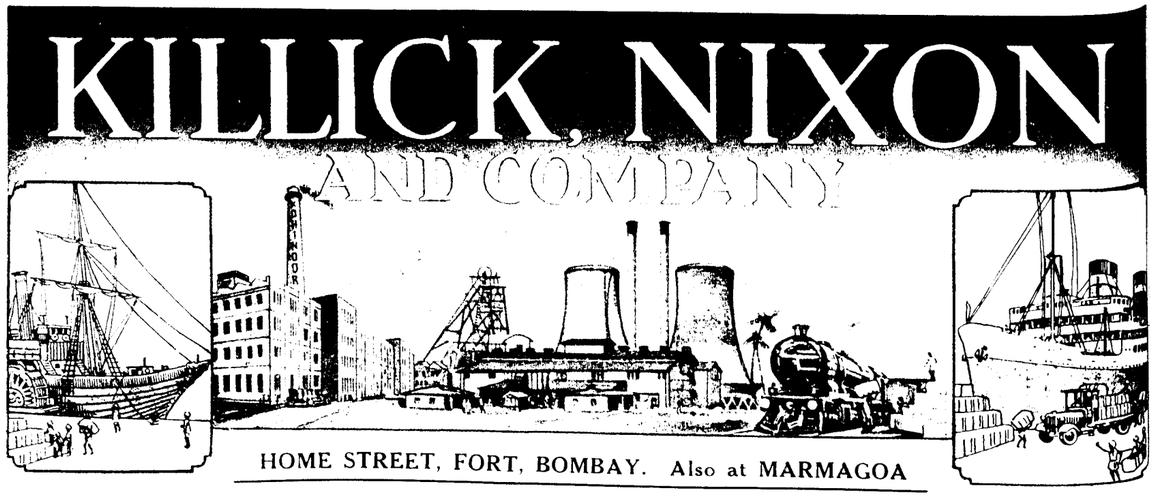
The Ministry of Supply Mission under Sir Alexander Roger came out from England in the autumn of 1941 to explore the situation and later recommended to the Eastern Group Conference which met in Delhi at the end of the year, further projects. These projects were expected to cost Rs. 12 crores. The passage of the Lease-Lend Act by the United States Congress has already been of great benefit to India and a special section of the Supply Department has been set up to take charge of cases under the Act. Besides munitions, India is obtaining from the United States valuable machine tools and other products.

The Indian steel industry before the war produced little more than mild steel, structural plates, sheets, rails, tinplate and bar. Considerable efforts have since been made and are being made to develop manufacture of high grade steels and non-ferrous alloys, to provide steel suitable for the latest types of field guns and barrels, ammunitions and bombs. The total output of the steel industry is estimated to have increased by one-third. The production of guns and shells in India has already made considerable progress. Among other developments, a 2,000 tons gun forging press has been imported, and India now produces field guns, two types of howitzer, gun carriages and trailers, light machine guns, shells and propellents. Small arms output has also exceeded many times the pre-war figures. Rifle and light machine-gun production are each about five times the pre-war output. Production of small arms ammunition, measured in millions of rounds per month even before the war, has since been trebled.

The Indian army possessed approximately 5,000 motor vehicles before the war. There are now in service more than ten times that number. The scale of present output may be measured by the fact that a special train from only one of the main assembly plants leaves every two days loaded with completed chassis; that one workshop alone is turning out 500 bodies a month; that body production increased 250 per cent in six months; and that many thousands of vehicles, of over 50 different types, were delivered during the year 1941.

The requirements of skilled personnel for the new and expanded factories have been immense. The original scheme drawn up by the Department of Labour provided for the intensive training of 3,000 semi-skilled tradesmen. It was soon found that this would not be enough and subsequent expansion has led to a planned output of 15,000 technicians by March 1942. There has been co-operation between Great Britain and India in the working of the technical training schemes. A 100 instructors have been imported from the United Kingdom to assist in the training, while two batches of young Indians, nicknamed "Bevin Boys" have gone to England to be trained in British factories.

Thus it will be seen that, by the end of 1941, the new programme of expansion, with its limit of half a million had been successfully carried out and the production of equipment, motor vehicles, clothing outfit, ammunition and training personnel had been set in motion. As the year 1942 approaches its close, it is now estimated that the total strength of the Indian army is reaching the one million mark.



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RAILWAYS AND WAR EFFORT

The position and equipment of the Railways in India and the needs of modern warfare have combined to give the Indian Railways a large place in India's war effort. The transport of troops, should India become a theatre of war or should the war fronts get too near to her frontiers, and the transport of war material are an obvious duty of the Railway system. It is only during the last one year that the Railways have had to transport troops on a large scale. But before that, the Indian Railways had to contribute to the solution of the transport problem in the Middle East and in North Africa. Even apart from transport as such, there is a great deal of engineering and other technical work which the Railways are in the most advantageous position to undertake. The Railway workshops are in many ways among the best equipped workshops in India. They have also command of a large and well-qualified technical staff which the Government could easily divert to war work. Special work of every kind, whether it be in the nature of munitions production or in the nature of making of machine tools could be entrusted to the Railways and the necessary administrative changes and changes in mechanical equipment could be effected without difficulty, the Railways being the property of the State. The part played by the Railways in the war effort has increased in importance and magnitude.

As pointed out earlier, the demand for rolling stock from the adjacent theatres of war were the first to make itself felt.

The extent of the assistance given is amazing. Locomotives, carriages and wagons of all types and classes were supplied for despatch in large numbers. Conversion to a suitable gauge was effected, and boilers of the locomotives were adapted to make the use of oil fuel possible. To economise in shipping space, large numbers of wagons were dismantled and packed for shipment for re-erection at destination. The work of conversion and dismantling goes on increasingly to provide a steady stream of stock for shipment.

Towards the end of 1940, the Railway Board was asked to supply large quantities of railway track for military operations overseas. As stocks of spare rails on the railways were limited, it became necessary to plan for closing down branch lines to release the necessary quantities of track. The military demand was for type and weight of rail which fortunately India could supply and, after obtaining the approval of the Provincial Governments, certain lines were closed, and the rails, and in some cases bridge girders, signalling and interlocking material, tools, etc., sent overseas.

In addition to meeting overseas demands Railways have been called upon to construct vast new military depots in India, each requiring many miles of track. Altogether Indian railways in the course of a year will have supplied some hundreds of miles of rail track, involving about 180,000 tons of steel. The work of dismantling branch lines has in some cases been carried out in record time as also the construction of the military depots in India.

It is not only in transport that the Railways have been helpful to the Defence Department. By providing buildings and temporary and improved structures, the Railways have saved a great deal of time and money for the Defence authorities. On one railway, certain large buildings, such as workshops, became surplus to requirements owing to changed conditions and to more efficient methods of working. It was fortunate that they had not all been dismantled as the Defence Department has found essential uses for them all. Thus the tax-payers' money has been saved to a considerable extent. In one large station, old buildings have been reconditioned and adapted, and new structures built at a cost of about Rs. 3,00,000 for the accommodation of a large Army Clothing Factory, which is now turning out millions of garments so essential for the Army in the field.

In another instance, old disused carriages and wagon shops have, after some modifications, been handed over complete to the Defence Department for use as a reserve base at a fraction of the cost that would have been entailed in the construction of new buildings.

A large tonnage of steel construction and erection work has been undertaken by the Bridge Workshops of certain railways to augment the supplies from the Engineering Industry. Steel hutting garages have been constructed and erected. Mass production methods proved so successful that a rate of one hut a day was reached.

Further, large military requirements included the fabrication of 100 open sheds. In addition, steel-framed workshops have been constructed and erected, while many large steel sheds fabricated by engineering firms have also been erected. All this work has involved the fabrication and handling of many thousands of tons of steel over large areas.

The quick and adequate supply of steel sections for such work has frequently presented difficulty and strenuous efforts have been made to utilise fabricated steel work not in use at present. A notable example was the dismantling of the high mooring mast for airships, erected many years ago near Karachi, which has now provided 230 tons of valuable steel work for essential purposes.

The steel bars that are used for reinforcing concrete structures do not appear to be a work of great magnitude, yet the Bridge Workshops of one railway alone are bending to correct shape 15,000 tons of these bars for the Defence Department. Another important respect in which the Railways have been helpful is in augmenting the supplies of more or less scarce material.

In order to restrict the use of raw material to an absolute minimum, the reclamation organisations which have been functioning for some years past on various railways throughout India have, since the outbreak of war, been extended considerably to enable reclaimed material to be yet more extensively utilised.

Sales of scrap material by auction have almost entirely been suspended. Conservation is being achieved by the strictest economy in use, timely and economical repair wherever possible, utilising obsolete and scrap material by modification or conversion intensifying the issue of substitutes and reducing demands to an absolute minimum commensurate with safe and efficient working. Useful tools, fittings, locomotive, carriage and wagon duplicates and many other items are being reclaimed on a more extensive scale.

So far, only the routine methods of helping the war effort have been recounted. But as may be guessed, the most significant contribution of the Railways lies in the release of the workshops for the war effort and their re-organisation for the production of war materials. As the pressure for mechanical engineering facilities developed, the Railways were called upon to release complete workshops. Early in 1940 the release of one major workshop was commenced, a second was handed over in January, 1941 while a third was released in October. The capacity of all these shops is now at the disposal of the Supply Department and valuable munitions of every class come in a steady flow from them. Not content with releasing valuable production units, Railways have strengthened their staff to ensure uninterrupted use of their spare capacity. Over 13,000 men in Railway Shops are busy on munitions work of one type or another.

When gauges for the production of all classes of munitions were the urgent necessity the mechanical departments of Railways moved swiftly. Thousands of shell gauges, inspection gauges, and hand-grenade gauges started pouring out of these workshops. In many instances, new tool shops were erected at the instance of the Supply Department to give increased capacity for the manufacture and repair of tools, gauges, fixtures, etc., required in the manufacture of munitions, in addition to normal railway requirements.

From the railway workshops came a stream of high explosive shells, hand-grenades, fuse components, bits and stirrups, tent poles, cartridge boxes, packing cases for gun cotton, axles and axle trees for gun carriages, field ovens, pick-axes, nuts, bolts, etc., for transport carts, instructional tank turrets, bayonets, rifle aiming rests, mathematical instruments, furniture, and the components of a host of other items. These have been followed by large numbers of motor bodies and armoured tractors furned out from Railway Shops and which are now in use. Items which had never before been attempted in any

workshop other than ordnance factories specially equipped for this kind of work are now being satisfactorily produced.

A variety of rolling stock had to be converted for defence purposes. Dining cars, and passenger coaches have now taken shape as ward cars, kitchen cars, and ambulance trains. Carriages hitherto in use on Indian Railways are now being used as kitchen cars by Indian troops overseas. A large number of stationary boilers, some of which were converted to oil-fired, have been supplied for transfer overseas.

Another aspect of the war effort deserves special mention. Early in 1940, the Railway Board agreed to trainees being sent to the workshops of various railways under the scheme of the Government of India in the Labour Department for the recruitment, training and distribution of additional skilled labour in connection with the war effort. The trainees come under the following categories: Fitters, draftsmen, machinists, millwrights, toolmakers, turners, welders, die sinkers, etc.

On completion of the training and after passing the prescribed trade test, trainees are drafted into the railway military units or sent to a civil and military training centre, or to the workshops of notified factories engaged in munitions production and other war work. Besides this training scheme, railwaymen are being trained in England under the Bevin Training Scheme, while some railways have domestic training schemes for semi-skilled and raw recruits.

It would be difficult to portray all the various aspects of the Railways war effort. Needless to say, the Railways have civic guards and their war savings schemes and the like. All these go without saying. But it is necessary to refer to the provision of a Defence Service Exhibition Train which toured India. This train consisted of 23 vehicles and provided accommodation for exhibits from all branches of the services as well as for the technical staff who were accompanying the train throughout the tour.

Of the exhibition coaches, two are allotted to the Master-General of the Ordnance, one for the model of Keren; and the remaining two for the Signals and Medical Services, the Quartermaster-General's Branch and the Indian Air Force. The seven trucks accommodated a naval gun, an aeroplane fusilage, a howitzer, lorries of various types, an armoured carrier, field gun and a light tank. As the lorries, field gun and light tank had to be off-loaded at various stations for the purpose of demonstration, it was necessary to provide heavy protable ramps which could be easily manipulated.

The exhibition coaches were painted glade green, with attractive internal lighting, and provided with stands for displaying exhibits. The exterior of the train was camouflage painted on conventional lines. By way of contrast, the sides of certain coaches displayed three large hand-painted war scenes. To illuminate the exterior of the train at night, suitable flood lights were provided.

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All this work and more has been carried out by the various administrations over and above the daily work involved in their responsibilities for the running and maintenance of the vast Railway system that spreads all over India.

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POST-WAR INTERNATIONAL FINANCE

The public has been treated much in advance to what purports to be "the most reliable outline of post-war currency proposals which have yet appeared anywhere." The qualifying clause at the end may not detract from the importance of the report. Since the proposals for post-war reconstruction have a special importance for India, where the public mind is highly apprehensive—and not without reason—that schemes for world economic order are apt to prove covert attempts at victimisation of the weaker peoples, it is necessary to examine the proposals which the City Editor of the "News Chronicle" and "Reuter's" City Correspondent believe to be more or less authentic. The immediate purpose of any post-war international exchange system is to minimise exchange disequilibrium and provide a mechanism for clearing of debts between countries. But the return of international finance and world trade to conditions of reasonable equilibrium is hoped for. In fact, economic theory will encourage the belief that, if the immediate purpose is achieved through sound measures which not only deal with the symptoms, but also tackle the root causes, the more distant aim of stable equilibrium in international finance and word trade will also be realised.

The authors of such schemes of international regulation will not be deterred from their efforts by the failures of the last post-war period. For, if the history of the first decade after the last war has a great deal to discourage such efforts, the period following the great depression is rich in practical experience of these problems and the efforts to solve them. This is also the period in which the Bank for International Settlements was actually functioning. Its working, no doubt, leaves much to be desired. But what it did and what it failed to do are equally illuminating. Every important country in the world has accumulated a fund of experience about exchange controls and the relation which these controls bear to the nature and direction of their foreign trade relations as well as the conditions and needs of the internal economy. There is also the experience relating to the working of the Tripartite Agreement among Britain, France and the U.S.A.

Thus the period that will follow this war will have three distinct advantages over the last post-war period: (1) the experience of individual countries regarding exchange controls, exchange equalisation fund and the like; (2) the experience of the working of international agreements about exchange rates and exchange regulation, agreements which were in effective operation and not mere expressions of pious wishes like the Genoa Protocols; and (3) the experience of the working of the Bank for International Settlements which despite its imperfections and failures, is useful for making more accurate blue-prints for a similar organisation which will meet the needs of the future. To these must be added, though it probably follows from the first two, a more precise knowledge of the part which gold has to play in international finance.

There is also the other circumstance that during the last one decade and more the primacy of economic as distinct from financial factors in international trade and international finance has been brought out more clearly than in earlier times, for the readiness to subordinate exchange stability to requirements of foreign trade or internal economy cannot be viewed as other than a sign of the recognition of the fact that, powerful as is finance, the troubles of international finance are but a symptom of the evils from which world economy and international trade are suffering and that the former cannot be cured without reference to the latter. The significance of this fact to the question of the post-war international exchange system is not far to seek. While the system cannot by itself bring about a reconstruction of world economy, by altering the international distribution of productive activity or the direction and content of exports and imports, it must be so devised as not to increase the strains of the national economic systems. On the other hand, its remedies for correcting disequilibria in the sphere of exchanges can, if they are wisely conceived, also serve to correct the



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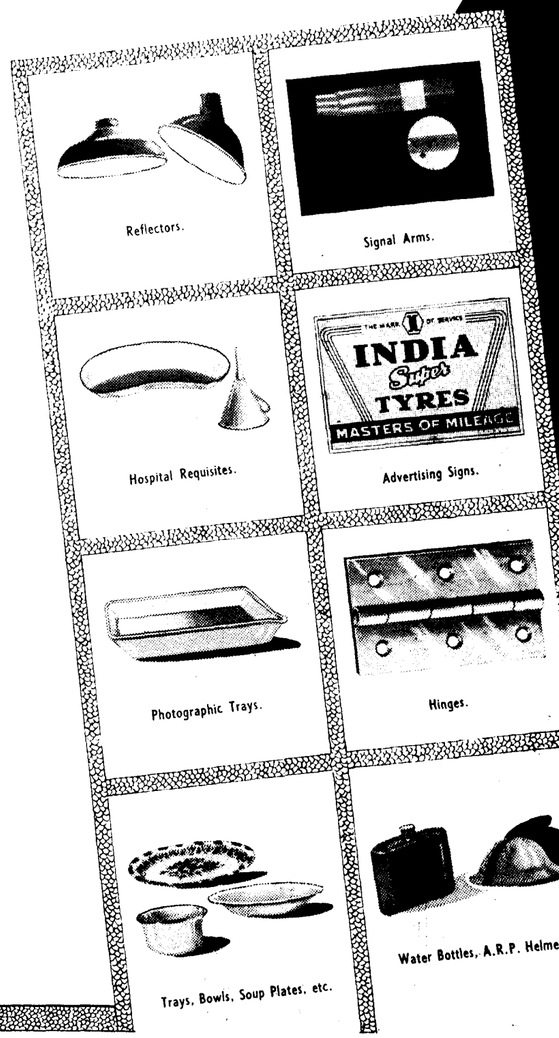
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disequilibrium in the economic sphere, as when a specially arranged foreign loan enables the borrowing country to develop an export trade in a new line. That, however, is not, strictly speaking, within the scope of the post-war international exchange system, while no doubt, the authors of the system have to bear in mind such implications of their immediate task.

It would appear from the reports to hand that Britain and America have been working both independently and in collaboration at a scheme, that the results have been communicated to the Allied Governments; that the British and the Americans plans assign to gold an important place in the post-war mechanism and that the British scheme provides for an international unit of account based on gold and named bancor. We are told that "the bancor will be merely a convenient yardstick for expressing relative exchange values of gold and of currencies participating in international clearing. The new clearing authority would keep its accounts in bancors just as the Bank for International Settlements keeps its account in fictional gold units, namely, the former Swiss franc. All countries would continue to use their own currencies in their respective clearing accounts." Such an international unit of account is the basis of the Keynes plan. But the official United States commentary on the plan propounds some form of international gold stabilisation fund with an international clearing house for clearing balances of international payments and for meeting deficiencies. "The clearing house would allow clearing of overdrafts expressed in bancors in order to allow debtor countries to meet their liabilities without engendering deflationary forces which a gold standard would necessitate. All currencies will be related to bancor though parties will not be permanent or fixed." With further development of the technique of the exchange equalisation fund through the addition of an international credit mechanism and with the recognition of the fact that attempts should be made to remedy causes and not merely neutralise symptoms of exchange disequilibrium, it is hoped that a stable order in international finance will be reached with all that it means for world economy and international trade.

How far can this hope be regarded as reasonable? As we have already hinted, regulation of international finance can only help, and cannot by itself bring about, the stability and progress of world economy. Since financial crises usually accentuate economic crises and are only in part the cause of them, the contribution which financial regulation can make to economic stability is limited to measures which, on the one hand, slow down the impact of adverse economic trends on the financial mechanism and on the other prevent the strains of the financial regulation stand out boldly from the experience of the last depression. The stoppage of American credits to Europe precipitated the crisis; the strain on the exchange caused deflationary measures to be adopted; and the severity of the depression increased by geometric progression. This part of the phenomenon of the Great Depression, which we have simplified for the purpose on hand, can to a certain extent be avoided, if machinery is provided which can watch the trends in international finance from day to day, apply correctives to undesirable trends and prevent the accumulation of adverse factors and forces.

The proposals that have now been put forward by Britain are designed in such a spirit. The authors of these proposals apparently believe that the sources of instability in international finance are (1) the position of gold the rights of creditor nations to demand gold and the liability of debtors to tender gold, and the consequent tendency towards maldistribution which becomes chronic in an age which does not feel bound to observe the principles of free trade, (2) movements of funds on both long-term and short-term account, and (3) disequilibrium of foreign trade.

Of these three sources, only the first two fall directly within the scope of international financial regulation; while in the case of the third, the problem is seen only after the mischief has been done. What is more, preventive measures do not lie in the hands of those in charge of international financial regulation. In the scheme that has now been published, the authors tackle the problems in the order of their tractability. Taking gold first, they believe that some advantage is to be derived from the adoption of a fictitious unit for the accounting purposes of the international bank. But the more important point is that the system they propose is not to be a sort of gold exchange standard in which the participating countries will be entitled to gold in return for the bancors to their credit. In the various accounts so far received of these proposals, it is not clear how the system by itself can be capable of alleviating the severities of the gold problem. Reuter's City Correspondent in one of his commentaries points out that "the proposals look increasingly like a new charter for gold." But gold hardly stands in need of a charter. On the other hand, gold is rather the tyrant from whom world trade has to wring a charter of liberties for itself.

It would appear that the proposals are designed with a view to benefit countries which have little gold or which are unlikely to increase their stocks owing to the state of their balance of payments. For, while "debtor countries would, to an unlimited extent, be able to use any gold they have, and gold-producing countries would unlimitedly be able to exchange their output for goods and services," "creditor countries will not be entitled unlimitedly to insist on gold payments." And this, it is said, "must mean only that they will no longer be allowed to stultify gold by chronically accumulating uncleared balances and in effect insisting on debtors paying in gold which debtors do not possess and cannot obtain." It is added that "this limitation does not derogate from gold's status, it buttresses it." This is difficult to understand, unless it is implied that any addition to the strain on the gold stocks of countries like Britain will force them to dispense with gold in their transactions with foreign countries either through barter or otherwise and that ultimately gold will be dethroned from its position as the virtually sole monetary metal.

It will be seen from this that the only provision that seeks to tackle the gold problem in the aspect which was in the forefront in the years before the war is the one which lays down that no country will have a right to demand gold in return for the bancors lying in the international bank to its credit. It is a question how far creditor countries will be prepared to acquiesce in such a ruling and co-operate with the Bank in this New Order in international finance. Something can, indeed, be done to check undesirable movements of gold if the payment of gold by the Bank is not to be automatic and the Bank authorities ade to take up negotiations with the countries concerned with a view to obviate the need for shipments of gold. But it is certainly automatic and the Bank authorities are in the same breath that gold will remain international legal tender, and that creditor countries will not be entitled to demand gold in payment. It is a strange conception of legal tender that leaves the debtor free to meet his liabilities in other modes of payment than the legal tender so-called.

The whole scheme, then, can at its best tackle only the second of the three sources of instability. It can tackle short-term movements of funds more or less effectively. It can do some service in the matter of the volume and direction of long-term capital movement. It can slow down, up to a point, the movement of gold. But in so far as all these are the results of national production and international exchange of goods and services, they are not susceptible to treatment as financial ills. Maldistribution of productive activity, which is, indeed, a world phenomenon is, in the eyes of Europe and particularly of Britain, limited to the favourable balance of the U.S.A.; and this favourable balance is in turn attributed more or less wholly to the U.S. tariff. That the proposals of Britain are designed with a view to check the flow of gold to U.S. is too obvious to need mention. But it is interesting to note that it is touched on only as a subsidiary aspect or as an incidental afterthought. Reuter's City Correspondent observes:

If the U.S.A. maintains a tariff policy which prevents the remainder of the world acquiring vitally needed dollars, all gold will continue to gravitate to the U.S.A., but any way we shall not be worse off and have good prospects of something more sensible and more prosperous. The U.S. tariff policy remains crucial to the restoration of any international system—no monetary arrangement can alter that fundamental fact—but the proposed system has valuable prospects of bringing the facts home to Washington and enabling Washington to put them palatably to the electorate.

The U.S. electorate will, no doubt, regard taste for free trade as acquired taste and probably decline to acquire it.

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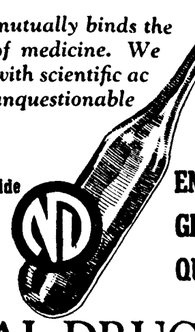
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TRADE AFTER THE WAR

While general acceptance of Article 4 of the Atlantic Charter removes doubt as to the eeconomic consequences of the war, and the peace to come, there is still no agreement as to the measures required for restoring the quantum and course of world trade. Disturbance may be viewed as temporary if justifiable, but it seems as if the tug-of-war between autarky and original freedom only serves to expose the difficulty in the way of applying the Charter so as to procure a restoration, outside Russia, of pre-war equilibrium, all the more essential as all trade is now subject to control. Licensing, priorities, etc., determine both the value and volume of imports while demands of war production elsewhere affect the supply available to neutrals. The accumulation of overseas assets is, in part, due to many restraints imposed on the export of capital. The habit of overseas investment is changed by the war just as the debt position is radicaly altered by dis-investment and large buying for war purposes. World trade has steadily shrunk so that the shaping of poilcy after the war will remain difficult. To restore prewar standards and to go back to old relationships, will appear more difficult than usual; but that it must be undertaken sooner or later is urged to-day not only by the partisans of peace by economics, but by all those who hope to find in the opportunities of the future a compensation for present hardships.

India must be reckoned among those, for obvoius reasons. Between the two wars, trade underwent many changes. Tariffs were raised and exchange restrictions were multiplied along with the application of quotas. But thee essential features remained the same, as the investigation made last year into the network of world trade indicates that inequalities in resources and organisation will condition a return to multilateral trade emphasising interdependence anew. If the conclusions run counter to the prevailing prejudice in favour of closed economies, it is well to remember that concentration of trade in rice, jute or rubber will eventually force a return to prewar relationships. If Japan were cut out of world trade by dictation, there will be a shortage of silk and other textiles; and the punitive exile of Germany after economic disarmament, will lead inevitably to a chronic shortage of electrical goods and steel. Indeed the shortage of imports and the loss of markets should make India keener on a derided liberalism and a hope of a speedy return to prewar conditions. It will be conceded that industrialisation is dependent more than ever on imports of capital goods, and if Europe ceases to export industrial goods not only Africa, but Asia will suffer the latter from arrested development. It is perhaps necessary to link the promise of equal access to raw materials—to a demand for equal access to capital goods. The demands of reconstruction in Europe must not be allowed to prejudice the development of industry in the East, and any accentuation of inequality, apart from that imposed by Nature, must be remote from the ideas of Allied statesmen, who are anxious for co-operation in the development of China.

If a return to restrictionism is ruled out, the appropriate fiscal policy appears less important than presumed. The complete rehabilitation of production can only come from the restoration of trade along the old lines. It must not be made contingent on any scheme of federal union. Europe's interest in the subject will be appreciated as she obtained in 1938 only 52 per cent of her imports from within the Continent and took four-fifths of Africa's exports. The present dependence of Latin America on the U.S.A. may be treated as a further reason for the restoration of world trade so as to give Latin America, its markets in Europe and give the tropics their former supplies of European manufactures. Arguments as to balances of trade will appear out of place in describing the need for multilateral trade. Critics of Imperial preference will certainly recall that India's markets in Europe were lost as the U.K.'s share in imprts and exports tended to grow larger. It may be that the war has reduced foreign trade with the neutrals and made India turn to the Middle East in place of the Far East, but the pattern of world trade cannot be altered either by will or by victory. That India and China together in 1938 had only 5 per cent of the world's trade is an argument for going back to a policy that will give us the share of Europe's trade held before the last war. If Britain intends to hold the Colonies for the sake of raw materials and consuming markets, going back to the plantation theory antedating Free Trade, India, too, may enter a claim for such privileges as may fall to a creditor of Britain.

Before the present war broke out the imports of raw materials into India were gradually increasing while imports of food were falling. To recapture that favourable trend supported since by increased manufacturing activity, something more than an increase of food production at home seems necessary, though food exports for the benefit of impoverished Europe from the Dominions and America will have to be larger. If Latin America's mineral production is to be maintained after the war in fair volume Europe's own supplies of manufactured goods to them must be kept up. It has been recognised by special treatment on the part of the U.S.A. The case for restoration of trade exempt from present restrictions, cannot be stated in any other way. Imports of manufactures into India were declining before the war, while her exports of raw materials were going down. That tendency was illustrative of a new, finer balance in the economic structure, arising largely from the depression which forced India to ship gold in place of goods. The fact that the Dominions' exports of raw materials and manufactures increased, even before the war while foodstuffs diminished, can be cited to prove that they have an interest like India in reverting to prewar policies and standards. That France will expect a large proportion of North African supplies after the war while the Netherlands naturally will seek to obtain the former proposition of imports from the N.E.I. may be regarded rather as the consequences of restoration than the direct claims put forth. The depression led to a reduction in French exports of manufactured goods and a reduction in food imports; but the Empire was largely supplied with manufactures by France which accepted policy of Colonial preference. A revival in European trade cannot be expected if the French and Dutch Empires are denied the former conditions of access to the mother countries. The fact that the U.S.A. may be anxious to recover the usual markets for oil, cotton, tobacco, etc., in Europe must be related to India's own desire for European outlets for cotton, jute and oilseeds. Geographical concentration of production and trade as the League of Nations study demonstrates, is inescapable. India has to ship the tea drunk by Britain which took 53 per cent of the world's imports while manganese and nitrate must find a market mainly in the U.S.A. If Latin America shipped more petroleum and Europe shipped more coal than the U.S.A. there were good reasons for it, including the preponderance of the U.S.A. in world trade in cotton, tobacco and copper. Rubber producers to-day will, probably, desire that the U.S.A. should take after the war as much as 38 per cent of the world imports, while Palestine's fruitgrowers would desire that Britain should take, as in the past, 40 per cent of the total imports of citrus fruit. If trade associations dealing in commodities are anxious to escape from control after the war, that desire must spring from an expectation that Europe's agriculture, in spite of large imports of fertilisers, cannot give what the tropics can give her. Canada's industrial development before the war supported an expansion in imports from the U.S.A. and an increase in food exports to Britain. The reduced importance of agriculture will not impair the desire for assured markets in the face of American competition in respect of foodstuffs and manufactured goods.

The influences operative before the war in the trade of the U.S.A. may have been twisted out of shape by belligerancy; but a big revival in overseas investment postulates the recovery of trade, in primary goods and manufactures. A rapid development of secondary industry during the war in Latin America should induce the U.S.A. to look not only to South Africa but to other parts of the British Empire. India took only 1 per cent of U.S. exports in 1938 and she provided only 4 per cent of U.S. imports, but the trade may be in readjusted proportions, particularly, when Japanese competition is less acute in Asiatic markets. The disposal of her agricultural surpluses will always be a problem in U.S. trade and the disinclination to take in conjunction with Europe three-fourths of Latin America's exports, may force her to reduce exports to Latin America while increasing her exports to Europe and Asia alike.

After the repatriation of overseas investments and the reduction in income it is difficult to predict a complete or swift sretching of the network of world trade. But the disparity in natural endowments and labour supply may soon lead to the clearing up of world trade's channels.



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THE INDIAN COTTON TEXTILE INDUSTRY

The third year of the war has perhaps witnessed the greatest activity in the Cotton Textile Industry for all time. Thanks to the substantial increase in the requirements of the defence services and the boom in exports to countries within the Empire, almost all the units in the industry were able to make substantially higher profits. Even in the middle of 1941 there was a suggestion that Indian cotton mill products would be in great demand and that with the substantial decline in Japanese imports, consequent on the freezing of Japanese assets in India, and the restrictions regarding imports, it would not be possible to cater fully to the demands of the Defence services, the export markets and the home market. Even as early as October 1941 it was found necessary to consider the manufacture of standard cloth. The shortage of cloth has been real during the past few months and the production on account of the defence services is now 35 per cent against 20 per cent sometime back. The markets served by Lancashire and other interests have now to be served by Indian exporters. In order to conserve the requirements of the home market it was found necessary to place restrictions on exports as from July 1942. Production is only limited by the availability of labour. Complications in this regard were experienced with the starting of the Civil Disobedience Movement in August 1942. Efforts are being made to get over production difficulties and satisfy the needs of the masses, especially the poorer classes, by the manufacture of standard cloth varieties. So far the question of the production of standard cloth has been only in its discussion stage and the articles have not been placed on the market. It was feared at first that the earnings of the industry would be affected by the production of standard cloth on a large scale. A compromise in this regard has, however, been reached between the mills and the Government and it is expected that the production of standard cloth will be only 5 per cent of the capacity of the industry. Of the balance of 60 per cent of production left over there is a substantial margin of profit. Having regard to the very lean time experienced by the Cotton Textile Industry till very recently, the present boom in the industry can be considered only as a reward of past sacrifices. Efforts are being made to get some concessions under the Excess Profits Tax Act as the earnings for the standard period in the case of most companies is very low and there will not be much left if the provisions of the Act is to be applied in the same manner as in the case of other companies. Having regard to the progress in the manufacture of textiles and the possibility of a revival of competition from Lancashire and other interests in the post-war period, there is need for consolidation even during war-time. The plant in the case of most companies is obsolete and it will have to be replaced by new machinery in the post-war period. These and other things can be accomplished only if the Government adopts a lenient attitude towards the industry in the matter of taxation of earnings. It should not be forgotten that the industry has made great sacrifices and that it has co-operated wholeheartedly with the Government in satisfying the requirements of the different services. Only sometime ago it was not possible to produce almost all the items but with the relaxation in the specification of certain details, and the efforts of the manufacturers, it is now possible to manufacture almost all the items needed by the armed forces, tent manufacture, the manufacture of warm clothing out of cotton and numerous other articles that have been produced to the satisfaction of the defence authorities. The experience gained in this regard should enable the industry to compete more effectively with foreign interests after the war. The importance of the industry to the economy of the country cannot be over-emphasised. It is the oldest and the biggest industry in India employing several lakhs of workers and feeding millions of cultivators. The progress made in regard to the utilisation of short staple cotton in recent years is noteworthy. In the last cotton season the consumption of Indian cotton was over four lakhs bales and it is expected that the increase to over 4.5 lakhs bales will be achieved this season; fortunately, the labour position is not complicated as in the case of East India by the possibility of enemy raids or other modes of attack. Western India is perhaps the most secure part of India at the present moment and mills possibly cannot have any great difficulty in keeping up production at a high level.

India is the birthplace of the cotton textile industry and even at present by virtue of its antiquity and importance it takes the first place among Indian industries. Alike in the capital sunk, in the volume of employment it provides, and in the net addition to the wealth and income of the country, it has hardly a rival among our industries. And what is more, it has a hold on the public imagination and affection that no other industry has. The decline of India's cloth manufactures since the latter half of the 18th century was regarded as the symbol as much as the result of the country's political subjection, and its rival in the second part of the 19th century and its progress since, has been in the public mind equivalent to the progress of a political and economic emancipation.

The excellence of Indian cotton manufactures secured a market for them in Europe, two centuries ago and even the jealousy of English weavers, expressed in riots, did not make the East India Company give up the lucrative trade in calicoes. The growth of the Lancashire industry as the consequence of the industrial revolution in England accompanied by the neglect and ill-will of the governors of India make the old puissant industry of India a mere ghost of its former self, but after 1850 when the East India Company sought to stimulate exports of Indian cotton, many appreciated the advantages that the development of the industry would obtain on Indian soil if the mechanical improvements of the West were adopted. Bombay was designed by nature to be the home of the cotton mill industry and the first Indian mill was established by Mr. C. N. Davar and started work in 1856 though the Bowreah Cotton Mills Company established at Fort Gloster near Calcutta as an English company in 1818 has the distinction of being the first. In the next few years six more mills were started in Bombay Island and the industry had also secured a foothold in Broach and Ahmedabad where the first mill was started in 1859 under the management of Mr. Ranchodlal Chhotalal. The American civil war gave a fillip to the Indian mill industry and by 1880 appreciable progress had been made as may be judged from the figures below:—

(In thousands.)

Year	Mills	Spindles	Looms	Labour
1851 ..	1	29	—	5
1866 ..	13	309	3.4	7.7
1876 ..	47	1,100	9.1	..
1877 ..	51	1,244	10.3	..
1880 ..	56	1,461	13.5	44.4

Statistical records of the progress of the industry since 1880 are more complete and the table below indicates the advance of the industry for the quinquennium period up to 1903-4 and for the two years thereafter:

Year	Mills.
1878-80 to 1883-4 ..	63
1884-85 to 1888-9 ..	93
1889-90 to 1893-94 ..	127
1894-5 to 1898-9 ..	156
1899-00 to 1903-04 ..	195
1904-5 ..	203
1905-6 ..	204

Capital (in lakhs)	Labour	Looms	Spindles
657.6	51.0	14.5	1610.6
887.9	75.7	18.2	2296.8
1161.1	116.1	25.3	3263.8
1419.5	150	36.6	4046.1
1687.9	171.6	42	5000.9
1757.5	196.4	47.3	5195.4
1719.7	212.7	52.3	5293.8

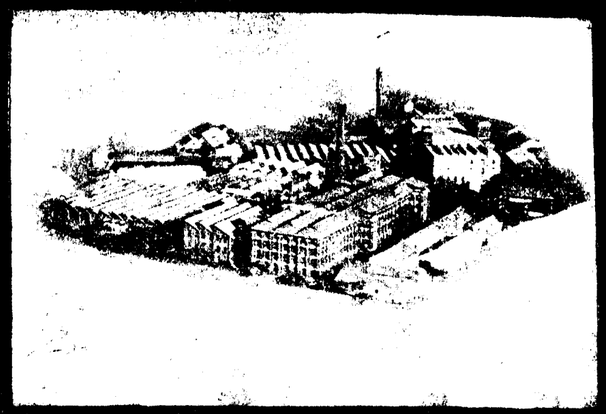
Progress in the succeeding years was well maintained and in 1913 the Indian industry had a complement of 237 mills with a total of over 6.2 million spindles and 90,000 looms. It is estimated that the output of the industry at the time was 688 million lbs. of yarn and 1,164 million yards of cloth as compared with 353 million lbs. of yarn and 422 million yards of cloth at the beginning of the century. Thus the beginning of the last war found the Indian industry a substantial one with crores of capital, mainly Indian, invested therein and affording work to over 244,000 persons. It had shown remarkable expansion since its inception and had undergone in its later stages a change from one based on spinning to one embracing weaving, both of home-produced and imported yarn. Whereas spindles had increased by 39 per cent looms had increased by 142 per cent and the ratio of spindles to looms had fallen from 119 in 1898-9 to 68 per cent in 1912-3.

Even more rapid was the progress of the industry during the Great War when the decline in imports assisted the progress of the industry though advance was hampered by the difficulty of obtaining plant and equipment from abroad. By August 1918, the number of mills increased to 252 with over 6.6 million spindles and 116,000 looms consuming over 2,085,000 bales of cotton. In the early years of the century the industry had an important trade in yarn with the Near East, Russia and the Far East but the trade was lost through the remarkable advance made by Japan in textile manufacture and the enlarged demand for weaving purposes. 1917 is considered the most prosperous of the war years and high prices and large exports accompanied the rise in production.

The end of the last war witnessed no diminution of prosperity and in the post-war boom orders for new and additional plant

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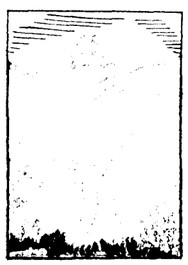
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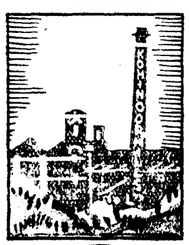


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both for old and some new mills were freely placed when the Rupee value was fixed at 2 sh. But the exchange crisis left the importers unable to take delivery. In the piecegoods market also a very acute situation developed and indigenous goods were shunned as much as imported goods. The Indian mills' spinning production as mentioned previously was being elbowed out of foreign markets and this added to the difficulties experienced in the slump of 1921. The competition of Japan in piecegoods became a serious factor in 1922 and the depressed state of the industry received no help from the movement to popularise khaddar.

Shareholders in the mill industry after the intense boom experienced something like disaster and labour troubles accentuated the difficulties of the industry. These conditions led to the appointment of a Tariff Board to enquire into the industry with particular reference to the causes of the depression, whether permanent or temporary, and to examine the extent to which it was due to foreign competition and also advise on the necessity or desirability of protection. The Tariff Board confirmed the impression conveyed by the terms of reference that the plea or protection was made with far greater importunity by Bombay and Ahmedabad Mills than by mills situated elsewhere. And even as between them, more insistence was laid by the Bombay mills, for it was apparent that the industry there laboured under disadvantages imposed by higher costs, especially, wages, fuel and the distances from raw cotton areas and consuming markets. The examination of other questions revealed the contributory force of the loss of export markets like China, and the extent of competition from Japan was probably as serious as the losses occasioned by the growth of the industry in up-country centres.

The remedy which the Tariff Board suggested was the diversification of manufactures, and to this end, they suggested a bounty for stimulating the spinning of yarn of higher counts. The only action taken in regard to the majority and minority recommendations of the Tariff Board was the abolition of the duty on imported mill stores, for the Government stated, that on the facts as found by the Tariff Board, no case for protection had been made out. But as the result of protest and representations the Government issued a *communique* levying a specific duty of 1½ annas per lb. on imported yarn below the value of Re. 1-14 per lb. when the rate was to be 5 per cent *ad valorem* up to March 31, 1930. These concessions, which followed the abolition of the excise duty (first imposed in 1894) in 1926 after prolonged agitation, had little effect. The fixation of the rupee ratio at 18d. gave foreign manufacturers a definite advantage and the recrudescence of labour troubles in 1928 and 1929 left the textile industry, particularly, of Bombay in an enfeebled condition. Requests for relief resulted in the appointment of Mr. G. S. Hardy to conduct an enquiry into the changes in the imports of cotton textiles and to advise on the possibility of substituting specific for *ad valorem* duties.

Mr. Hardy in his report confirmed the popular view of the intensity of competition from Japan and he pointed out that one of the results was to displace not only Indian but Lancashire goods. He reported against the change from *ad valorem* to specific duties as unsuitable. The issues raised in the report were examined by Government in conjunction with representatives of the Bombay Millowners' Association and the necessity of a certain degree of protection was accepted. As a consequence it was decided to raise the revenue duty on cotton piecegoods from 11 to 15 per cent and under the Textile Industry Protection Act of 1930 they imposed on non-British goods an additional 5 per cent for three years, and a minimum specific duty of 3½ annas per lb. on plain grey goods, British and foreign. But the action appeared to be governed, mainly, by revenue considerations, and the necessity for protection was left to be adjudicated by a Tariff Board enquiry.

The Textile Industry Bill had a rather stormy passage in the Assembly and an amendment made grey goods from Lancashire subject to the specific duty. The industry received some assistance from the intensification of the *Swadeshi* movement in 1930 and the surcharge of 25 per cent levied by the supplementary budget of 1931 on all imports conformed some advantage in addition to the changes made in the March Budget when the import duty was raised to 20 per cent on non-British goods. The emergency budget of 1931 raised the duty on rayon yarn from 10 per cent to 18¾ per cent and the duty on rayon and mixed goods was fixed at 50 per cent and 34⅜ per cent respectively after being subject to a duty of 20 per cent in the previous seven months.

The import trade in textiles is one that is frequently the subject of both description and comment. The Indian industry, hampered though it is by many difficulties, has

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made remarkable progress, that the British manufacturer has lost his hold on the market and that Japan remains the most formidable competitor. The last has of course been the outstanding feature since Japan went off gold in December, 1931. In the middle of 1932, the value of the yen was stabilised at a very low value in terms of streling. Depreciation of the yen exposed the Indian industry to increasingly rigorous competition, and in its representation to the Tariff Board appointed on July 25, 1932 the Bombay industry rested its case principally on the depreciation of the yen. The report of the Board on the question of the depreciated yen and the related charge of dumping (published in September) was preceded by the resolution of the Government deciding on the raising of the duty on non-British piecegoods to 50 per cent subject to a minimum of 5¼ anna per lb. on plain greys. But the higher duty was to be in force till March 31, 1933 and after the Tariff Board reported there was a further decline in the value of the yen which rendered obsolete the figures employed by the Tariff Board in its calculations so that by the middle of 1933 recourse was had to further action, following representations from British and Indian Chambers of Commerce and the duty on piecegoods other than fents not of British manufacture was raised to 6½ annas per lb.

This was not the last development in the triangular contest for the Indian market catered by the Indian mill industry. Lancashire and Japan. At every step, action taken by the Indian Government sought to confer some differential advantage to Lancashire and protection was sought to be kept down to a bare minimum. Piecemeal action had little effect in removing the troubles of the industry, and the acceptance of the Ottawa Preference prior to the belated publication of the Tariff Board report was followed by British-Japanese discussions in regard to the Indian market. At the same time, as the Lancashire mission headed by Sir William Clare Lees visited India a Japanese envoy, assisted by expert advisers, was engaged in negotiating a trade treaty to replace the old convention denounced in April, 1933. The only action taken by Government was to include the provisions of the Indo-Japanese trade agreement of 1934 and the Mody-Lees Pact in prescribing the tariff rates. The main principle underlying the former was to fix a quota for Japanese piece-goods imports and to see that it bore a relation to the quantity of cotton Japan took from India. In the arrangement concluded between Bombay millowners and the Lancashire mission the claim that the Indian industry made to protection was conceded. A lower scale of duties on rayon goods of British origin was agreed to and India was promised that in colonies and British territories she would enjoy the same advantages as the British supplier of piecegoods. The most important point was an undertaking to increase takings of Indian cotton by Lancashire and the promise has been translated into the efforts of the Lancashire Indian Cotton Committee.

In 1935, a special Tariff Board was appointed to examine the effectiveness of the import duties, the level necessary to afford adequate protection against United Kingdom goods and yarn inclusive of rayon and mixture fabrics. The appointment was in response to the request of Lancashire suggesting that import duties should be adjusted in relation to fair selling prices in India. In the cold weather of 1935 the Tariff Board conducted its work, and Lancashire sent a delegation to tender evidence on its behalf in accordance with a provision embodied in the Ottawa Pact giving the U. K. or Dominion interest a right of audience. The Board finished its work before February, but the report was held up and its non-publication caused considerable anxiety. Towards the end of June, 1936, the Government of India released the report and put into effect immediately the tariff changes recommended. The duty on plain grey goods was reduced from 25 per cent *ad valorem* to 20 per cent or annas 4⅜ per lb. whichever was higher to 20 per cent *ad valorem* or annas 3½ per lb. whichever was higher (2) the duty on bordered greys, bleached goods and coloured goods was reduced from 25 to 20 per cent *ad valorem* (3) the duty on yarn of counts above 505 was fixed at 5 per cent *ad valorem* and on yarns below 50's was to be 5 per cent *ad valorem* or annas 1¼ per lb. which ever was higher. The Board considered that the existing tariff conferred adequate protection to the Indian mill industry which has led evidence for an increase in the duties.

The immediate acceptance of the recommendations, without waiting for the legislature's sanction, caused acute disappointment, though the recommendations were not surprising, in view of the fact that the agitation for concessions had been intensified. The chorus of representations against the report had little effect, but the tariff concessions led to no improvement so far as Lancashire was concerned, for a rise in cotton prices, the passing of the Spindles Bill and rising

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wages at home involved an adjustment of prices that rendered the tariff revision of no advantage, as the import statistics indicate. But the criticism of the Government action was not lost sight of in the negotiations for a new trade treaty with Britain and one of the consequences of the criticism was the appointment of a panel of non-official advisers to assist the Commerce member.

It were unnecesary to continue in detail this tale of adjustments of duties and quotas, if only because the outbreak of war in September 1939 opened an altogether new chapter in the industrial history of this country after more or less wiping out the past. To preserve historical perspective it is more important to realise that, though protection for the cotton textile industry has figured so largely in contemporary discussions, the progress of the industry has at every stage been far less dependent on it than on the nexus of more or less fortuitous circumstances that arose at short intervals to give a powerful fillip to the industry. It is not generally remembered that the Tariff Board conducted only two enquiries into the question of protection for cotton textiles; and the first enquiry was as late as 1926 and was occasioned more by the aftermath of the war and the high exchange ratio than by any intrinsic weakness in the position of the industry. Besides, only Bombay was vitally concerned in the enquiry and to a less extent Ahmedabad, while other parts of India were hardly as importunate in their appeal for protection. If the exchange factor, in regard to sterling in the earlier stages of the post-war period and in regard to yen in the later, were eliminated, the cotton mill industry's need for protection will be seen to be less than it has been believed to be. But one thing, however, must be remembered that the depression of the early 'thirties of which dumping was a part also brought on a set of circumstances in which, first, a 25 per cent surcharge on import duties and later, elaborate systems of quotas arose to give sufficient aid to the mill industry in India.

In fact, the depression brought to an end the short period in which tariffs and protective duties were the chief concern of the industry. For, the post depression period, which may be deemed to have ended with the outbreak of the present war, was a period of bi-lateral trade pacts with two countries, who are at once the consumers of our raw material and the competitors of our indigenous industry. In our dealings with these two countries, we have, then, the intrinsically incompatible aims of increasing our exports of cotton and reducing our imports of cotton goods. The cotton textile industry had then come to be closely linked with the producers of raw cotton in the sense that their plans and their demands had to provide for the needs of the agriculturists. To the extent that the trade pacts fixed quantitative limits to the imports of cotton piecegoods the industry gained for the first time the degree of security which it had all along asked for in vain.

To the credit of the industry it must be said it made the most of this security as, indeed, it had made the most, at an earlier stage, of the security offorded to it by the rising tide of nationalist sentiment in the country.

The striking expansion of cotton textiles in India must perhaps be traced from the time the Bombay and Ahmedabad mills actively took up the suggestion of the Tariff Board and started to develop the manufacture of cloth of higher counts. From the middle of the third decade of this century, the industry had a many sided development (1) in the quality of goods (2) in the diversity of goods and lastly (3) in wider expansion over the country and increase in output.

It is not to be supposed that production in all the areas is more or less alike. In fact, historical and geographical causes have gone together to create special features in the cotton textile production of the principal centres; and the following taken from an account prepared under official auspices gives a succintive summary of the facts relevant to this context.

"The range of cotton materials produced in the two great industrial Cities extends over a wide field, and it would be no exaggeration to say that they are capable of producing almost any grey, bleached, woven' coloured or printed cotton fabric in general demand. Normally, however, when catering for the Indian market, the bulk of the cloths produced in Bombay City consists of light texture cloths made from medium count yarns, but a number of mills during recent years have specialised on fine count cloths, which compare in quality with the best exported from England. Grey and bleached plain weave cloths, such as longcloths, shirting, T. cloths, domestics and sheetings account for about 600 million yards of the City's total production, and the bulk of the remainder consists of dhoties—about 400 million yards—and coloured goods between 250 and 300 million yards. No detailed statistics are available as to total annual production of bleached, pice dyed, woven coloured and printed goods which Bombay City mills turn out, but it can be stated that during the last few years the outturn of printed goods and the better qualities of bleached shirtings, cambrics, voiles and mulls has substantially increased.

"Ahmedabad normally produces approximately 1,000 million yards of piecegoods per annum. Her production also covers a wide field, and the outturn of bleached goods, coloured goods and fine count cloth is somewhat greater than that of Bombay City. Ahmedabad also produces dhoties and saries on an extensive scale, and has made considerable progress in recent years in the production of cambries and prints.

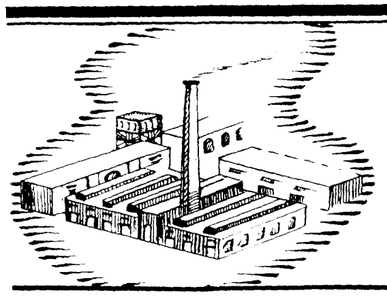
"The Province of Madras has more than 50 mills, but many of them are purely spinning mills catering to the needs of the very important handloom weaving industry in that part of the country. Many of the mills are comparatively new and very well equipped. In the realm of cloth production, the main specialities of the Province are the famous Madras handkerchiefs—produced chiefly on handlooms—high-class cotton coatings, bleached shirtings and drills and Service Khaki.

"The Cotton Mill Industry in Bengal has made exceptional progress in the last ten years, and this is not surprising in view of the fact that Calcutta is probably the largest single cotton piecegoods market in the world. Up to the present, production has been almost wholly confined to grey and bleached goods, with dhoties for home consumption predominating.

"The United Provinces with Cawnpore as the chief centre, produces more than 225 million yards of cloth per annum. Grey and bleached goods account for more than 95 per cent of the production, and the cloths produced are usually coarser in texture than those manufactured in Bombay and Ahmedabad since local cottons are almost invariably used. The main production is dhoties of the type used in Northern India. Other lines of manufactures in which the Cawnpore mills are famous are Tentage and dosuti fabrics.

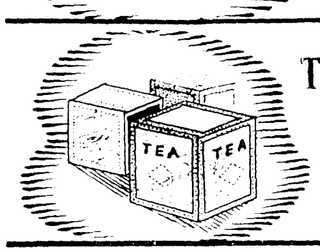
"Delhi and the Punjab specialise mainly in coarse count cloths made from local short staple cotton. Delhi produces considerable quantities of dhoties and tentage materials and excellent upholstery and tapestry fabrics, while the main line of production in the Punjab, where the mill industry is in its infancy, consists of longcloths and T. cloths.

"Production in Indian States has grown rapidly in recent years, and an extremely wide range of goods is being produced. Whilst most of the goods manufactured are made from coarse count yarns, there are a number of mills in Baroda State which specialise in fine count fabrics, and in centres like Indore, a large proportion of coloured goods are made."



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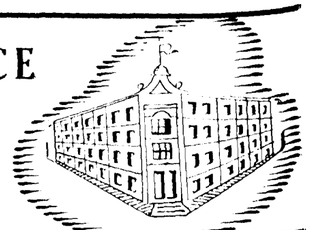


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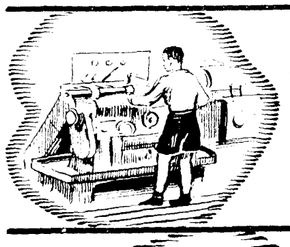
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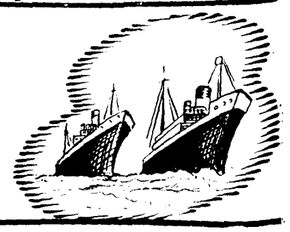


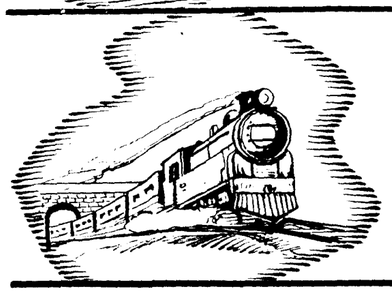
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IRON & STEEL INDUSTRY

The achievement of the war period is the substantial progress made by the Iron and Steel Industry. Since 1937, the output of the industry has nearly doubled. While output has increased the need for increasing the range of production to save shipping space has resulted in the manufacture of certain important alloy steels as well. The progress in this regard has been made possible by the active support afforded by the Government authorities. After the war is over, the only industry that will be in a very good condition, from the competitive point of view, will be the Iron and Steel Industry. The increase in the volume and the range of production and the improvement in technical experience should result in a considerable decline in manufacturing costs. Protection for the Iron and Steel industry, but for the war, should have expired in 1943. In a closed market, as at the present moment, there is no question of continuing protection for there is absolutely no foreign competition; what is however important to be borne in mind is the fact that at the time when the war will be over the industry should be in a position to compete effectively with foreign manufacture and stand on its own legs.

To demonstrate actually the progress made by the industry in the last year, no figures can be given as the same are not published for security reasons. But from the optimistic references made by the Chairmen of the important companies in India, one can very well understand that the companies concerned have been able to manufacture steel in quantity and quality well above the rated capacity and that there is a continuing process of expansion and research. Only recently, it was reported that the increase in the capacity of the Steel Corporation of Bengal by another 300,000 tons was being contemplated. It will be remembered that just on the eve of the war the works of this important iron and steel company were nearing completion and that the original estimated capacity of the company was 250,000 tons per annum. The capacity of the plant was subsequently increased to 300,000 tons per annum. With the latest extensions the capacity of the company will be ultimately somewhere around 600,000 tons. Only in 1938-39 the Tata Iron and Steel Company's capacity was about 700,000 tons. We are not aware of the actual capacity of the works of the Tata Iron and Steel Company but it will not be far wrong to estimate the total output of the Indian Iron and Steel industry at the present moment at about 2 million tons. Only very special qualities of steel are imported. That the war effort in India requires an even greater quantity of steel, thanks to the large production of shells, shipping and numerous other items requiring steel, will be evident from the efforts made by the United States to import in substantial quantities steel even of the commoner qualities.

The importance of the Iron and Steel Industry in the present war can scarcely be under-estimated for, as is well-known, the only two important materials required for the successful prosecution of the war are steel and oil. In this sense, the rapid strides made by the Indian Iron and Steel industry during the past few years has been opportune and of great strategic importance. Compared to the production in the important countries in the West, Indian production may still seem to be insignificant but it would be important to know that the real progress was made only during the 'thirties and that the war has found the Indian industry in a sound and prosperous condition. The progress made by the Tata Iron and Steel Company Limited, the biggest single unit in the Empire, and the successful floatation of the Steel Corporation of Bengal in 1937, and the coming into operation of the plant soon after the outbreak of war, are the important features in the history of the Indian Iron and Steel industry in recent years.

The important companies, the Tata Iron and Steel Company, Limited, the Indian Iron and Steel Company, Limited, and the Steel Corporation of Bengal Limited are at present engaged on the production of war materials. The task of the iron and steel industry has indeed become very difficult in the last two years as with the virtual cessation of imports and the sharp increase in demand, there is a scarcity of steel and deliveries for ordinary consumption can be had only after a long period. The Indian industry is placed in a very important position as with the fall of France and the growing importance of the Middle East, it has been entrusted with the task of supplying the steel and pig-iron requirements of Iraq, Egypt and other countries. More than the problem of supplying large quantities of standard products, the companies have been obliged to start the production of new alloys and new lines.

The industry has great natural advantages and Mr. Dunn of the Geological Survey of India has drawn attention to the mineral resources of the Singhbhum District of Bihar which can be compared to the northern part of Ontario. As regards iron ore, limestone and coal, India is now considered to posses great advantages and the average experiences of the small units working in the 19th century are now belied by the great success attained by the Tata Co., and the Indian Iron and Steel Co. The proximity of good class coal to the iron ore deposits must be regarded as the main factor making for rapid progress and although there have been fears that the coking coal supplies in India may give out, proposals aiming at the conservation of the country's coal resources now render it improbable that the industry's advance will be retarded by the shortage of the right kind of fuel. In Europe and America, transport costs are appreciably higher and the cheapness and quality of Indian iron ore and its proximity to coal fields are not equalled in any other country. Nature has done more than her share in providing the essentials for the iron and steel industry and so far as labour is concerned, experience has gradually provided a trained labour force whose efficiency is gradually rising. There has never been any fear as regards any shortage of the volume of labour and the iron and steel industry during the last year has done enough to guard itself against labour unrest in any form.

India's increasing consumption of iron and steel makes any anxiety concerning markets almost superfluous. India has been a large importer in the past and the domestic production can only satisfy part of the existing demand, the increasing industrialisation of the country makes it certain that the demand for iron and steel and manufactures thereof will not decline but will increase considerably. The substantial progress made by the subsidiary industries established in conjunction with the iron and steel industry during the past few years afford a reassuring indication of what a prosperous steel industry can do for the country. The benefits, obtained by the tinplate industry, the wire and nail products industry during the past few years have been real and tangible. The plants of the subsidiary companies located round Jamshedpur are all likely to share to the fullest extent in the present prosperity of the industry. The foundries and workshops scattered over all provinces are also likely to experience the benefits accruing from the expansion of iron and steel production after a period of depression in which progress was at a relatively slow pace compared with the very substantial expansion of the steel industry in America and Europe. Round Jamshedpur, as every one is aware, there are numerous plants based on the iron and steel produced by the Tata Company and their progress in the last decade despite unfavourable trade conditions is indeed a happy augury of what is to come. The industries, which have followed the establishment of the potentialities of industrial development in this country and the great natural advantages of the iron and steel industry and its growing prosperity have come to reinforce the hopeful prospects that these subsidiary industries have now before them.

The iron and steel industry was the first to be investigated by the Indian Tariff Board. The Board appointed in 1923 reported in favour of protection and the Indian Legislature passed an Act recommending the levy of specific duties on imported iron and steel materials and the grant of bounties for the manufacture of rails, fishplates, etc. The engineering side also received the benefit of 25 per cent. duties on fabricated steel and the Act also made provision for the protection of the recently born tinplate and wire and nail industries. The scheme of protection was revised in consequence of a heavy and unexpected fall in Continental steel prices and the rise in the rupee exchange to 1s. 6d. The Tariff Board recommended an increase in the duties on imported fabricated steel. The Government of India accepted the findings, but held that a scheme of bounties was preferable to the steep increase in duties recommended, and the Board itself approved the proposal to grant a bounty up to Rs. 50 lakhs on steel ingots produced.

Subsequent tariff board enquiries adopted the scheme of bounties introduced in October 1924 and an act of the Indian Legislature in 1926 amended the former act and provided for higher specific duties. A later enactment in 1927 extended protection till 1933-34 and conferred power on the Governor-General-in-Council to increase the duties, if protection was threatened by dumping. Prior to this, the statutory enquiry of the Tariff Board reviewed the working of protection and recommended two scales of duties, basic and additional, the former applying to British manufactures

and the latter governed by the prices of Continental manufactures. Though the margin of protection was based on the Board's view that all possible encouragement to Indian Steel should be given through State purchases found favour, and in the case of fabricated steel also, the Board held that the use of Indian products should be encouraged by the railways and other consumers. Tariff changes since 1926 were not of any moment and the revenue duty on imported pig iron also was retained. The progress of the Indian industry was examined from time to time by the Tariff Board in connection with inquiries in relation to the wire, nail, tinplate and galvanised steel industries.

The working of protection was investigated thoroughly by the last Board appointed in August 1933 and its conclusions deserve to be set down. The Board considered that the scheme of protection adopted in 1926 had proved successful and that the expected reduction in prices has been effected and that a stage had been reached when on all articles sold by the steel company in competition with Britain, it was possible to say that on imports either no protective duty is required at all or if any is required, the rates may be lower than the normal rates of revenue duty. The Board added that if Continental steel products were sold at fair prices the Indian industry could well stand their competition, and that the duties which needed were more in the nature of anti-dumping than protective duties. The Board recommended a duty of Rs. 43 per ton on the imports of untested structurals from the Continent: Rs. 10 per ton on British bars (tested): Rs. 39 per ton on Continental untested bars: Rs. 25 per ton on untested plate from the Continent. On rails, fishplates, structurals and tested plates from Britain the Board recommended no duties. On black sheets (tested) from the U. K. the Board recommended Rs. 10 per ton and Rs. 32 per ton on imports from the Continent. Galvanised sheets were recommended to be subject to an import duty of Rs. 10 per ton, irrespective of the country of origin. On imports of fabricated steel from countries other than Britain a duty of Rs. 40 per ton was recommended. The Board advised a duty of Rs. 38 per ton on British tinplate and Rs. 57 per ton on Continental. On imports of wire nails, the scale recommended was Rs. 25 on British and Rs. 60 on foreign. A duty of Rs. 57-8 per ton was recommended on cast iron pipes imported from foreign countries, while British pipes were to be allowed free entry. The more important part of the Board's proposals related to the recommendation that even the revenue duties on rails and tested structurals should be removed or in the alternative, countervailing excise duties should be levied on internal production. The Government of India accepted the recommendation of the Board, but preferred equalising duties to the removal of the revenue duties. The principle laid down in 1929 and followed since, that in the main the amount of protection should be the difference between two prices (1) the c.i.f. price at which foreign steel is likely to be landed in India without duty and (2) the price at which the Indian manufacturers can sell at a reasonable profit which was termed the fair selling price. In the 1933 report also, the Board based its recommendations on the same principle after reviewing the working of the protective scheme in force for the previous seven years. The Board noted the large share of the Indian market now supplied by Indian manufacturers. The share obtained by the Tata Company rose from 30 per cent. in 1927-28 to 72 per cent. in 1932-33. Imports were consequently reduced and foreign plants were working at a level much further below their capacity compared with Tatas.

The reduction in costs obtained by the Tata Company as a result of expansion and experience formed the subject of approving remarks, but the view that even the revenue duties were superfluous induced the Government to levy an excise duty of Rs. 4 per ton on steel ingots and countervailing duties on imports by the Iron and Steel Duties Bill of 1934. The Board's report was the subject of serious criticism, and the objection in principle to differential duties, the introduction of the back door, and the practical termination of protection formed the main points of attack. In the succeeding year the industry passed through a period when the effects of the tariff changes made themselves felt. Imports increased and domestic production was affected to some extent by the levy of the excise duty. Prices too were lower and the Tata Company had to work for a reduction of costs in order to bear the excise duties which amounted to Rs. 35 lakhs and also the lower level of prices while freight rates also, especially, on the E.I.R., proved a source of disadvantage. But the Company increased the efficiency of the plant and raised the output thereby. Equipment was kept in first class condition and a second sheet mill was brought into production. Better results were obtained from the coke plant and a battery of coke ovens constructed.

The progress made by the Company was reflected in the resumption of dividends on the ordinary and deferred stock in 1936. At the annual meeting of the Company in 1938 Sir N. B. Saklatvala made reference to the fact that the Company was in a position to finance development out of earnings, and expressed the view that the adoption of a profit-sharing scheme as a mark of confidence in the labour force should yield valuable results. The Chairman of the Company referred to the completion of the new steel mill, and said that with the mill in operation and the possibility of manufacture at the lowest possible cost, India should be practicly independent of all imports. The proposed tube plant to be worked in conjuction with Messrs. Stewarts and Lloyds and the construction of a hoop and strip mill formed the subject of optimistic remarks and the efficiency of the old furnaces and oven and the adoption of the latest methods for the proposed developments were also mentioned in the Chairman's review.

The progress of the Tata Company in recent years does not form the principal feature. 1936 will be memorable for the reconstruction of the Indian Iron and Bengal Companies. After protracted negotiations to start a new steel company in conjunction with Tatas, the scheme was abandoned. While Tatas decided to carry out their own scheme of development independently, Indian Iron also decided to prosecute their scheme and sponsored the formation of a new plant at Hirapur to work with the hot iron provided from its furnaces and also to give facilities as regards land, water and lighting, etc. The Steel Corporation began operations in November, 1939.

The progress of the industry in recent years will be evident from the following figures. Production of steel ingots has increased from 5,90,600 tons in 1932-33 to 1,070,400 in 1939-40 nearly double the former figure. Monthly production has been well over 100,000 tons since the coming into operation of the Steel Corporation of Bengal. Production of finished steel during the same period has increased from 441,600 tons to 1,065,600 tons.

The important part played by the iron and steel industry in the country's war effort will be evident from the fact that nearly the whole of the production is taken up by government orders and it has been necessary to ration steel consumption. Apart from the sharp increase in the production of steel a very good opportunity has been afforded to the industry to manufacture new qualities of steel. The manufacture of alloy steels and acid steel has not been hitherto undertaken in India. The Tata Iron and Steel Company is now in a position to undertake the production of these qualities of steel. Only recently the plant for the production of axles and tyres was put into commission.

Even before the outbreak of war imports showed a tendency to decline with the European countries busy on rearmament. Till May 1940 imports of steel were coming in at a fairly satisfactory rate but since then there has been a sharp decline and at the present amount to only very small quantities of special steel. There are practically no imports of the protected qualities. Apart from the decline in imports and the increase in internal consumption, there is need for catering to export markets. Exports have increased from 84,600 tons to 106,500 tons in 1939-40.

The products of the Steel Corporation are sold through the extensive selling organization of the Tata Iron and Steel Company. It will thus be clear that the industry is of great importance to the country at the present moment. The industry in its turn has been afforded a great opportunity to consolidate its position and manufacture certain lines, the production of which were considered hitherto unpracticable in India.

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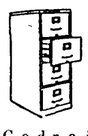
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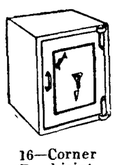
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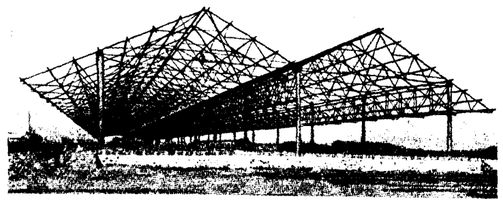
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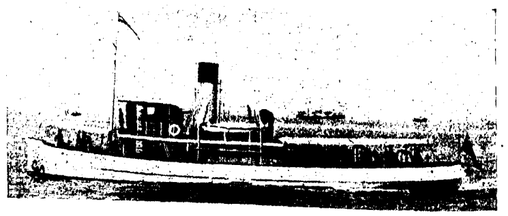
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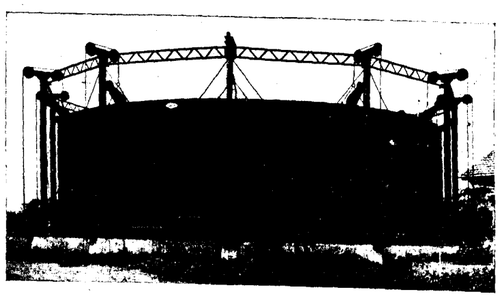
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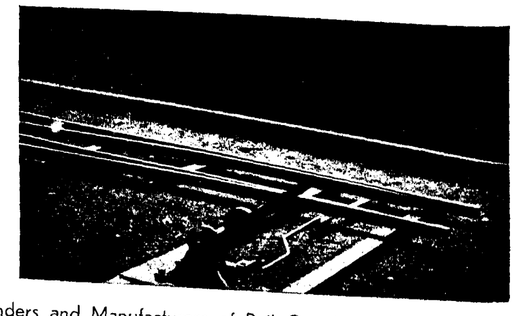


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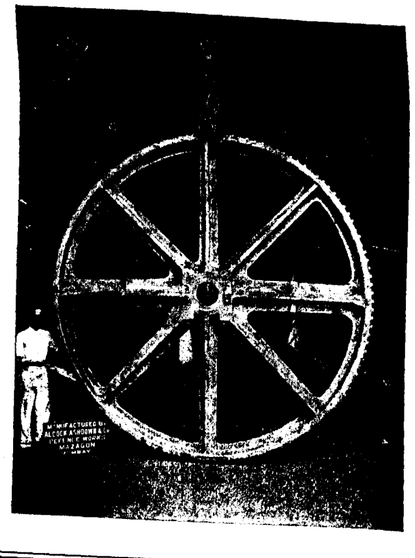
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THE INDIAN COAL INDUSTRY

The Indian coal industry is perhaps the only export trade being the only industry that is not in a position to take advantage of the improved conditions on account of the war. With the higher rate of industrial activity it should certainly be said that the demand for coal has increased considerably to speak only of internal demand but the main problem, as in the case of other industries, is transport. The acute shortage of wagon supplies has been responsible for a considerable decline in despatches and incidentally of raisings too. Thus in the case of most companies it was even difficult to maintain earnings at the level of the two years just before the outbreak of war. The difficulty in getting wagon supplies will be evident from the fact that efforts have been made during the last year to discourage the consumption of coal in areas where it is not possible to send this much-needed fuel in adequate quantities. Even in Calcutta, the important supply centre, it was found necessary to reduce the consumption of fuel as far as possible and for a time the rationalisation in the production of jute industry was actively discussed. The main aim was to save consumption of coal and electric power as far as possible so that there would be a reduction in wagons for bringing in coal and also to release power for other industries usefully engaged in war work. In Southern India which is mostly dependent on supplies of coal from Bengal, train services have been very drastically cut down and firewood has been used side by side with coal in complete disregard of cost. In the Western Presidency most industrial centres have got a very bare supply of coal. There is a clamour for wagons and yet more wagons. With the easier shipping position it would perhaps have been possible to expect an increase in the overseas exports to markets like Malaya, Indo-China and other places but with the entry of Japan into the war we have lost these export markets and the advantage over South Africa on account of the higher freight rates is not in any way helpful to the industry. The coal industry, therefore, was not in a position to take any advantage of either the improved shipping position or the higher demand for coal within the country. It is not surprising therefore that most companies have even reported a lower level of earnings during 1942.

In importance, the coal industry in India can hardly compare with cotton, or jute, or with the pure agricultural staples. In both raw cotton and cotton goods our production is a substantial portion of the world output; in jute we have a practical monopoly; and the agricultural staples have a significance in the national economy apart from, and independent of, their relation to the output, and markets of the rest of the world. But in coal, our annual production is an average of 21 million tons, out of a The industry in India has comparatively less world production of about 1,250 million tons. capital invested in it; and the chief collieries are confined to the provinces of Bengal and Bihar and Orissa. Yet, it is one of the most important industries, one in which the public can never afford to take a mere lukewarm interest, First, the welfare of the local industry, though it fills a smaller place in the whole of India, is of vital importance to Bengal, Bihar and Orissa. Secondly, coal is by every criterion a key industry. A good supply of coal is one of the basic conditions of industrial progress. Our vast railway system would be unworkable without a well-worked coal industry.

Joint-stock coal companies have invested more than Rs. 12 crores in the industry; and there is besides a small knot of coal-fields owned by the railways for which details of capital are not available. Though Raneegunge and Jharia tower over all the rest of the coalfields in India, the progress made by the latter is by no means insignificant.

The railways, who form the chief consumer of Indian coal have acquired and been working their own coal mines. Objection has been taken to this development on the ground that as the railways are owned by the State, the establishment of railway collieries would mean an unjustifiable and unwarranted encroachment of the State into the sphere of private industry. It is, of course, contended in reply that as the railways are commercial enterprises, they must have freedom to develop their business interests and devise combination of a vertical nature, if they deem it profitable to do so. The railway collieries have been developed in the face of natural opposition.

The industry's economic position underwent a definite change for the better during 1936-37. Though the export trade, except to Ceylon, continued to shrink, internal consumption was on the upgrade and the industrial developments in progress led to enlarged use of coal. The price of coal improved in sympathy and after the beginning of 1938 there was a sharp reduction in stocks which stimulated prices.

The amendments to the Indian Mines Act and the passage of the Sandstowing bill by the Central Legislature are obviously major events for the coal industry. The adverse trend in coal prices from the beginning of 1939 showed that the stability of the industry was not above question and only the urgency of reforms in extraction methods compelled the government to go ahead with its programme. The Statutory Board with an official chairman is to work at Calcutta, and arrangements have been made for the collection of the cess from the industry. Opposition to the proposals has died down, and the improvement in the labour situation has induced the coal mining industry to accept the case for safer, albeit more expensive, mining.

Until the middle of 1939, the export trade was in an improved state, and the Sino-Japanese war brought about an increase in the volume of exports to the Far East. Total production in India recorded a rise from 23.47 million tons to 25.06 million tons during 1939-40. To judge from the output figures the coal industry must have had a good year, but few of the coal companies can report an increase in profits. The active demand for first class coal was advantageous to only a few companies but the increased consumption in most industries was decidedly advantageous, the withdrawal by the South African Government of the ban on exports of coal did not interfere with India's exports which attained the peak for 10 years during October, 1938. Total exports also advanced to over two million tons in 1939-40 while imports declined in a marked degree as soon as Indian prices moved downward. Imports were the lowest on record since 1929 and this may explain how the increase in output was absorbed. The increased consumption in industries did not alter the key position the railways still retain.

The coal industry, like the sugar industry, has not derived any advantage from the presence of war conditions. In fact the important coal companies have been finding it hard to maintain their earnings at the record level of 1937-38, for the post-war period. Prices have remained more or less steady, there being only a mild flutter in the last season.

The large increase in costs of production has cut into profits and these have been only maintained with a larger amount of production. The higher costs of production have been mainly due to the rise in prices for stores, higher freight rates and wages. The increase in industrial consumption and the absence of any foreign competition has no doubt enabled the companies to maintain earnings at a high level but it is feared that the export trade will suffer a serious setback and the opportunity afforded to develop the Far Eastern markets lost on account of the difficulties in shipping and the sharp increase in freight rates. The importance of this aspect in trade will be evident from the fact that there was a boom in exports in 1939-40, total exports being over 2 million tons against 1,341,320 tons in 1938-39. In 1940-41 exports were maintained with some difficulty at 1939-40 level. There were fears of a shortage of freight seriously affecting exports in the middle of last year. Happily till the beginning of the year exports have continued at a high level.

(In tons 000)

	1940-41	1941-42	1942-43
April ..	220.19	62.41	16.09
May ..	191.06	91.37	3.08
June ..	200.82	131.71	18.82
July ..	123.83	244.87	18.03
August ..	165.98	139.55	..
September ..	97.47	226.85	..
October ..	50.49	176.54	..
November ..	335.87	172.50	..
December ..	164.15	95.17	..
January ..	165.76	130.79	..
February ..	143.59	66.42	..
March ..	81.44	17.48	..
Total ..	1,940.65	1,555.66	

That the export trade has been badly affected will be evident from the figures of the last year. Since November 1941 there is a sharp decline in exports and in the first half of this year, the average has been only about 18,000 tons against the normal offtake of 200,000 tons. It is very clear therefore that with the Japanese entry into the war, exports to Far Eastern markets have been badly affected and that the short fall in this respect may be anything of the order of 1.2 million tons. With the increase in the cost of production and the necessity to reduce raisings, with the difficulty in regard to wagon supplies, it should be said that the coal industry has not in any way been benefited by the improved conditions in the industry on account of war. The export figures for the last three years are given above.



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PAPER MAKING IN INDIA

The boom of 1937 has in many ways been advantageous to this country. But for the large number of new company floatations during that boom period consumers of the various important commodities would have been very much in the same position as in the last war. The developments in the years 1937 to 1940 were noteworthy especially in the paper, chemical, glass, rubber and iron and steel industries and it is needless to say that we have to be entirely dependent on our own resources in regard to these articles manufactured by these industries in this war period. Before the war there was a cry of overproduction in the paper industry and with the cut-throat competition between the various mills within the country and the important producers outside the country, paper prices were very low and there was a heavy accumulation of stocks. With the large import of paper of the unprotected qualities, and, even of the protected varieties, the excess of the Indian industries capacity was said to be as much as 100,000 tons. At the present time, however, there is an acute shortage. Ninety percent of the entire production of the paper industry is taken up by the Government and a bare 10 percent is left over for ordinary consumption or about 6000 tons against the annual consumption of 100,000 tons. It is not possible to import paper in any large quantities from other countries mainly on account of the difficulties in regard to shipping. Also, in the important producing countries it has been found necessary to limit production to the 1941 levels to give greater attention to war industries. Efforts are being made at the present moment to maximise production by suspending the production of the finer qualities of paper and reducing the range of the products manufactured. How far it will be possible to increase production to any great extent remains to be seen. It is very unfortunate however that in a country with a very low level of consumption, consumers should be asked to reduce as much as possible their requirements. Recently a new order has been passed to control over-consumption of paper; new publications have been banned and approved customers will be able to get their requirements only on the basis of a quota.

There are not many who are on the approved list and who are in direct contact with the mills. The average consumer has been obliged to buy in the 'black market' inspite of the fixation of maximum prices by the mills in agreement with the Government. It has not been possible to prevent prices soaring high in the black market. Against the mill prices of around 7 annas 4 pies per lb the average price in the black market is about Rs. 2 per lb.

Paper making in India is of some antiquity. At least one writer claims that a hand manufacture process had been known and practised from quite early times. But we are not now concerned with the evolution of craftsmanship so much as its establishment as a modern industry. This may be said to date from the year 1867 when the first paper mill, subsequently absorbed into a larger concern, was established on the Hooghly. During fifteen years of solitary existence this mill made no very marked headway in either technical or commercial department. In 1879 a second paper mill in Upper India had come into production and in 1882 the third mill was registered as a public limited company. These three, with a couple of smaller concerns in Gwalior and Poona, were the early pioneers in an industry which in its early days does not appear to have made a very strong appeal to the industrial entrepreneur of last century. By 1925, the year in which the industry first made an organised appeal for protection by tariff, there were 9 mills in existence, whilst two more were projected. In the intervening years the number of mills in production has only been increased by two bringing the total to 11 in 1940. The relatively high capital outlay coupled with the admittedly difficult technical processes have tended to keep down the number of paper making concerns in India. For most of the time that paper has been made in India manufacturers have looked mainly to the domestic market for their sales, but the time has arrived when paper making in India may be ranked amongst the country's potential exporting industries.

In its early days the Indian industry considered the manufacture of high class white paper rather beyond its capacity, and this was to some extent due to its dependence upon rags and waste paper for its raw material. But this crude practice was soon to change. Routledge in 1860 proved the virtues of esparto—a semi-tropical grass—and in 1875 and 1879 reported upon the possibilities of Indian bamboo which served to draw attention to other Indian fibres. There are only incomplete records of the early experiments with Indian fibres, but it is known that two mills made use of Moonj (saccharum Moonja) and Sabai (Ischoemum Angustifolium) in their first years. Moonj seems to have held the field in the beginning, for it made a very good paper. Sabai, however, presented less difficulty as regards treatment, and, therefore, soon came into universal favour among Indian mills. Having found in Moonj and Sabai ample resources of plant fibre it was perhaps natural that the Indian mills then in operation should at that time have made no effort to follow up Routledge's researches in bamboo—a much more difficult problem. But it is an interesting speculation to think of the possibilities had the technique of bamboo pulp manufacture received simultaneously the attention given in other countries to the technique of wood pulp manufacture. Possibly, India might have come to the forefront as one of the world's most important producers of pulp and paper. What actually happened was that the industry based on Sabai grass, while relatively still in its infancy was almost put out of business by the competition of wood pulp. Nevertheless in bamboo it later found a new raw material of great value.

A few details about the homely indigenous fibre which provides the raw material for this great Indian industry may not be out of place at this point. Both the Tariff Board of 1925 and the Tariff Board of 1931 found that the supplies of bamboo in areas where the other conditions were favourable for exploitation were sufficient to meet the needs of all the paper mills in India and to leave a surplus from which an export trade in pulp could be developed. Apart from Assam and Chittagong, seven areas were specified as having been subject to regular survey, one in Orissa, two in Madras and one in Bombay, from which the estimated yield of bamboo was 291,000 tons, and three in Burma from which the estimated yield was 1,661,000 tons. The quantity of bamboo available from surveyed areas in India now exceeds 600,000 tons against an estimate of 291,000 tons in 1930-31. Additional supplies are obtainable from unsurveyed areas for which no estimates are available. Assuming that 2.38 tons of bamboo on an average are required to make a ton of paper, the quantity of bamboo at present required by mills is about 40,000 tons. There is, therefore, an ample margin of reserve supply available for an extension of bamboo pulp manufacture. In Burma, where supplies of bamboo are even more abundant, no paper mills have as yet been established.

The advantage of bamboo as a raw material in comparison with wood is that the cutting rotation is on an average 4 years as against 60 years for most species of wood. A disadvantage is that when bamboos seed, they die, and in any given area the supply may be curtailed for a period of 10 years. Bamboos seed 'gregariously' or 'sporadically' and the degree of sporadic seeding varies. Recent investigations indicate that the seeding of bamboos is more gradual than was at one time thought and does not extend to all species simultaneously. Further, the reed bamboo stems remain suitable for the manufacture of pulp for a considerable time, which tests have proved to be at least four years. The danger of a shortage of bamboo in any given area in consequence of seeding is not, therefore, considered serious.

After bamboo, grass is the second most indigenous material used in India. The species used for the making of pulp is "Sabai" grass which is grown mainly in the Punjab. Whilst bamboo is the principal material on which the future of the paper industry mainly depends, grass as a constituent of paper has a recognised value and will continue to be used in conjunction with other materials as a necessary ingredient in the manufacture of certain classes of paper for which special bulk or tensile strength is required, just as esparto grass is used by a particular class of mills in the United Kingdom. It is probable that, with improvement in the quality of bamboo pulp, mills, which can obtain supplies of both bamboo and grass, will to some extent substitute bamboo pulp for grass pulp on account of its relative cheapness. But in the United Provinces and the Punjab, where adequate supplies of bamboo are not available, grass must continue to be the chief raw material. Waste paper and cloth cuttings are also used as ingredients in the manufacture of cheaper class of paper to a small extent by bamboo and grass mills and to a greater extent by other mills. The quantity used was 5,908 tons in 1936-37. Supplies are obtained by mills through contractors mainly from large towns where sufficient quantities are available for the

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collection of diffierent qualities. White paper and paper cuttings are in most requirement. Coloured papers are sorted out from the white and used for the manufacture of inferior papers such as badami and brown packing. In most countries that make pulp, wood of the coniferous variety is the principal material used. In India, forests of coniferous trees—pine, spruce and fir—are available in the Himalayas, but difficulty of extraction and lack of transport facilities, have hitherto stood in the way of the utilisation of wood for the manufacture of chemical pulp. It is doubtful if use can be made of spruce and fir on account of the inaccessibility of the areas in which they grow except in the Kashmir State. The possibilities of using pinewood are more promising. A number of auxiliary materials are used in the Indian industry. Some of them are indigenous; some have to be obtained from elsewhere. A limited quantity of wood pulp is imported either as bleached pulp ready for admixture with bleached indigenous pulp or as unbleached pulp which requires bleaching along with other material. The chief qualities imported are bleached sulphite pulp, and easy bleaching and unbleached strong sulphite. Small quantities of special kinds of pulp such as aspen and kraft pulp are imported for special lines of paper.

As the manufacture of pulp from bamboo is exclusive to India, a brief description of the process should find a place in any survey of the industry, however brief. Imported pulp is no longer essential, though for certain purposes it is sometimes added, but the best qualities of printing and writing papers can be made without its admixture. One of the main trends of research in recent years has been the increasing use of indigenous materials, which has in fact been an essential condition of the protection in certain categories of paper which the industry has enjoyed for some time past.

The initial stage in manufacture is the crushing or chipping of the raw bamboo into a form suitable for the subsequent processes. This mechanical treatment is necessary in order to disintegrate the fibre and render it accessible to the chemical reagents employed in the process of digestion. The experience of mills which manufacture pulp from bamboo, is that crushing in a series of rollers is more satisfactory than chipping the bamboo in chipping machines. The next process is the digestion or cooking of the disintegrated fibre, which is the chemical process by which the various substances other than cellulose are dissolved. These substances consist mainly of pectins and lignins in several forms. Two processes are in use, which may be described as the acid process and the alkali process. In the acid or sulphite process the chemicals used in the preparation form magnesium-sulphite.

The acid liquor is pumped into the digesters loaded with the bamboo chips by the direct overhead method and the temperature slowly raised by the admission of steam under pressure. The digesters consist of a mild steel shell lined with acid resisting brick and are of different capacities. After cooking is completed, the contents of the digester are blown off into a 'blow pit' from which the spent liquor carrying the non-cellulose material is drained leaving the bamboo pulp behind. The alkali process may be subdivided into two, the soda process in which the principal chemical used is caustic soda, and the sulphate process, and the soda process in which sodium sulphide is mixed with a small proportion of caustic soda. The application of the chemicals used can be made in more than one way. The 'fractional' and the 'cascade' methods are those at present in use in India. The average total period of cooking is 14 to 15 hours including washing of the pulp. Those mills using the alkali process have special plants for the recocery of chemicals. After the digestion or cooking process is completed and the pulp drawn off from the digesters, the next stage is washing and straining to remove impurities. The pulp is then pumped into a concentrator where the water is extracted and the concentrated pulp passed to a storage chest ready for the process of bleaching.

Where grass is used it is first dusted and then loaded into digesters. The process of digestion or cooking of grass is carried out in one operation at a constant pressure with sodium hydroxide either by the direct overhead or by 'fractional' system. The pulp after digestion is broken up, strained, washed and bleached. After completion of the process of bleaching the bleached pulp is passed to the beating house. If imported bleached pulp is used, it is added at this stage. The process of bleaching is of great importance since the quality of the paper made depends largely on the attainment of the correct degree of consistency in the pulp. The length of time required for beating depends on the nature of the material from which the pulp is made. After beating the pulp is passed through the paper machine to emerge finally as paper.



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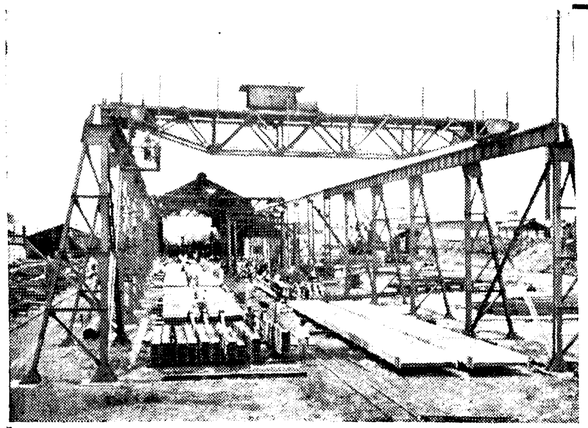
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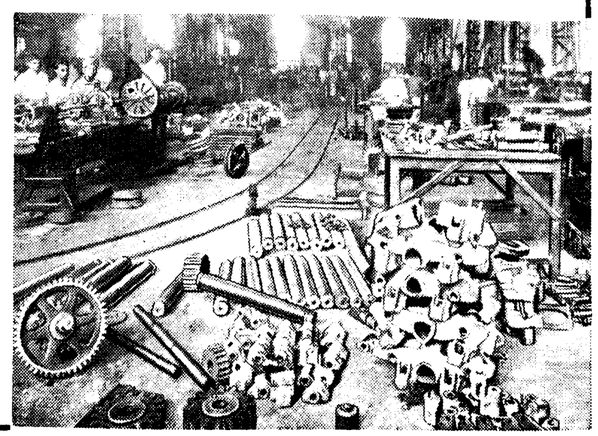
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ALLOY STEEL



In recent years a good deal of attention has been paid by Indian manufacturers to bringing their pulping and beating processes up to date, and the rapid improvement in the quality of Indian paper has undoubtedly been due to the replacement of obsolescent machinery by more up-to-date plant. There has been a fairly general introduction of sizing plants, calendering machines, new cutting and reeling machines and guillotines for trimming, whilst as a whole the tendency has been to introduce the electric drive for plant where it was not already present.

For the sake of clarity we might very roughly classify those categories of paper which enjoy tariff protection and those which do not. Protected papers include all kinds of printing paper with the exception of chrome, marble, flint, poster and stereo containing no mechanical wood pulp, or in which the mechanical wood pulp amounts to less than 70 per cent of the fibre content. Writing paper is also protected. Unprotected papers include packing and wrapping paper, articles made of paper and *papier mache*, printing paper of all sorts which contain mechanical wood pulp and stationery. The report of the findings of the last Indian Tariff Board to enquire into the paper industry made some interesting calculations as to the future of consumption and the capacity of the industry to meet it. During the period 1929-30 to 1936-37 consumption increased by 6,656 tons, an annual average increase of 951 tons. They calculated that consumption in future may fluctuate from year to year in accordance with the effect economic conditions may have on the purchasing power of the population, but over a period of years may be expected to increase with the spread of literacy and the growing demands of educational institutions. They thought it difficult to estimate the rate of increase, but it was likely to be higher than in the period 1929-30 to 1936-37 unless any abnormal circumstances intervene. They considered the average annual rate of increase during the next few years might be estimated at 1,500 tons per annum, distributed over the protected and unprotected classes of paper in the proportion of 62 and 38. On this calculation the demand for protected classes of paper might be expected to have risen to 57,000 tons by 1940-41 and unprotected classes of paper to 35,000 tons, a total of 92,000 tons. By 1940-41 the capacity of established mills, they thought, would have increased to 63,900 tons. The capacity of new mills under construction or definitely projected was thus estimated at 95,600 tons, but it is unlikely that they will be in a position to manufacture to their designed capacities. Assuming an output of 80,000 tons, and allowing for the fact that three mills are designed to manufacture paper mainly of the unprotected classes, the production of protected classes of paper might exceed the demand by some 7,000 tons, but the total production would fall short of the total demand by 12,000 tons, taking protected and unprotected classes together.

These figures, which were compiled some two years ago before the situation had been so radically changed by the war, make an interesting comparison with a later calculation. The present annual production of the Indian mills is 90,000 tons, a figure which excludes the output of one mill that had changed hands and has been temporarily out of production. During the immediate pre-war period, and since the commencement of hostilities, there has been a sharp jump in output as the undernoted table of imports and Indian mill production during 1938-39 reveals. It will be observed that, by comparison with the present estimated annual production of 90,000 tons, the Indian mills a little over two years ago were producing at the rate of just under 60,000 tons per annum. The following are the main heads of imports into and production in India for the year 1938:—

Paper containing substantial proportions of mechanical wood pulp	41,538
Old newspapers	47,384
Writing and printing paper substantially made from chemical pulp	37,654
Straw-boards, card, mill and pasteboards	27,057
Indian mill production	59,198
Total consumption ..	212,831

Excluding boards, it will be seen that imports into India are divided fairly evenly into paper made from mechanical wood pulp, old newspapers, and paper made from chemical wood pulp.

It will be seen from the foregoing that even with an output of 90,000 tons per annum there is a shortage of 2,000 tons. Government consumption was then only around 25,000 tons. If it is remembered that the consumption on account of Government departments has increased to 90,000 tons it is unnecessary to point out that there is an acute shortage of paper for ordinary consumption and the recent ordinances leave only about 10,000 tons of paper even after allowing for increased war production.

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ALUMINIUM INDUSTRY IN INDIA

By Mr. KENNETH HALL

The outbreak of war, and in particular the early realisation that its outcome would be largely decided in the air, has sharply focussed public attention on the importance of aluminium as a primary metal for armament purposes. This fact was realised at an early date by the German Government, and since 1935 strenuous efforts were made to build up the production of aluminium in Germany, both as an essential material in the production of its aircraft, and in an endeavour to attain self-sufficiency by substituting it for other metals such as copper, which necessarily have to be imported from abroad. However, Germany possesses no indigenous source of supply of bauxite, the essential ore of aluminium, nor of cheap and abundant electric power with the result that the large expansion of output which has been achieved remains on an artificial and insecure basis. The British Empire, on the other hand, is more fortunate in possessing ample deposits of bauxite as well as of cheap hydro-electric power. Some of these sources of supply, such as the bauxite deposits of British Guiana and the hydro-electric power of Canada and the British Isles, have already been developed, and are at present being rapidly expanded. In other countries, including India, these natural resources have hitherto lain fallow, and the task which at present lies ahead of us is to ensure that they shall be utilised as promptly as possible, firstly, as an essential contribution to the winning of the war, and secondly, as an important factor in the development of the industrial and mineral wealth of this country after the war is won.

Prior to the war, a flourishing industry existed in India for the manufacture of aluminium cooking utensils in factories with modern equipment in the principal cities of India and Burma, and in recent years these activities have been extended to include the supply of aluminium castings, equipment for various industries and tea-gardens, and for architectural uses. As a matter of interest, the largest single manufacture of aluminium utensils in the British Empire is carried out by an Indian firm, staffed and operated entirely by Indians. A thriving export business was also built up with various parts of the Near and Middle East, such as East Africa, Palestine, Iraq, the Persian Gulf, Ceylon and the Straits Settlements. The industry was, however, dependent upon outside supplies for its requirements of aluminium, mainly in the form of sheet or sheet circles, with the result that since the war, with the shutting off of supplies of raw materials, coupled with the virtual loss of the export market due to restrictions on export, its position has been one of some difficulty. However, existing stocks have been husbanded, in part with a view to possible Government requirements. The industry is at present making an important contribution to India's war supplies in the form of utensils and water-bottles for the Army, fuse parts, dust goggles and gas masks, various castings and small stampings, and in the form of ingot. It may not also be generally known that aluminium for deoxidisation purposes is a necessary raw material in the manufacture of steel, and that throughout the war the industry has kept the vast steel works of Bihar and Bengal fully supplied with this essential ingredient. It is probable that as the potentialities of its equipment are more fully realised, the activities of the industry will be still further extended.

The uses of aluminium in modern warfare are, however, legion. War is essentially a matter of mobility, whether on land, in the air, or on or under the sea, and here the advantages of the reduction of dead weight by the use of a metal which can give the strength of steel with only half its weight are obvious. A decrease in dead weight may mean, in the case of a bomber, increased bomb load, or in the case of a tank or battleship, heavier armour or larger calibre of guns. One naturally associates the use of aluminium with aircraft, and the modern plane is constructed for the most part of aluminium, or rather of its alloys. Here I would like to digress for a moment, for the benefit of the lay reader. Aluminium enters into the construction of aircraft in four main forms, sheet, extrusions, forgings and castings. Each of these forms represents different and highly specialised processes of fabrication, which in other countries have mostly been developed from existing industries. Again, aluminium is not used in the pure form common to cooking utensils, but in the shape of

ALUMINIUM IN INDIA

The modern Aluminium Rolling Mills of the Aluminium Production Company of India Limited at Belur, Calcutta, have been in full operation for the past year on the production of aluminium sheets and circles, and are fully engaged on war work. These Rolling Mills are on the approved list as suppliers of aluminium sheet to British Standard Specification for aircraft and other purposes. Enquiries are invited for the supply of sheet and circles for the fulfilment of war contracts.

The Aluminium Reduction Works at Alwaye, Travancore State, are now rapidly approaching completion. Full equipment has been received, and is being installed by an adequate staff of technical experts. The production of aluminium for the first time in India at these works will be an acomplished tact in 1942.

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what are technically known as "strong alloys." The British Air Ministry lists no fewer than ninety different specifications for strong alloys of aluminium. These are produced by the addition of a small proportion of alloying ingredients, such as copper, magnesium or manganese, combined with a special fabricating technique—the procedure usually being patented—and followed by subsequent heat treatment to give a strength many times that of the pure metal and in some cases higher than that of steel. The production of strong alloys, and their fabrication in the four forms which we have mentioned above, has been the result of painstaking and extremely costly research, both on a laboratory and manufacturing scale, by the aluminium producers: and it will be realised that they represent specialised and extremely technical processes, in which rigid technical and laboratory control is essential, if specifications are to be successfully met. Before the production of aircraft in India—as distinct from their assembly or manufacture from imported parts—can be visualised, these industries will have to be set up and their problems overcome. The same will apply with added force to the manufacture of aircraft engines and parts and airscrew blades, which are also forged from aluminium.

The mechanisation of modern armies has greatly increased the demand for the metal. Motor lorries and all forms of mechanical transport call for aluminium pistons, cylinder heads, crankcases, and gear boxes, as well as for many other minor parts. The same applies to tanks, whose speed and mobility are increased by the use of light-weight metal in engine, gear-box and track parts. The infantryman uses aluminium in the form of water-bottle, mess-tin, as well as gas mask. The signaller's field telephone and wireless sets are largely constructed of it. The gunner uses it in range-finding and sound-ranging instruments, and also in gun sights and fuse parts. The Lewis gun, still the most useful weapon in and against aircraft, is fitted with an aluminium radiator to cool the barrel. Aluminium powder, in the form of "thermit," is used in incendiary bombs, while the ordinary explosive bomb is largely constructed of aluminium. The Navy has used the metal for many years in various forms, including engine room equipment and deck fittings.

The foregoing gives a brief idea of some of the more important uses of aluminium. However, to us in this country, it is of more immediate interest to consider in what directions the aluminium industry in India can be of greater service to the Empire war effort, and in particular how the large natural resources which India posseses, both in bauxite and in the production of electric power, can best be utilized. Firstly, let us consider the aluminium world picture to-day, from the point of view of the Democratic powers, i.e., the British Empire, the United States and Russia. Within the British Empire, aluminium smelters are located in England and in Canada. These have been, and are being, rapidly expanded to keep pace with the steadily increasing demands of the aircraft industry, but, as we shall explain, have also had to face other large, and possibly unexpected, demands. The United States, prior to the war, did not export aluminium in any appreciable quantity, and it may therefore be presumed that its smelter capacity, while extremely large, was proportional to its normal peacetime requirements. A very large-scale programme of expansion is now under way, but it necessarily takes a certain amount of time to obtain production, particularly when additional power schemes have to be developed: and in point of fact very substantial shipments of aluminium are at present being made to the United States by the Canadian smelters. Russia, up to the time that she also became the victim of German aggression, had made great strides in the production of aluminium, and had developed large hydro-electric schemes with this object in view. However, the advance of the German forces into the industrial regions of the Ukraine and the Donetz Basin, and in particular the destruction of the Dnieperpetrovsk dam, has undoubtedly seriously affected Russian productive capacity. This has meant that the burden of the supply of this essential metal to our ally will now fall very largely on the shoulders of the other Democratic powers.

So far as the British Empire is concerned, the sources of supply at present available are therefore the smelters located in Canada and in England itself. Our command of the sea has hitherto insured immunity from enemy attack for the former, and ample supplies of raw materials for the latter. Moreover, as we have pointed out, the Empire is fortunate in having other natural resources for the production of aluminium, such as those existing in this country, which have also so far been free from the danger of enemy action. These resources will ultimately turn the scale, as any increase in the output of aircraft is dependent upon the ability of the aluminium industry to produce the metal necessary to build them. This, incident-

(*Continued on page* 88)

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REVOLUTION IN THE DRUG INDUSTRY

The achievements of the Indian drug industry during the last three years have apparently been thought so well of by the British Government that special mention is made of them in the pamphlet entitled "Fifty Facts" which their agents are distributing in the United States of America as part of the official propaganda in that country about India. Considering the position in which India found herself at the outbreak of the war and the enormous difficulties that lay in the way of our making for ourselves a wide variety of drugs and medical requisites, it is certainly something to shout about that more than 60 per cent of our requirements of drugs is met by indigenous production. Even apart from the additional needs which the prevalence of the war so close to our frontiers has set up, the problem of meeting our medical requirements without the aid of imports was no light one. For India used to import annually Rs. 220 lakhs worth of drugs and medicines excluding certain chemicals which were used for other purposes also. In fact the total import of drugs, medicines and allied preparations was in the neighbourhood of Rs. 5 crores per annum in the pre-war times. Since the price of these medicines has more than doubled in most cases, the value of the new lines of activities that were called for can hardly be under-rated.

A reference to the articles on the drug industry in India in the earlier issues of the year book will give the reader a fair idea of the intricate problems that were involved. It is needless to cover the same ground again, particularly as the Indian drug industry has left behind the stage of strenuous grappling with initial problems and has progressed to the point at which it can even think of developing an export trade in certain goods in the post-war era. It is perhaps too optimistic to imagine exports in drugs as a considerable contributory to the large export trade which this country is always bound to enjoy, whatever may be the nature of the changes in world economy and international trade. But it is not improbable that India will find it easy to acquire foreign custom on a large scale for the kind of substitute that she has been able to prepare, in the stress of present times, for cod liver oil. It is well known that the moment Norway came under the Nazi heel, one of the essentials of the rearing of children was denied to humanity. The need in India for cod liver oil was all the greater since the larger proportion of the well-to-do classes is vegetarian in this country. It was the Medical Stores Department which stimulated the production of Shark Liver Oil in India. Shark liver oil, it was found, contains vitamin A in a much higher percentage than cod liver oil. By diluting shark liver oil with a good quality groundnut oil, a satisfactory substitute has been obtained. It is interesting to note that this is not altogether a new industry since it was established 18 years ago by the civil surgeons of Cannanore and Cochin.

To return to the question of drug manufacture as a whole, the change in the position which was described at the outset may be easily appraised when it is mentioned that the Medical Stores Departments to-day effect local purchases in India to the value of nearly Rs. 2 crores, which compares with Rs. 15 lakhs in 1938-39, Rs. 25 lakhs in 1939-40 and a little over Rs. 1 crore in 1940-41. It may be inferred from this that one of the principal obstacles in the way of the development of the Indian drug industry in pre-war times was the indifference of the Medical Department to the indigenous sources. Once a position arose in which the Department had to make the best of the sources available at home, the industry obtained the requisite stimulus and encouragement and what appeared to be well nigh insoluble problems in the past have been energetically tackled and successfully solved.

The problems in respect of the major items were given in the earlier issues of the Year Book. It should suffice here to list briefly the more important of the drugs, whose production at home represents a creditable achievement.

Amongst these may be mentioned Chloroform, Chloral Hydras, Bleaching Powder, Acidum Aceticum Glaciale, Acidum Carbolicum, Acidum Cresylic for the manufacture of saponified Oresol, Lysol, Oleum Terebinthinæ, Acidum Trichloraeticum, Ammonium Chloride B. P., Ampoules Gum Saline, Amylis Nitris B. P., Carbonei Tetrachloridum, Antimosquito Cream, Injectio Bismuthi, Liquor Formaldehyde, Oleum Anisi, Sodii Tauroglycocholate, Tauroglycocholate, Stains, Xylol, etc. Anæsthetic ether is now being produced at the rate of 15,000 lbs. a month compared with about 1,500 lbs. per month before the war.

The manufacture of Caffeine Citras in India has also been encouraged by the orders placed by the Medical Stores Department. This drug was formerly extracted from coffee beans by Dutch and German chemists, who sold the extracted coffee as a purified form of coffee free from any harmful drug.

Hence the Dutch and Germans were able to supply Caffeine in India at a price with which the Indian manufacturer was unable to compete. Tea planters in India are now placing tea waste at the disposal of Indian firms instead of exporting it. These firms are therefore able to manufacture caffeine at rates which are lower than those at which it is obtainable elsewhere. A new and stable industry has thus been established.

Among other items recently manufactured on a large scale in India are Potassii Permanganas from Indian manganese ore, Cresote from Indian wood distillation products, Nikethamide, a derivative of Nicotonic acid etc. Liquid Glucose was also for use in the manufacture of textiles. It is now produced in large quantities in India from Indian starch.

The manufacture of Alkaloids in India is still in its infancy. Strychninæ Hydrochloridum is the only alkaloid which was produced on a large scale and the only one of which India has so far a monopoly. Emetine Hydrochloride is now produced from Ipecacuanha grown in Bengal. The manufacture of Atropine sulphate has been recently taken up and the Medical Stores Department has placed a trial order with a firm manufacturing it.

Large amounts of Ethyl Chloride are being produced in India and glass containers for this item were for a time difficult to obtain, but a firm in Calcutta has now produced a container which is considered satisfactory.

Against an urgent demand last June over a thousand pounds of Morphine was manufactured within a few months. The manufacture in India of tinctures, liquid extracts and other spirituous preparations now exceeds the total of approximately 175,000 gallons per annum.

The Medical Stores Department has endeavoured on many occasions to stimulate the growth in India of many of the Pharmacopoeial drugs. It has also utilised the species of many vegetable drugs already growing in India in place of the British Pharmacopoeial variety of Gentian, Datura, Rheum, Lobelia, etc. This was done after verification that the therapeutic action of the drug was similar to that of the pharmacopoeial species of the drug.

The Medical Stores Department has also helped the extensive production in India of Oleum Hydrocarpi, a vegetable oil made as a cottage industry in Malabar. This oil is the chief therapeutic agent in the treatment of leprosy and was developed by the Medical Stores Department who encouraged the use of this oil and installed in their Madras factory the largest plant in the East for the manufacture of the Ethyl Esters of Hydrocarpus oil. The oil previously was expensive but is now as cheap as any of the ordinary Indian vegetable oils.

The manufacture of essential oils has not been taken up extensively. Apart from sandalwood oil there has been no widespread manufacture of essential oils in India. The Department by placing orders with one firm has been able to obtain certain quantities of peppermint oil and dill oil. The Medical Stores Department has been using the Indian manufactured Eucalyptus oil, although it is below the B. P. standard in its content of cineole, and is one of the largest customers of this industry. Large quantities of fixed oils, such as Oleum Ricini, Oleum Archis and Oleum Sesami, are produced on an extensive scale in India.

It is not only in the sphere of drugs that such reemarkable progress has been achieved, but also in other spheres which are not less necessary for the proper functioning of the Medical Department. The work done in regard to blood plasma is well-known.

In surgical instruments, and appliances and scientific apparatus, considerable headway has already been made by Indian firms which deal in these articles. Several firms are being encouraged to take up the manufacture of articles which were hitherto imported from abroad. A striking instance is that of a firm in Calcutta

which is now engaged in manufacturing Haldane's Oxygen outfits, field pattern.

Rubber goods, such as waterproof sheeting, hot-water bottles, air cushions of good quality, are now obtainable in India. Glass of many varieties and sufficiently pure chemically to be used as ampoules for biological products and in various designs for laboratory products and in various designs for laboratory work is manufactured. There are two or three important glass manufacturers in Calcutta who make thermometers and glass stoppered bottles. All kinds and sizes of bottles are being made including stoppered bottles by several firms in different parts of the country. Improvement has been found in the resilience of samples of rubber tubing manufactured by a Calcutta firm. A firm which produces waterproof sheeting for the first field dressings and for hospital use, hot-water bottles, rubber corks and ice-bags is erecting two extra mills for work for the Medical Stores Department.

A new and up-to-date factory for the manufacture of earthenware articles has been eestablished and the Medical Stores Department have obtained large quantities of earthenware articles for hospital equipment from this source.

One of the biggest enamel works in India is being called upon to manufacture enamelware for the use of the Medical Stores Department.

Arrangements have been made by the Director General, Indian Medical Service, for the production by private firms in India of 150,000 packets of 3-yard absorbent gauze. These packets were formerly made exclusively in Medical Store Depot factories.

It will be evident from the above that under the stress of war, India is acquiring the ability to tackle her medical problems adequately in the post-war period. She has shaken off her dependence on external sources of supply. She has developed her internal resources; and in the future it will only be a question of increasing the scale of productive operations. And not least of all, she has glimpsed the possibility of developing an export trade in some of her drugs.

(Continued from page 86)

ally, will explain the particular attention which has been paid by the Royal Air Force to the large German aluminium works at Rheinfelden and Neuhausen. It will also be clear that the greatest immediate service which the aluminium industry in India can render to the Empire war effort is in the development of the existing natural resources which are available for the production of aluminium in this country. Towards this end considerable progress has already been made.

The Geological Survey of India has over a number of years carried out a very valuable and comprehensive survey of the nature and extent of the Indian bauxite deposits. And on the practical side, some four years ago a commission of experienced and impartial experts spent some months in this country, in the course of which they visited all the known bauxite deposits and investigated the various sources of electric power, both steam and hydro-electric, with a view to establishing an industry for the production of aluminium in India. As a result of their investigations, and with the co-operation of Indian industrialists, plans were made for the construction of an aluminium smelter, having an ultimate capacity of 5,000 tons per annum, and using Indian bauxite. In spite of wartime difficulties and delays, this project is now nearing completion. A large works has already been constructed at Alupuram, near Alwaye, Travancore State, where power will be supplied from the Travancore State hydro-electric system. All imported equipment has been received, and its installation is practically complete at the hands of Indian technicians and labour, advised by a staff of Canadian technical experts.

Concurrently with the production of aluminium, the equally important factor of its fabrication in a form usable by the consumer has not been lost sight of. An up to date rolling mill, fully equipped with modern machinery for the production of aluminium sheet, has been erected at Belur, near Calcutta. This mill has been in operation for some considerable time, and has supplied many hundreds of tons of aluminium sheet for India's vital wartime requirements, including aircraft construction and repair.

The primary object which will be attained by the production of aluminium from indigenous sources will be to relieve this country from its present dependence on outside sources of supply. This will mean that India will be self-sufficient in the production of this primary metal and will be free to respond to the demands which may be anticipated as a result of the increasing speed of rearmament in this country without drawing upon outside production which is already needed by the rapidly expanding aircraft industries of England, Canada and Australia. India, with its present degree of industrialization, may be regarded as the armoury for the forces of the Near and Middle East and indeed of the whole Eastern Group. It possesses large mineral resources, many of which are already being utilized, workshops and factories with their skilled craftsmen, and a vast and still comparatively untapped reserve of manpower. The increasing output of munitions of all kinds, which has now extended to the construction of tanks, armoured vehicles, ships and aircraft, coupled with the expansion of the already important steel industry, will all make demands on the aluminium industry which it will be possible to meet from sources within this country. Should a demand arise for the more specialized branches of aluminium fabrication, the industry will be prepared to meet it. And eventually, as the production of aluminium in India increases, there should be no reason why any surplus should not be exported to other parts of the Empire, such as Australia, and thus relieve the demand on the British and Canadian producers.

In conclusion, the probable post-war position of the aluminium industry in India may be briefly considered. The war, like its predecessor, has given a considerable impetus to industrialisation in this country. And any expansion of industry, coupled with a rise in the standard of living, invariably results in an increased demand for metals of all kinds, of which aluminium is not the least. Apart from this, provided that a reasonable degree of protection and encouragement is given to the industry in its initial stages, there is no reason why, with the natural resources at its disposal, India should not become the main producer of aluminium for the East. As we have pointed out, prior to the war, a considerable export business in finished goods was built up with countries in both the Near and the Far East. With the production and fabrication of aluminium in this country in place of metal previously imported from abroad, coupled with the strategic location of India as a shipping centre and the existence of well-equipped factories capable of turning out all classes of finished goods, it would seem probable that the export of aluminium should be capable of considerable expansion, apart from the probability of increased consumption in India itself.

WARTIME PROGRESS IN CHEMICAL INDUSTRY

Among the vistas opened up by the war in India is one of endless development for chemicals. The coming of war produced opportunities, and inventive energies were soon turned to the making of chemicals. Enterprise revived, and the present position of chemical shares on the stock exchanges is one indication of prospects for a fast-growing industry.

For over a year the trade in chemicals of various kinds is subject to official control. Limited supplies of essential drugs and chemicals provide the explanation in any case. The direction of consumption is not peculiar to medical supplies. The textile industry's chemicals are now subject to control as Government which has prohibited exports has turned to the advantageous disposal of supplies. Sulphuric acid is subject to control like chrome compounds. Estimates of requirements of caustic soda and bleaching powder vary but the strain on home production is obvious. In the war period dyestuffs have been a problem, because indigenous mineral or other khaki dyes have not been enough. The textile industry has worked with limited stocks and enhanced costs. The chemical manufacturer also has been hampered by the same difficulties since sulphur imports fell. No figures relating to output of sulphate of ammonia appear. Imports have fallen steadily, and the fertiliser shortage is but one aspect of a general problem of deficiency.

If there is no acute shortage of bleaching powder after the increase of home production the demand for explosives etc. has been steadily rising. Export control in Britain has made Indian industry conscious of what must be done, and the present problem is viewed largely as one of developing home production. Surveys of available sources e.g. the salt bitterns and the widespread occurrences of reh have been made, and once again attention has been turned to the possibility of producing phosphates. The shortage of fertilisers has induced many to look to oilcake. That chemical manufacturers have put up a fine show in recent years is proved by profit figures. Additional capital has been provided, and production has increased. More than one industry in 1942 has been handicapped by shortage of chemicals, and falls in match and paper production are attributed to such difficulties.

The increase in glass production, especially, in the U. P. is traced to the larger supply of essential soda ash and the soap, paint and other Indian industries have made steady progress since Indian chemical production was increased. War materials like toluene and acetone are obtained at present from private sources by Government for its munitions factories. As in the case of wattle bark Government interference was sought by the tanning industry in the interests of war production. The Indian shoe factories have to produce millions of boots and Cawnpore is now more important than Britain for Allied forces. There is no control of fertilisers but prices are held as in the case of tanning compounds. After the amendment of the chrome compounds order there has been little to indicate the acute need for chemicals. That Soviet Russia wants drugs and instruments of India is widely known as also that the local response to official demands has been adequate. The high cost of salt has been a disadvantage for some time but the remarks made as to revival of imports from abroad are now important. The Red Sea is wholly safe and salt can be had so as to release supplies for chemical manufacturers.

The company reports appearing in the course of 1942 reflected a measure of optimism. Progress at Mithapur has been reported and actual production is in sight. Sales arrangements have been made in the case of Tata Chemicals and consumption prospects are rated favourable. Chronic scarcity of drugs and chemicals has not obscured the increase in home production of acids and sodium compounds. The statistical black-out compels one to lean details out but the growth of output in the case of bleaching powder is typical of what is going on. The advance of the plastics industry is rather slow but shellac is going into new uses and moulding is now well-established as an urea plant is to be set up. Caustic soda derived from soda ash is no longer in short supply and the production of glycerine is largely based on the progress of chemical manufacture. The development of nitre production cannot be measured but the growth of bomb production has been fully described in a semi-official account of India's supply activities.

Nitroglycerine must be going into shells and bombs made in large quantities in railway workshops etc., and the Ordnance laboratories alone may be able to recount what is being done and how.

Nothing has taken place to show that tests with the pilot plant are going to give India a rayon industry. Disappointment will be tempered by the satisfaction registered in regard to the growth of textile output up to September, 1942. There has been no progress as wood pulp and newsprint is a more acute problem than woodpulp, imports of which have fallen owing to the war.

The shortage of camphor is one of the results of the war with Japan. The shortage of perfumes, cosmetics etc., has created new opportunities the existence of which will not be overlooked by India's chemists. Material advance is possible owing to the stoppage of imports and usual considerations of quality and price are latterly of secondary importance.

The home production of acids is now regarded as respectable. Hydrochloric acid, nitric acid, etc., are produced in larger quantity. Metallic compounds like aluminum sulphate are produced in India. The shortage of experts and trained workmen has often been referred to and the present position is determined by labour rather than capital in the view of many. The actual development of coal as a source of chemicals has not been assisted by the war but the by-products now available include naphthalene and benzol. Coal tar varnishes and paints are also produced at coke distillation plants in India at present.

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Metallurgy has been aided by the chemical industry and copper has been hardened by using beryllium. In a guide to further development prepared by two scientists the position of mining in relation to chemistry has been indicated, and the questions raised last year by the discussion that followed should have shown that there are several obstacles to the rapid development of the industry. The manufacture of substitutes for patent medicines etc. has been frequently reported but the main line of development has been long ago indicated. Mr. J. N. Lahiri asked in September for special support for investigation of coal as the source of chemicals though interest in non-ferrous metals has for the time-being reduced the value of the argument.

The list of companies producing chemicals and drugs is not imposing but possibilities of integration have to be examined. The post-war position will have to be ascertained and assurances to Indian makers of calcium carbide cannot be the limit of State aid to industry. The potential market for fertilisers is larger after the grow more food movement was launched. The industrial side of chemical production is not more important than help to rubber and tea estates, called upon to make good deficiencies in supplies for the Allies after the loss of the Dutch Indies.

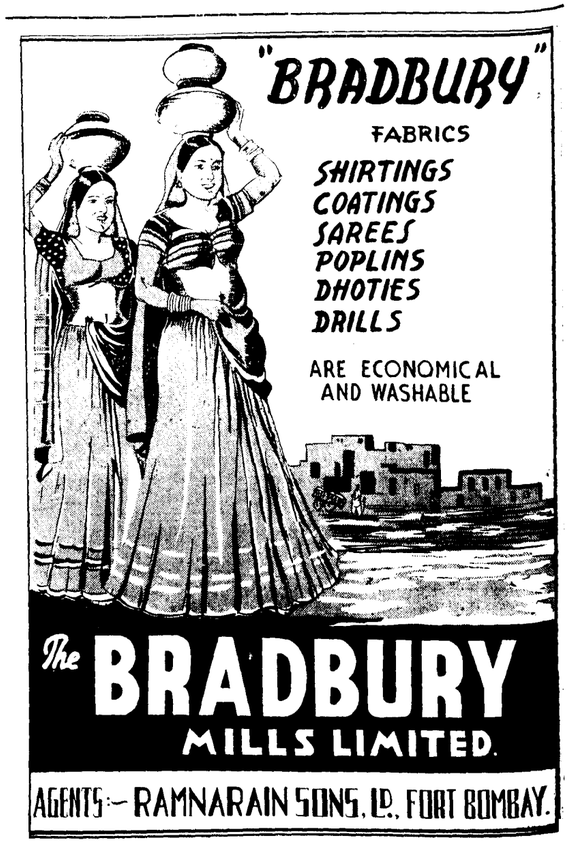
Basic slag has received little attention but it has been noted already that the chemical industry can be developed in the environs of Jamshedpur. Producer gas development may be properly called as part of chemistry's contdibution to the solution of petrol shortage. But power alcohol production has been delayed in spite of the Grady Mission's specific recommendation.

If the general public has not grasped readily the importance of research for the sake of adding to the supply of sulphur, fertilisers, for the production of cellulose and new materials industrialists as a class have not neglected the fundamental applications of science to industry in India. It is not only the introduction of Control orders regulating prices and distribution that have made chemicals of the first importance for industry. That Government came to the rescue by providing essential chemicals from its own new factories is as well-known as that it exhibited great interest in the extraction of tolune for the first time. That Government is actively interested in the production of indigenous pharmaceuticals, that it arranges for the receipt of various chemicals from the U. K. and supervises the trade in more than one product is certainly a prime requisite of war-time progress in chemicals. That chemical manufacture in India to judge by the latest reports of the two big companies has made limited progress, at any rate not up to expectations, may be due to other factors than the Government's lack of interest. In the factories of the South the production of caustic soda and chlorine has increased since 1941 and it has been noted also that in the South the possibility of producing sulphuric acid from pyrites is being investigated.

The position as regards sulphur has improved to the undeniable satisfaction of the Indian sugar industry and to-day if Baluchistan sulphur is not on the market the general opinion held is that the interest born of the war in the chemical industry is largely due to a desire to obtain supplies needed for various other industries. Caustic soda, soda ash and various acids do not enter into direct consumption but are needed only in industrial processes. It is then not surprising that the less-known minerals are receiving attention for the first time in view of the basic connection between minerals and chemicals. The decline in imports of chemicals during the year 1941-42 argues scarcity, only rectified in part by larger indigenous supplies. In the war period the loss of trade with the Reich has created problems of an unusual nature for the chemical industry.

As the Tariff Board report indicated heavy chemicals were not overlooked long before the war came and the Ordnance Department at any rate retained a lively interest in Indian manufacture. Before the war India was making many acids, many salts and alcohol in addition to drugs and medicines. But the war revealed the danger of dependence and for two years and more there was no industry that did not encounter difficulties arising from the shortage of chemicals. The leather trades were hit by the want of articles for chrome tanning. Setting up of the first factory for bichromates excited more pleasure than the initiation of more ambitious projects. The manufacture of a dozen new chemicals is the first but not the only departure in chemical production. It is widely believed that after the Geological survey's utilisation branch gets going the country will be able to use available raw materials for the making of potassium compounds. Coal like salt is the source of many chemicals and the treatment of coke-oven gas for the recovery of various products is held desirable. Since sulphate of ammonia is a byproduct of iron and steel plants the familiar link between minerals and chemicals is fully exposed. Many important compounds can be made with the help of minerals that occur in this country. And in regard to power alcohol at any rate fuel aspect is now as important as any other aspect. It is not surprising that the import figures like the production statistics are not made available as usual. But it is known that production has progressed and the chemical industry is diversified. Ordnance production and munitions output have grown in consequence, and the occasional mention in the press of various expansion projects and additions to existing production have sustained the impression that the Commerce and Supply Departments together have pursued the subject of supplementing chemical production with direct advantage to the war effort here.

The absence of any specific discovery must not produce the impression that research has not paid. It has never been neglected e.g. in regard to synthetic rubber and reclaimed and war has been the chief factor in the beginning of benzine and toluene production. Production in India has been encouraging and as the coalfields offer opportunities many coaltar derivatives for industry are being produced in India. Phenol and cresol have been made in India and coke plants are discharging functions of a varied nature. If aniline dyes and fine chemicals have not become prominent it is known that special bitumen compositions made of coaltar have been produced for the first time in India. It is not necessary to linger on what may come but one must describe what has been done by way of conserving chrome compounds for the sake of tanners and the encouragement given to acetone produced by more than one factory at present. If progress in the paint industry is limited by the war there is special interest in titanium oxide at present. The possibilities of nitro-cellulose paints have been canvassed at the same time as shellac has been used for many lacquers. It is not necessary to detail the progress made by the growing plastics industry but shellac is finding new uses at home, for moulding powders, and in combination with rubber.

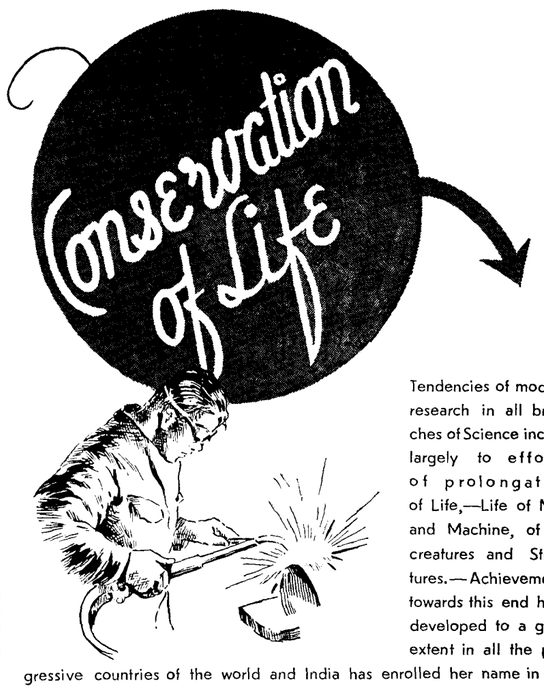


For twenty years and more modern chemistry as the basis of industry has received scant attention in India. India's coal has been put to indifferent use so far, and the consequences of chemical shortage, reflected in various control orders, the latest relates to chlorate of potash—are deplored widely. India's dependence on imports of sulphur caused a difficulty which has to be removed by the development of the Baluchistan deposits. To say that India was getting about a third of the sulphur required by industry from her home out-put is to indicate the magintude of the problem for solving which the sulphuric acid makers are expected to make a contribution.

As soda ash is, comparatively speaking, plentiful certain industries have benefited, but others have found that war profits are reduced greatly by the usual difficulty in regard to chemicals. Industrialists are now increasingly alive to the danger of a giant monopoly stretching into India but they are so far diffident about what can be done at home. It is true that the pioneering has yet to take place but in recent developments referred to one may see the seed of much fruitful growth. The field of exports invites less attention than presumed. What is now more important is an assurance of development under tariff protection. The manufacturer in India has not only to contend against excise administration but also the fear of imports. If development is to take place assistance in regard to plant alone is not demanded by the circumstances of India. The country has a right to expect protection, if local resources are utilised for satisfying the home market and it has to ask for conditions promoting the growth of a native industry. Heavy chemicals must be said to satisfy the claim for a full term of protection—seven years or more for the development of fertiliser production, various industries like aluminium production, and for the drugs and medicines that have helped the Defence Services most. Indian chemical manufacturers if impressed by wartime progress are none the less conscious of difficulties that may arise in the future. Advocacy of distillation of liquid fuel from coal has often been heard in the past year and a special guarantee is desired. Synthetic rubber's possibilities have also been mentioned after the loss of Malaya but whatever might be attempted must be done only under guarantee. If wood and coal have provided many things besides fuel it has been due mainly to the chemical industry's work. The work has to be rewarded and the retention of customs surcharges is only a means. Bounties may be more justified in the case of chemicals than of any other industry and all other industries may be properly called upon to support one that deserves well of all supporters.

The most striking departure in the field of chemicals is not the recovery of small concerns from the depression peculiar to them but the establishment of many new plants. The advantages of wide dispersion have been anticipated. A decision to erect many new plants to be set up with lease-lend aid at the instance of Government will help but industrial development must cover all industries. In Lahore and other towns new enterprises have appeared recently and the present dependenc on India of countries that imported goods previously from Russia and Germany is not the only advantage.

Provincial Governments have it within their power to help by bounties and technical advice. Each Province can help for it is to the interest of all to develop resources hitherto neglected. The decline in imports this year in nearly all categories creates an unusual opportunity similiar to the demand reported from African markets for Indian chemicals and drugs. Sulphur has been enquired for from Uganda and India must be in a position to help. South Africa and Australia are developing chemicals alongside of their mineral industries. If mining companies allot a percentage of annual profits, or better still promote chemical enterprises of their own, the country would feel satisfied. Many other developing industries e.g. glass and paper have a right to expect adequate home supplies of chemicals, largely because they have to help Government at once with increased output. From whatever angle one looks, the industry seems eligible for protection without investigation. That assurance is required by Indian interests as distinct from British in Indian interests because much difficulty in getting plant etc. has been reported. Had fiscal advantages been promised well in advance, it is obvious that the difficulties would not have arisen and industrial progress too would have been greater than at present.

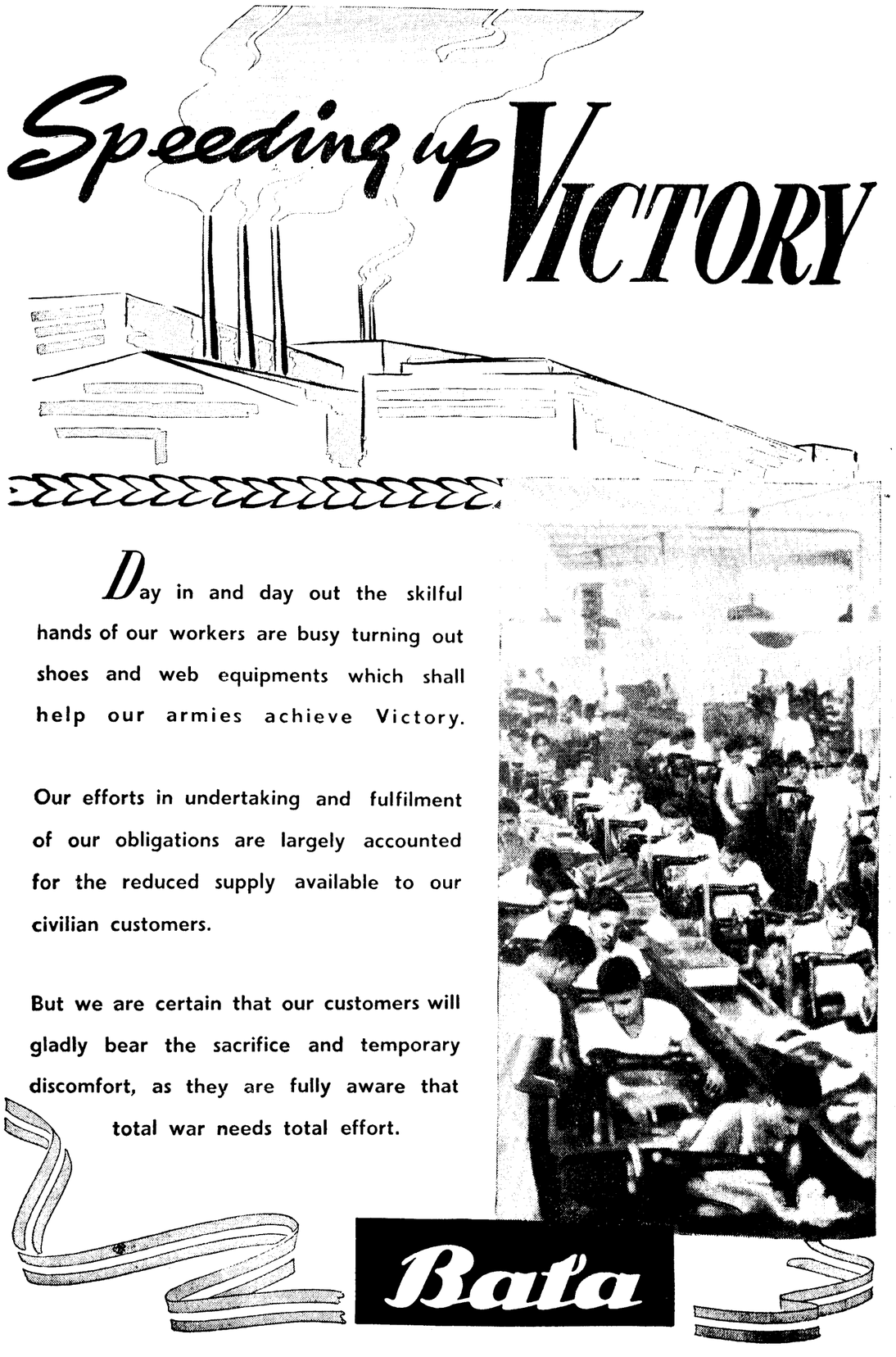


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INDIA'S MINERAL RESOURCES

Though India has a few well-developed major industries dependent on minerals, little can be said of the exact extent and variety of the mineral resources of India. The Geological Survey of India, though it was established as early as 1846, has never been enabled to function as well as similar surveys in other countries of the world, not to speak of its counterpart in Soviet Russia, where it has an impressive achievement to its credit. The work of the Geological Survey in Russia was realised by everyone in authority to be the essential preliminary and the basis of a large part of the successful five year plans to which Russia owes her industrial eminence and her capacity to withstand the might of the German forces. It has been recently estimated that an average of 500 sq. miles can be accurately surveyed each year and that the life of the average survey in the field is about ten years for geologists. Since roughly 100 geologists in all have been so employed in India since 1846, theoretically only about 500,000 sq. miles could have been examined in any detail during the life of the Geological Survey of India. And there remain over a million sq. miles still to scrutinise.

It may be easily guessed that the area to which the greater part of the labours of the survey has been devoted lies in places like the Jharia and the Raneegunge coalfields and a few other areas of economic and technical importance. Work in these areas has certainly led to the development of industries like iron and steel and coal. The cement industry may be said to belong to the mineral group of industries, though here it would appear that not much of scientific or technical work is required to bring an industry into being. For a modern industrial nation, the range of minerals required is so wide and their extraction from the earth's crust is so complicated a process, that it is idle to think that the leeway in the industrial sphere can be made with the existing indifference to an adequate survey of our mineral resources. So far, only the two world wars of this century have had any effect in overcoming the smug inertia of the government and inducing them to take a few more steps forward in the exploration and the utilisation of India's mineral resources. Enough has been done however, to give us a glimpse of the variety of our mineral resources and to sustain the hope that, though India may not compare with a country like the United States of America which has a rare degree of self-sufficiency in this respect, India's industrial development will not be too heavily handicapped by a lack of mineral products essential for modern industrialisation. Real progress can be made, as Dr. Fox has pointed out in a recent address, only when the Geological Survey of India is manned according to the same standards of quality and number of personnel as Soviet Russia has set for herself during the last two decades.

It will be seen from the above that an article dealing with the mineral resources of India will necessarily fall into two divisions, one dealing with the major industries like iron and steel and coal, which are already established, and the other, with a variety of mineral products whose existence in various forms in the country has been already detected, but which, at the moment, only suggest possibilities of significant development in the future.

Of the major industries like coal and iron and steel not much need be said here, as they, doubtless, will form the subject of special lengthy articles dealing with them in all aspects. But to considering them from the standpoint of mineral resources is somewhat different. Of iron and steel, it may be said India has vast resources.

India has vast resources for the iron and steel industry, the ore deposits of Singhbhum and the neighouring Orissa States having resources calculated as not less than 3,000 million tons of very high grade ore. Indeed, a competent authority estimated that 20,000 million tons of ore existed within a rectangle having Calcutta at its north-eastern corner, and within a distance of 400 miles from the city. There are, besides, excellent iron ores in other parts of India, particularly in Mysore and Madras, awaiting development. The Tata Iron and Steel Company was the only steel producer until 1936, but within the last four years the Mysore Iron and Steel Works and the Steel Corporation of Bengal have entered the field. The total pig iron production is now in the neighbourhood of 2 million tons and the steel production 1 million tons. There are several small furnaces and re-rolling mills in various parts of the country contributing their small quota to the steel output. Since the beginning of the present century the annual production of iron-ore in India has risen from 65,000 tons to 2,743,675 tons in 1938, representing 1,539,889 tons of iron smelted. India is now the second largest producer of iron and steel in the Empire, excelled only by the United kingdom. Her reserves of ore are about three-quarters of those of the United States and are of better quality, than the bulk of the American deposits. The ores are believed to have been originally banded haematite quartzites, the quartz of which has been bleached and replaced to some extent by haematite. Typically they run about 64 per cent. of iron, sulphur is usually beolw 0.03 per cent., and phosphorus varies from 0.03 to 0.08 per cent. Titanium is low. As these reserves are much larger than the available amount of coal suitable for making metallurgical coke, it would seem that India can, sooner or later, spare great quantities of ore for export. In 1938, 264,151 tons of ore were exported to Japan. In that year, the total exports of pig-iron from India were 525,254 tons, of which 323,046 tons went to Japan, and 129,824 tons to the United Kingdom.

We may now turn to a consideration of the ancillary minerals required for the steel industry.

The auxiliary minerals required for the steel industry are ores of manganese, chromium, titanium, molybdenum, nickel, cobalt and tungsten. We have domestic resources for the first four, while tungsten can be obtained from Burma and China which are the world's suppliers of wolfram. It is said that Nepal contains rich deposits of nickel and cobalt, but that country is practically unexplored.

It is true that throughout the Peninsula, which is so largely occupied by ancient crystalline rocks, quartz-haematic and quartz-magnetic schists are very common, but most of these occurrences consist of quartz and iron-ore so closely interbanded that only a highly siliceous ore of low grade (up to 40 per cent. iron, can be obtained, and magnetic concentration has not been successful, owing to the intimate intermixture of the quartz, magnetite and haematite.

For a number of years, however, haematite ore-bodies of great size and richness have been recognised in a belt running through the Singhbhum district of Bihar, the Eastern States, and Orissa, and constituting what is one of the most important groups of iron-ore deposits of the world.

It has been calculated that there are 3,600,000,000 tons of this high-class haematite available, forming the upper portions of great ridges, rising 1,500 ft. or more above the plain, along which for many miles the ore can be cheaply quarried in benches, by gangs of unskilled labour, and loaded straight into trucks, little or no selection being necessary.

At, for instance, Tata's Noamundi Mine, the average day's run for ore is 62 per cent. iron, and they can arrange consignments to the works of anything up to 69 per cent. iron, the latter containing only 1 per cent. of impurities, theoretically pure haematite containing 70 per cent. of iron and 30 per cent. of oxygen. Ore containing less than 60 per cent. iron is not used by the two large producing companies; the Mysore Iron and Steel Works use 55 per cent. to 64 per cent ore.

The other great mineral industry to be considered is coal. It is well known that India is fairly well supplied with coal, but it is unequally distributed and more or less concentrated in the eastern part of the country. The best known coals, i.e., those of the Bengal, Bihar and Central Provinces fields, are of Gondwana (Permian) age, while those of Assam, the Punjab, Rajputana and the north-west are of early Tertiary age. The total reserves of Gondwana coal have been computed at about 60,000 million tons, of which perhaps only a third can be worked. Only 5,000 million tons are known to be of high grade, a third of this amount being considered to be suitable for conversion into coke for metallurgical purposes. Though the Tertiary fields of Assam contain and produce good coal, much of it contains high sulphur not easily removable by any cheap process known at present. No reliable estimates of the reserves of Tertiary coal are available, but the total may perhaps be put at 5,000 million tons.

The total output of Indian coal in 1938 was over 28 million tons of which at least 12 million were of coking quality, though less than 3 million tons were actually converted into coke for metallurgical work. A small part of the low grade coal produced is converted into "soft coke" by the crudest of methods and its sale as a domestic fuel is aided by propaganda for which money is raised by means of a cess.

The development of other industries based on coal has been slow, though some progress has been made of late in respect

of the use of by-products of the coal industry. Important countries devoid of sufficient resources in natural petroleum are now producing motor fuel from coal. Since 1935 Germany has met more than half her normal peacetime requirements from this synthetic fuel. England and Japan have also adopted the same methods, the industry being heavily subsidised by the government. It is high time that India, whose resources in mineral oils are poor, took steps to utilise her coal resources for the production of liquid fuels by these well-established methods.

As hinted already, India's resources in petroleum are insignificant compared to the world's. Her total output in 1938 was about 87 million gallons valued at 165 lakhs of rupees—a mere one-tenth of one per cent of the world's production. Oil-fields are worked in Assam and the Punjab but there is yet some scope for finding new fields and new deep horizons in Assam, Punjab, Sind and Baluchistan. Prospecting for petroleum is an expensive business and it is no wonder that powerful foreign interests have secured a virtual monopoly for petroleum in India.

The cement industry is today one of the major industries in India. The manufacture of cement started in India on a large scale in 1914, and since then the progress of the industry has been rapid. At present there are about 20 companies in operation, with a capacity of well over a million tons annually.

In most cases the limestone used belongs to the Vindhyans and can be so selected as to contain a considerable amount of the clay constituent required, the remainder, if any, being made up from shales associated with the limestone, or from local surface silts. The small amount of gypsum necessary, 2 to 3 per cent., comes from Khewra in the Punjab, or from Jodhpur State.

Indian cement is made in several grades and is of such high quality that it has almost ousted imported cement. With the abundance of bauxite in India, there is likely to be an increasing production of aluminous rapid-hardening cement. India's great reserves of magnesite will also be invaluable in the manufacture of special cements.

The aluminium industry has still a long way to go to be classed with cement or coal or iron and steel. For so large a part of its operations is directed to rolling imported ingots. But there can be no question of the resources of India for the development of our aluminium industry of her own.

About 200,000 square miles of India are covered by Deccan Trap, basalt which under suitable climatic conditions decomposes to form laterite. Laterite is a mixture of baxite (aluminium hydroxide) and ferric hydroxide, with some free silica and titania.

When the ferric hydroxide, silica and titania are low enough, the bauxite can be used commercially.

The production of Indian bauxite is chiefly from Katni in the Jubbulpore district, C.P., and Kaira district, Bombay, and for the last two years has been about 15,000 tons. Large deposits are known in Bilaspur and Mandla districts and Sirguja and Jashpur States, C.P., Kolhapur State, Bombay, Ranchi district, Bihar, and Jammu, Kashmir, and there are doubtless others still undiscovered, as bauxite is an ordinary-looking, clay-like rock, and is often covered by a layer of the ferruginous laterite.

It is believed that Indian bauxite is at present largely used as a filtering material in petroleum refineries, and for the manufacture of alum. Its utilisation for the preparation of aluminium, refractories and abrassives is now being undertaken.

Once these industries are dealt with, we pass to the other group in which, either there are just possibilities of future development, or India is content to export minerals as raw materials to other countries without utilising them in manufacture at home. The latter kind is assuredly the more important in the present state of the national economy. And it may be apposite to speak of manganese ore as the most important of this group of minerals.

MAGNESITE

Magnesite production commenced in India in 1902, from the "Chalk hills" in the Salem district, Madras, where the quantity of the mineral is practically inexhaustible; it occurs in a network of veins over an area of 4½ square miles, standing up to a height of 140 feet in hillocks, from which it is quarried.

It is calcined to form either 'caustic' magnesia at a temperature of about 800° C. or 'dead burnt' at about 1,700° C. Caustic magnesia is the principal ingredient of 'Sorel' or 'oxy-chloride' cements and dead-burnt magnesia is a refractory used to line the furnaces in the basic steel process, for which the bricks made in India are stated to be superior to the Australian bricks which they have supplanted.

The Indian production is about 26,000 tons annually, of which roughly 2,500 tons is from Mysore and the remainder from Salem.

MANGANESE-ORE

Deposits of manganese-ore are widely distributed in the ancient rocks of Peninsular India, and since the beginning of the century India has shared the position of the world's chief producer with Russia, sometimes one leading, sometimes the other.

As the demand for manganese is governed by its uses in the manufacture of steel, it is subject to great vicissitudes as the heavy industries rise and fall with the calls from trade and the manufacture of munitions.

This was particularly the case during the world trade stump in the years 1930-3, when India's production dropped to a little over a fifth of that of five years previous, with a value of less than one-nineteenth.

Recently, however, there has been a recovery, with the result that the production of India, for the first time in the history of the industry, exceeded one million tons in 1937.

The United Kingdom, Japan, the United States and France, have been the principal customers.

The principal areas in which manganese-ore is mined are the Balaghat, Nagpur and Bhandara districts in the Central Provinces, Sandur State and Vizagapatam in Madras, the Panch Mahals district in Bombay, Singhbhum district in Bihar and the adjoining States of Keonjhar and Bonai.

The ores are mixtures of psilomelane, braunite, and pyrolusite, and tend to form hills, so that quarrying is easily and cheaply carried out by gangs of unskilled labour. Many of the ore-bodies are of great size. The main disability under which the industry labours is the distance of the larger deposits from the nearest sea-ports.

MICA

India is the world's leading producer of sheet mica, which is mined mainly in Hazaribagh and Gaya districts in Bihar and Nellore in Madras, and to a minor extent in other districts in Madras and in Tonk State and Ajmer-Merwara in Rajputana, about 80 per cent. coming from Bihar and most of the remainder from Nellore. This pre-eminence in the world's markets is due largely to the excellent quality of the so-called "Bengal ruby" mica of Bihar, but also to the great manual dexterity and cheapness of the aboriginals, mainly women and children, who trim and split the mica with crude soft-rion sickles (or shears in Nellore). So much is this the case that there is an appreciable import of block mica into India, to be re-exported in the form of splittings. Mica has been used in India for centuries for decorative and medicinal purposes.

The mica occurs as "books," giant crystals which have been found, exceptionally, as large as 10 feet in diameter, in great veins of pegmatite traversing mica schiests. The mica, which is muscovite, occurs with felspar and quartz, and other minerals such as beryl, which from Ajmer is exported as an ore of beryllium.

The export of mica from India amounted to 297,343 cwts. in 1937, most of it going to the United Kingdom and the United States.

KYANITE AND SILLIMANITE

Kyanite and sillimanite (and andalusite) are sillicates of alumina, all of which, when heated sufficiently highly, change to 'mullite.'

Mullite is a valuable refractory material for the construction of furnaces, especially for glass manufacture and in electrical work.

Nearly all the Indian kyanite at present on the market is quarried at Lapsa Buru, Kharsawan State, and the average production for the last three years (1936-37-38) has been approximately 27,000 tons.

Sillimanite-corundum deposits are known in Nongston State in Assam, and at Pipera in Rewa, but transport difficulties have been against production. Travancore has, however, a small output of it.

STEATITE

This mineral, also known as soapstone, potstone, talc and agalmatolite, and in its powdered form as "French chalk" is one of the most variously used industrial minerals, in multitudinous minor ways, from idols and slate-pencils to switchboards and chemical tanks, and, powdered, from anti-adhesives, polishers and fillers to face-powders.

The annual production of India is reported as about 18,500 tons in 1938, the chief sources being Jaipur State, Guntur district in Madras, and Jubbulpore district in the Central Provinces, but there are numerous other minor deposits and probably a good deal of it does not come into the statistics.

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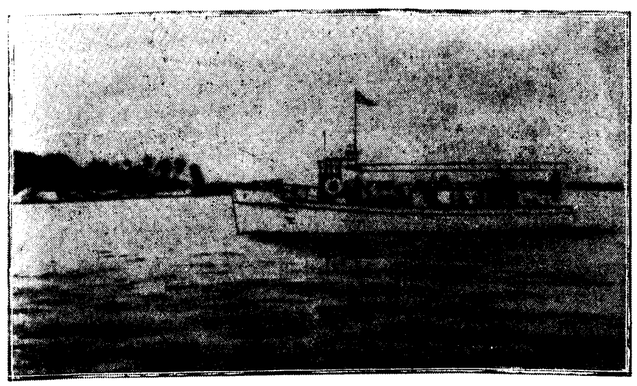
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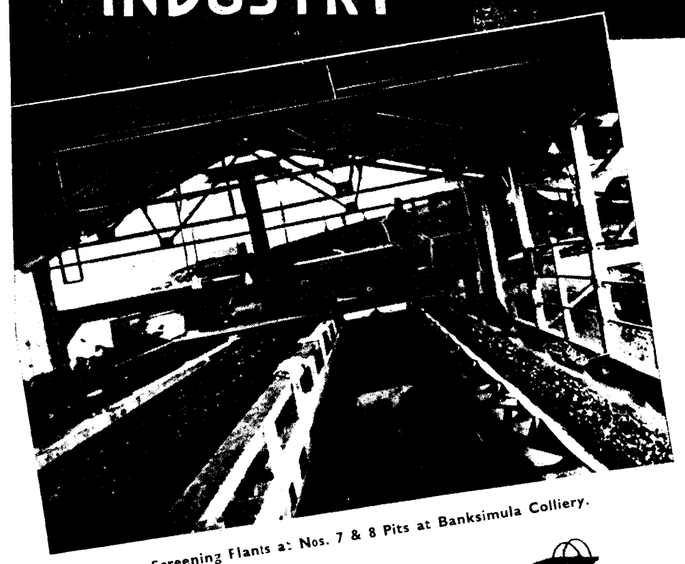
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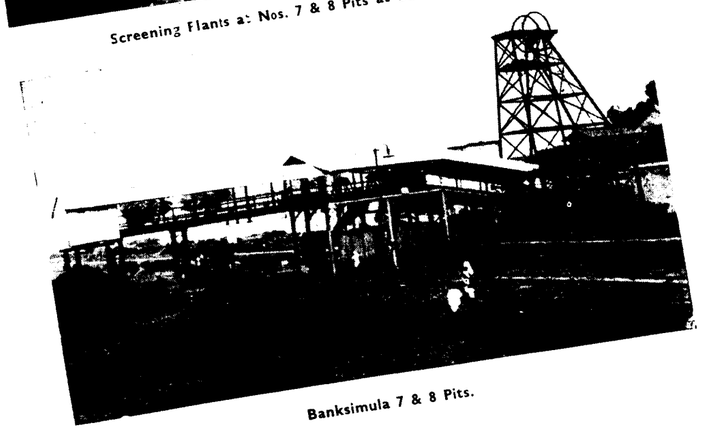


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JUTE MILLS AND THE WAR EFFORT

A popular estimate of the War effort of the Jute Mills of Calcutta would include the manufacture of millions of sandbags and astronomical yardages of camouflage strips. Perhaps the better informed might add all kinds of webbing and the manufacture of the materials for, and the fabrication of, tents. Of one Mill it can be said that it has departed so far from ordinary Jute Mill practice that the name Howrah Jute Mills no longer describes its activities.

The Howrah Mills Co., Ltd., registered in 1874, is one of the oldest Mill companies in the Jute industry. Its progressiveness can be measured by the fact that it instituted its own Research Department nearly 10 years ago and has to its credit several original products of the greatest importance to the war effort.

Of these probably the most important is Jute cotton union canvas which is now manufactured here on a very large scale.

The mixing of jute and cotton yarns for speciality fabrics has engaged the attention of the technical staff for many years the materials produced ranging from upholstery fabrics to canvases. Samples of this mixed fabric were sent to the Ordnance Laboratories, Cawnpore. Their report on the resultant fabric was so encouraging that the Howrah Mills started on the manufacture of canvas for chaguls and waterholding stores.

Perhaps a word about chaguls will be of interest regarding the urgency of the Government needs and the Howrah Mills' struggle to produce the right material.

A "Chagul" is a soldier's waterbottle modelled somewhat on the well-known Bhecsti bag and is specially designed for tropical conditions. Quite unlike the water bottles used in temperate climates which are metal containers covered with felt, the chagul is made from canvas which must be capable of holding water without proofing of any kind.

In desert warfare, where high temperatures prevail, the ordinary waterbottle does not keep the army's drinking water cool.

The fabric bottle after a few hours' soaking in water will retain 95% of its contents and because of the slight evaporation from the outside of the chagul the contents are kept cool.

Carried by the individual soldier or under transport vehicles, chaguls provide the supply of cold water which means a fresher army and, in event of breakdown or detachment from the main force, may mean the lives of men.

In addition to chaguls the same quality of cloth when proofed is used for the fabrication of water tanks of from 50 to 1000 gals. capacity and at present the waterholding stores for the Government of India are fabricated from these two cloths manufactured at Howrah.

After trials with jute warps, a cotton warp was chosen for its greater elasticity and the jute weft, with its high water absorbency and consequent swelling when wet, completes a fabric which is so tightly packed that only a minimum of water can soak through.

The original sample which was so favourably reported on by the Ordnance Laboratories weighed 19.5 ozs. sq. yd. Radical alterations in the processing of both the jute and cotton combined with infinite care in the study and correction of detail have increased the weight to 23 oz. per sq. yd. with waterholding results far better than were thought possible at the inception.

Specifications, from time to time, have been changed by Government and always to higher standards. This has been possible only because this Mill itself refuses to recognise as final any results which fall short of those obtained with flax.

A second canvas made by Howrah at the suggestion of Government is an all-cotton canvas known as motor-hood canvas. The compactness of weave of this cloth is so great that the cotton mills have found it to be beyond their power. Here, as with Cotton/Jute Canvas, machinery has had to be altered and new machines have been introduced which belong to neither the cotton nor the jute industry.

The suitability of this material for motor-hoods lies in the qualities endowed by its closely packed structure. With its light weight proofing and extra strength it is perfectly watertight and has proved its ability to stand up to the most rigorous weather conditions. The saving of weight in a Motor Lorry hood using this cloth in place of common proofed 'C' Grade Canvas is in the region of 40 lbs.

This cloth has recently found another use in the construction of "mat bridges" which are a form of light pantoon bridge where the canvas gives the necessary buoyancy.

In addition the Howrah Mills manufacture various grades of all jute canvas. This is carried out by several jute mills in Calcutta but the Howrah Mills Co., have built for themselves a pre-eminent position in the manufacture of "A" Grade Tossah Canvas, which is again a very compact fabric of high breaking strain and so far is the only jute canvas which when proofed has been found acceptable for wagon covers.

A lighter weight canvas for the fabrication of tents is manufactured at Howrah in common with many other jute mills and tent manufacture is in full swing. The pioneering work for the I.J.M.A. in tent manufacture was carried out at Howrah and the first sample tents manufactured there were exposed to trial by the A.I.G.S. and withstood the stringent conditions of an Indian monsoon remarkably well.

The latest tent to be made by the Howrah Mills Co., is a huge affair 50 ft. long 20 ft. at eaves, 15 ft. at ridge with a double roof a sample of which is erected in the compound for the benefit of the staffs of other Mills.

This tent is already in production at Howrah. It is stated that it is the largest to be manufactured in India.

FLAX TWINE

A considerable quantity of indigenous flax has been processed into sewing twine and canvas at the instigation of the Government and a process worked out for adapting jute mill machinery in the event of supplies of indigenous flax becoming available.

TAPE

In addition to canvas a number of tape looms have been installed and are busily engaged in the manufacture of cotton and jute listing, whilst Haskard camouflage nettings are being woven in the loom.

NEEDLED FELT

The last of the new manufacturing processes to be described is felt making from jute.

Needles thrust a lap of jute sliver through the interstices of hessian forming a well built and very strong felt which finds many varied outlets from shoe-soles to linings for ammunition boxes. In addition experiments are nearing completion in converting it to roof felt. Many very attractive looking samples have been made which have the advantage over ordinary roof felt of being so strong that it is quite impossible to tear it, owing to the hessian reinforcement.

WATERPROOFING is carried on in a building specially erected for the purpose in June 1940. Various types and shades are produced and the materials used are all indigenous and in part manufactured in the department. Several of the raw materials have been developed in conjunction with local firms and the Mills Research staff, and are now being specially manufactured to the Company's specification by various firms. One at least of these products has never been manufactured before in India.

RESEARCH LABORATORIES

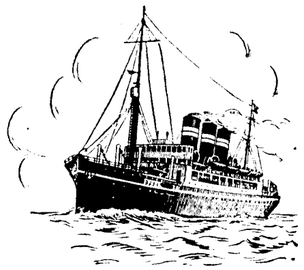
The Mills as previously mentioned have run their own private Research Laboratory and test room since 1933.

The well equipped laboratory is manned by an enthusiastic staff of Indian Chemists and Physicists under the direction of a highly qualified English Textile Chemist who had the advantage of 5 years experience in the Technical and Consulting Department of an English Textile Research Association.

In routine work samples are drawn from 10% of the production and submitted to all the standard tests, whilst new developments are continually emanating from the Research Section.

Other developments include buckram fast to washing, stiffened and corrugated jute cloth strips for use inside topies and rotproofing of tents in khaki and green shade. Bleaching and the production of fast shade on jute based on processes worked out in the laboratory, has been carried out in bulk for several years and the resultant yarns are manufactured into furnishing fabrics, producing a large and very attractive range.

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DAIRY PRODUCE AND POULTRY FARMING

In the article on 'Agriculture in the third year of the war' reference was made to the increased demand for foodstuffs. The measures that are being taken to ensure adequacy of supplies of rice and wheat have been detailed. But not less important than these, either in the near or the far view, is the expansion of other food-products, which are animal in origin and which, probably for that reason are extremely important in a country with a large class of vegetarians in its population. Throughout history, India, particularly Hindu India, has attached great importance to the cow; and the feelings of veneration for the cow, which sometimes meet with condign derision at the hands of foreigners—condign, because it ill accords with our treatment of the cow—are to be attributed to the place which milk and milk products occupy in the diet of a largely vegetarian population. But, as hinted already, religious veneration is rarely a creative force. It tends to weaken rationalism, reinforce the spirit of lazy fatalism and substitute blind drift in the place of careful study and timely action. In this case, religious feelings have led to the people giving a long lease of life to worthless cattle; and such worthless cattle have tended to reduce the quality of our livestock. It is estimated that India has more cattleheads than the greater part of the outer world, but milk production is extremely low. Quantity always militates against quality.

Here, as in many other problems concerning this country, one is at a loss to say where a beginning should be made. If fodder is our principal difficulty, if numbers stand in the way of improvement of stock, if it is so difficult to teach the average cultivator to value quality more than quantity, where really do we begin? It is not easy to say. Some day all our problems of rural reconstruction will be taken up together and studied in their proper relation and in relation to the resources we have for solving them. But for the present, the way in which the pace of things is forced by the war is something to be thankful for. After all, war is an executive that dispenses with committees, that brooks no delay, that well nigh cuts the word 'impossible' out of the dictionary of national life. When war increases the number of mouths to be fed adequately and well, when it increases the pressure of the food problem, when the total stock of foodstuffs has got to be increased somehow anyhow, then means are found for increasing every item of the normal diet.

Naturally, the need for milk and milk products has greatly increased owing to the large military strength and thousands of prisoners of war now kept in this country. Moreover, certain milk products, such as condensed milk, milk powder, cheese and butter, which were previously imported from abroad are not easily obtained from overseas, partly because of shipping difficulties and partly due to the increased need for these products in the exporting countries, some of which are now enemy countries. The dairy industry in India is making every attempt to meet the incrased demand and the shortage of imported milk products.

As condensed and dried milks possess long keeping quality and are nutritious foods and easy to handle, store and transport to long distances at comparatively cheap cost, they occupy a unique place in the feeding of military and others, particularly during war time. Several enquiries from private persons were received in the office of the Director of Dairy Research regarding the manufacture of these products and advice for setting up such factories was given.

Information in connection with the development of a condensed milk industry in India as a war emergency was supplied to the Supply Department. The Military Farms Department has already arranged to manufacture condensed milk at Lahore. Experimental work on problems connected with the manufacture of good quality condensed milk is in progress at the Imperial Dairy Institute, Bangalore.

The daily production of butter as estimated before 1939 came to 20,000 lbs. According to the Milk Marketing Report (1941) it is now about 8,150 tons annually, or about 50,000 lbs. daily. This large rise is an indication of the present daily needs. The results of the work done at the Imperial Dairy Institute on problems of practical importance are being disseminated to the manufacturers and they are thus being helped in improving quality. Starters for desirable flavour and aroma production in butter are being distributed to those who need them.

Imports of cheese were between 9,000 and 10,000 cwt. annually, valued at about Rs. 7,50,000, between 1933-34 and 1938-39. A large portion came from countries which are enemy countries now and these imports, therefore, have stopped since the war started. The need for setting up cheese factories to meet the needs at least to the extent of the previous demand is evident. Enquiries have been received from the public in this connection and necessary advice has been given in each case.

At present only the Imperial Dairy Institute, Bangalore, and the Agricultural Institute, Allahabad, make a small amount of Cheddar cheese for educational and research purposes, the surplus of which is available for sale to the public. The Military Farms Department are making a processed cheddar cheese for supply to the defence forces. Some indigenous soft varieties of cheese (Surati, Dacca, Bandal, Kabuli, etc.) are made in several places for local consumption.

Ghee is an essential article of diet, especially for the nutrition of Indian troops in India and overseas. There is a largely increased demand for it. The Military Ghee Heating Centre at Agra handled 2,213 tons of ghee in 1938-39 and increasing amounts in later years. The entire output is used for the Indian army.

The work being done by the Agricultural Marketing Department of the Government of India under their AGMARK seal (Ghee grading scheme) is helping to control the marketing of the pure article and the research work on the detection of adulteration of ghee, which is being started under the Council's scheme at the Indian Institute of Science, Bangalore, also aims at providing pure ghee for the public as well as the Indian troops.



Studies in the methods of making ghee more economically and producing a better quality product have been in progress at the 'Imperial Dairy Institute, Bangalore, for some time. The method of making ghee direct from cream, which is especially economical in small-scale production, is now being largely employed in several places. The ZARUKO ghee boiler designed and tried out at the Imperial Dairy Institute is very useful and information gathered on factors affecting the quality of ghee, such as freedom from "chhas," granulation, etc., will help in the production of a better quality article.

All the dairy plant, machinery and utensils were imported from overseas before the war. It is difficult to obtain them now. To meet the needs of the industry some units are now made in this country, e.g., a satisfactory milk and cream pasteurising unit suitable for small-scale work is being manufactured in Bombay, a cheap hand drum cooler for cooling milk and cream has been designed at the Imperial Diary Institute and several other pieces like milk tanks, wash-up tanks, cans, pails and bottles are also being manufactured.

Several detergents and chemicals like soda ash, amyl alcohol, etc., which are needed for dairy work, are now being manufactured in this country.

Experiments are in progress in the manufacture of vegetable and animal rennet at the Imperial Dairy Institute for the purpose of assisting the manufacturer of cheese and rennet casein.

During the last world war (1914-18) a large number of cows were exported to Mesopotamia and other places overseas for supply of milk, butter, cream, etc., to the fighting forces there. With the recent introduction of condensed milk, milk powder and sterilized milk such export may not now be necessary, but the country's vast resources could, nevertheless, be depended upon to supply cattle needs overseas if such a contingency arises.

The outbreak of war has afforded an opportunity to India to build up a large-scale export of poultry products as stocks of poultry have been greatly depleted in most Western countries of these products. Although India is not yet in a position to export eggs in shell, the egg size of the typical country fowl being too small to attract much demand in importing countries, yet export of frozen eggs and dried eggs for which the egg's size does not matter and of canned chicken can be built up without much difficulty.

Greater attention is now being paid to the improvement of poultry in India where there are about 522 lakhs of laying hens with an annual egg production of 28,000 lakhs. Two schemes have been financed by the Council, one for research in poultry breeding in Bombay and the other for the improvement of poultry for table purposes in the Punjab. Under the former scheme, work has been carried out on the improvement of Indian breeds of fowl and their egg production by selective breeding and proper management, as well as by cross breeding with imported breeds for evolving a profitable and resistant bird suitable for Indian conditions, the most economical methods of feeding and cheap and sanitary housing.

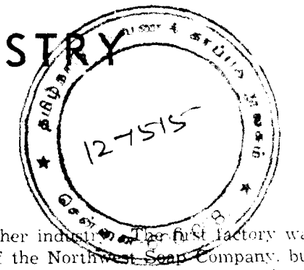
Under the latter scheme work has been carried out at Gurdaspur on four indigenous breeds of fowls, namely, "Asil," "Chittagong," "Improved Punjab" and "desi" and investigations have been carried out in connection with the economics of egg-production, body weight of breeding stock, broodiness, hatching results, adult and chick mortality, rate of growth of young stock and fattening trials on unwanted stock.

It is expected that work in regard to the preparation of poultry products for export, such as dried eggs, frozen eggs etc., will shortly be taken up at the Poultry Research Section, Imperial Veterinary Research Institute, Izatnagar.

It will thus be seen that under the stress of war the two sources of foodstuffs, namely, milk and milk products and eggs are being expanded as far as circumstances permit. The peculiarity of the changes effected by the war in these spheres of our economic life lies in the fact that they do not concern themselves unduly with basic enquiries, that they ensure quick results and, what is most important of all, they secure development of great significance in what may be called the subsequent manufacturing stages, without which no export would be possible.

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INDIAN SOAP IN WAR



With a record of successes that defeats pessimism as to the future, the soap industry in India is not alone among the secondary industries which depend, to some extent, on imported materials. From the middle of 1941 many difficulties as regards supplies and prices of caustic soda and soda ash threw a heavy burden on the industry which has since found the rise in the cost of coconut oil, perfumes and packing materials a handicap, not unusual but unwelcome in war time. The immediate results of the war in the soap industry cannot be traced through statistics, but in the upward revision of prices accepted by the largest combines as well as the smallest factories. Another result has been the resort to simpler, cheaper soaps with materials like starch, lime and soap-stone. What is, however, dominant is the organised industry which has found in the reduction of imports an opportunity that has helped the rapid growth of production. Two years ago, total output was put at 80,000 tons per annum as against 18,000 tons in 1918. Import control has since reduced the intake of foreign soap and the U.K. no longer appears as a rival helped by Preference. With the loss of Penang, Indian soapmakers have had to rely on high-priced coconut oil and efforts have been made to secure locally adequate supply of coconut and other vegetable oils. Plans to run an oil mill have been carried out last year. Representations as regards chemicals have not been fruitless, and the work of readjustment should be helped by progress in the chemical industry.

Since supplies of aromatic oils from Europe are cut off by the war which has also depriced India of East Indies supplies the importance of research will be understood. The soap industry's war effort lies largely in the production of glycerine for explosives and the major producers, who have benefited in 1941 from war conditions, have helped in this regard. The success of one large company indeed ensures satisfaction as to the Indian assets helping to make good in part the loss elsewhere occasioned by the war, but the enterprise which has the benefit of connections with chemical manufacturers can do equally well in the future.

The soap industry's development in thirtyeight years is very much like that of any other industry. The first factory was that of the North West Soap Company, but it was merged in a greater concern after a chequered career and the Swadeshi movement came only in time to give the Indian soapmaker the necessary impetus to carry on against odds. Home production began to increase, though the imports totalled 9,000 tons on an average every year. The spread of soap factories from Bengal to the other Provinces proved that the home market was proving the single largest supporter of the industry which found that the first World War helped to shut out imports, stabilise prices and raise standards of quality. If the same advantages do not accrue at present, it will be understood that the decline in imports is a constant factor. By 1937-38 imports had dwindled to 2,077 tons of soap and the soap industry as a non-protected industry was considered the most striking example of what energy and enthusiasm could achieve. A very large number of factories was engaged in producing washing soaps which accounted for 90 percent of total production.



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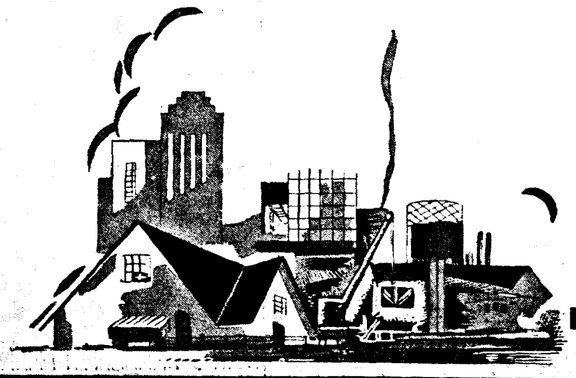
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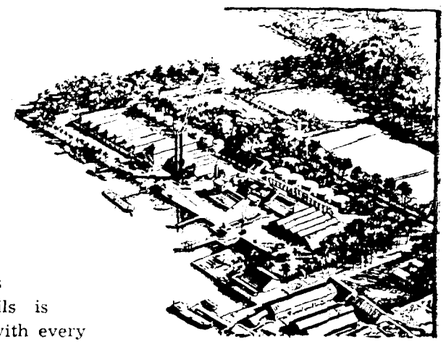


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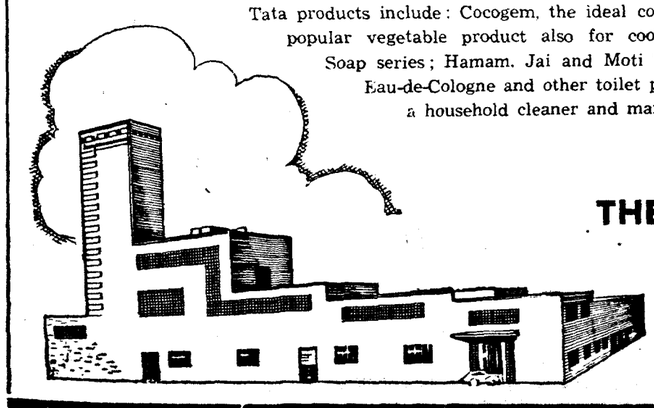
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MCK 38

The market here, of course, is limited by the poverty of the people, and the fact that prices have been raised moderately and soap supplies kept up last year despite known difficulties can be regarded as an acknowledgement of what may be secured by the consumer. The large factories have certainly kept up the policy of helping the consumer, and advise against hoarding of soap was only dictated by abnormal demand. There are two sets of factors—a large increase in demand and a shortage of essential materials like chemicals. There has been no Soap Control order but the Paper Control order. Heavy Chemicals control and the enormous increase in the cost of oils as well as labour, have indicated to the public the direct results of the war. The growth of toilet soap production is perhaps a result of soap rationing in Britain; but the major lesson of the war so far has been that it is only the large efficient producer that can stand up to the strain of war conditions. Since essential oil manufacture lags behind, it is realised there will always be some difficulty for which co-operative research may afford a solution.

The ability of the industry to overcome foreign competition is not questioned, and the cheap Japanese product cannot re-enter the market trained to look for better things. Though there has been a suggestion that the Punjab should import less, and produce more soap on its own, the present distribution of the industry conforms to the belief that industrial location in this case cannot have been carried out with greater skill. Difficulties in regard to tallow and coconut oil may not persist, if home production develops, but technical progress is held desirable for instance in the field of transparent soaps. The Institute that produces soapmakers is to continue, and practical instruction is ensured at Calicut. That is one of the inherent advantages of an industry whose products are now being made known to foreigners. Important developments in regard to oils and resins have been expected by many, and work on essential oils in the B.H.U. laboratories has excited great interest since 1941. After the war came to the Far East, there have been additional difficulties as regards materials like aromatic oils which the U.S.A. can obtain from Latin America although at higher prices. Yet the war may lead to resolute investigation of Indian sources to supplement the production of lemon grass, sandalwood and other oils which have long figured among the exports from India. Synthetic compositions for use in the place of essential oils may be evolved even though synthetic soaps may not come, but reduced perfume content will not escape the notice of those who may find that in regard to boiling, milling etc. Indian soap continues to attain a higher standard than ever.

A point that may claim attention here is that the rations and cuts reported in European countries in recent years have never been reported here for which the explanation may be sought in the progress of the soap industry in India. The fact that soap produced is valued for Rs. 4 crores every year gives an indication of what has been put into the industry which is largely self-reliant as regards its own machinery. The computation of costs, wages and capital employed in scarcely possible for lack of data. But Indian concerns have celebrated jubilees, and made real progress in the war period, and the emergency surcharge of 20 percent is perhaps playing its part in promoting sales of Indian soap.

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BY-PRODUCTS OF COAL

Coal as the raw material of industry has acquired its importance entirely from carbonisation. High temperature carbonisation is the familiar method of producing coke, needed notably for the iron and steel industry. High temperature carbonisation for the manufacture of coke is distinct from low temperature carbonisation intended to obtain liquid fuel. The latter is full of difficulties and the various processes are now readily adaptable to coking coals available in India. What is possible must be distinguished from those obtainable by costly, intructuous experiment or pre-treatment and the very moderate results obtained by Sir George Beilby, Chairman of the Fuel Research Board, must restrain optimism. But carbonisation of the older type is wholly successful, and coke is not the only product obtained at present in India. In this field the pioneer has been the Bararee Coke Company, Limited, whose works at Kusunda on the E. I. Railway provide benzol and many essential materials. The extraction of coal gas results in the production of coal tar. Ammonia given off is used to produce sulphate of ammonia—a fertiliser of recognised value. Benzol is produced by the use of creosote oil on coal tar gas. The works at Kusunda produce besides benzol (used with petrol as a liquid fuel with special anti-knock properties) naphthalene used for making moth balls and the incondensable gas used as fuel. Road tar and creosote oil are manufactured. Disinfectants, carbolic acid and cresytic acid are also produced by the Bararee Coke Co. The works set up in 1919 are industrially mature produce benzol, benzene and toluene along with many refined products of coal tar. Reckoning by the number and value of by-products alone, the company which has put the Bararee brands of tar, varnish and chemicals on the market is certainly to be considered a factor in the war effort. If development has been rapid much of the gain arises from the adoption of high temperature carbonisation. Indian coals have a low sulphur content and low phosphorous content, making them suitable for most metallurgical purposes, but the Bararee Coke Company's distinctive claim lies in the utilisation of by-products of the coke ovens. Mr. Wilson Haigh in his review of the present state of carbonisation of coal in India expressed scepticism as to the value of suggestions in favour of low temperature carbonisation. He doubted if sulphate of ammonia, tar, etc., would pay, and added that no other process has yielded so many disappointments as low temperature carbonisation.

In his estimate of by-products recovered in the manufacture of coke he gave five gallons of tar per ton of coal as the quantity obtained at most coke-ovens and put total Indian production at 100,000 tons per annum. In an analysis of the wartime development of the Indian coal industry (made at the end of 1941), it was noted that in spite of excise regulations, many companies had adopted plants to the production of benzol from which many chemicals and drugs are derived. Benzol contains toluene required for the manufacture of T.N.T. and the Bararee Coke Company, though not the only producer had already made its contribution to the manufacture of explosives in India. High-grade phenol and cresol for medical purposes are among the war supplies obtained. Creosote oil is a timber preservative, and the list of coal tar disinfectants includes Indian-made lysol. Tarmastic roofing material is a departure in production for which thanks are due to the makers of the distillates referred to in the paper of Messrs. Forrester and Gilbert already quoted. The present range of products is altogether impressive, including anthracene, pitch, naphthalene and benzene (sources of dyestuff in the future) phenol, disinfectants, varnishes and paints and Mr. Haigh calculating the components by volume states that only 3 per cent of the original quantity is lost during distillation. Road tar has helped in the development of motor transport in India. The use of tar for road surface has quadrupled in the five years ended 1939. But the widening range of applications must be considered. Middle or carbolic oil gives off the acids required for making disinfectants. Creosote is essential for treating sleepers, poles, etc., tar oil washes are wanted in the garden by the fruitgrower for sprays and its compounds are used against soil sickness. Disinfectants and antiseptic (as Mr. Wilson Haigh whose paper read before the Min. Geol. Met. Institute of India is the *locus classicus* on the whole subject) form a large group. Except for permangnates and bleaching powder, the majority are produced from coal tar. Phenol, cresol and kxlenol are all derived from coal tar. A white disinfectant (distinguished from black fluid soluble only in fresh water) is now being made in India from Jharia coal. As chlorine is scarce coal tar disinfectants are in great demand at present.

Alizarine dyes, though not unknown to India, are as yet not manufactured because of the many and great difficulties including lack of technical experts. Phenol, of course, finds wide application in the plastic industry, as yet in its infancy though moulding has emerged into full view and bakelite caps have acquired the position held by cork in the past. Naphthalene is used for dyestuff manufacture but in India that has not been developed only the manufacture of moth balls has been reported. Hydrogenation gives solvents for the paint and varnish industries so that the coke plant is of great value to another secondary industry. Since sulphate of ammonia as well as ammonium nitrate is produced at cokeovens in India, the coal industry is of direct help to Indian agriculture to-day. Anyway, the connection of carbonisation with the growing chemical industry is obvious not only through the explosives link, but through production of inorganic manures. The synthetic product nearly killed the manufacture of ammonium sulphate at the Indian works producing coke. It is estimated that 20 to 28 lbs. per ton of coal is obtained by one or other of the processes adopted for recovery of sulphate ammonia.

Since liquid fuel is more important in war in a country relying almost entirely on imported petrol, benzol is obviously the most important by-product of the coke plant. Coal gas brought into contact with creosote oil is the source of benzol. After tar and ammonia are taken out by heating and distillation oil gives up its vapours, converted again into liquid by distillation. Naphthalene is recovered in the process which precedes the washing and refining of benzole. Though 3¾ million tons of coal are coked in India every year, the amount of benzole produced is small. There is no preference to home-produced liquid fuel from coal. That only 200,000 gallons of benzol per annum were produced in a whole year does not indicate the potential output but only the existence of obstacles like central excise and the absence of subsidies in this case. Since benzol is good for mixture with petrol *plus* alcohol it has been said more than once that encouragement to the Indian coal industry to produce more benzol must be afforded. In countries where power-alcohol is in vogue, there has been special encouragement of blending agents like benzol.

Coke-oven gas is used as fuel by steel plants and for heating chemical plant or gas engines at the site. Anyway, the residue finds a use in the carbonisation plants themselves. That coke-oven gas is a source of hydrogen has been noted in this connection. For vegetable ghee producers and makers of ammonia this is of direct interest. What is of special importance is not the possibility of using coal tar for aniline dyes as shown by demonstrations arranged by Mr. Wilson Haigh to prove his points, but the limits set by Nature to the development of low temperature carbonisation. Scientific opinion is at present against it, because the market is absent and investment is more than risky. As regards the successful operation of the Bararee Coke Company, Ltd. in recent years, the dividend announcements provide a complete answer. It might be said that the investment rating has nothing to do with operating efficiency or commercial success, but it is permissible to say that in the development of the Jharia coal field as a source of tar, ammonium sulphate, pure acids and tar acids, the company has been more successful than most pioneers. A ton of coal may yield only 1.2 gallons of motor benzol per ton; but it gives anthracene for timber preservatives insecticides as well as the carbolic acid needed for disinfectants, sheep-dips, etc. What has been accomplished at Kusunda in two decades and more recently in regard to toluene, benzole, etc., strikes the public as most reassuring and entirely hopeful. The battery of Simon-Carves coke-ovens set up in 1919 has been supplemented by an installation built 20 years later. The advent of power-alcohol should make blending agents like benzole important and the success of Cleveland Discol mixture in Britain suggests that distilleries must help the coal and oil industries in the chosen field. That benzole yields toluene is to-day the major consideration.

It is clear that in coal-tar by-products the company has broken what appears to be virgin soil. High temperature carbonisation is known from the 17th century and the gas industry dates from 1792 : but it is only after the last war that coke has developed along with the iron and steel industy of India and the Bararee Coke Company's progress is naturally related to that growth of other enterprises. Since domestic coke for use in open grates is not produced by the company as the temperature employed is (in spite of the local climate) higher than the 600 degrees centrigrade used in this connection, the company is essentially a producer of liquid products from coal. What they are has been indicated in the well-known review of developments at Kusunda issued by the Company same years ago, but the more extended account provided now should indicate that in regard to the development of coal by-products in wartime, the Indian government and people alike have been fortunate in having the resources and experience of the Bararee Coke Company, Limited at their disposal.

INDIA'S AGRICULTURAL RESOURCES

INTRODUCTION

Although the predominantly agricultural character of Indian economy is common knowledge, the vastness and variety of India's agricultural resources are often but imperfectly realised. Alike in wealth of agricultural raw materials and in food crops, this country occupies a high position among world producers of primary products, a status which in peacetime is not as well realised as it might be, partly because of the amount of ignorance that still clouds many aspects of Indian economy and partly because fiscal policy was not always designed to secure the best interests of India. In a time of war, there is naturally a greater disposition to appreciate facts more truly, because war emphasises the importance of agricultural resources and shows up the need for conserving them in the interest of not one country alone, but of a whole group of countries. And what in peace time is subordinated to considerations of the quota, the tariff and the stipulations of protocols acquires, in war time, a special importance. And its place is taken by more compelling considerations pertinent to the smooth organisation of supplies in complementary fashion among the participating countries. It is to the dawn of this spirit of realism that one must ascribe the repeated assertion of India's self-sufficiency in a variety of products.

Agricultural production of all the important commodities has, in the past two years, increased considerably and in almost all cases, there has been an expansion in the area under cultivation and, in some cases, even the yield per acre. In the beginning of this war, hopes ran high that India's position as an exporter of primary products would help to give a much-needed dose of prosperity to India's agricultural economy; and the incipient rise in commodity prices that was experienced then lent support to that hope. In fact, some went so far as to utter doleful warnings against inflationary trends in prices, but it was not long before such facile optimism crumbled in face of the hideous realities put up by the course of the war in stunning succession. The rise of the menace of U-boat warfare and lack of adequate shipping facilities were only the beginning of a series of reverses which were to culminate in the total loss of the entire Continental market. That was the last straw, as it were, and prices broke heavily and remained so for a long time. In fact, it is only recently since the introduction of a scheme of insurance of commodities against war risks and the confluence of a few other favourable factors that commodity prices have at all acquired steadiness. Although at current levels, commodity prices may be ruling higher than in the pre-war days, it is an incontrovertible fact that they by no means fetch a reasonable margin of profit for the producer; and the Indian agriculturist, who had fondly hoped to average up the depression prices of the last one decade, has ceased to cherish such dreams. There is such an accumulation of stocks to-day that the sanguine expectations of enlarged demand from the United Kingdom cannot help to relieve the heavy stock position.

The underlying idea of the Eastern Group Conference, namely, the pooling of supplies as between the member countries is capable of being exploited in a manner most conducive to the agricultural economy of India. The trade returns in recent months have abundantly made clear the scope there is for expansion in Indo-Empire trade, though doubtless the similar nature of the economy of some of the countries like Australia, New Zealand, etc., sets a sharp limit to the extent of expansion that can be brought about in this manner. And it would also be futile to expect that the problems of our foreign trade can be completely solved by promoting Indo-Empire trade, great as the scope for its expansion may be. There is another factor which must go into the reckoning here. Far too much dependence on outside markets, especially Empire markets, for India's agricultural staples carries with it the implication that, in the scheme of reorganisation of supplies among the Eastern Group countries, India may well have to be content with the role of an agricultural exporter to those countries in return for imports of their machinery and manufactured goods. The trend of discussions at the Eastern Group Conference has not served to dispel this misgiving such a contingency would be distinctly counter to the industrial aspirations of this country, which still lie in the establishment of heavy industries and auxiliary industries. To bank too much on Empire countries to bring about better conditions in commodity markets would inevitably lead to our being asked to be content with trifles, where more serious things might well engage our attention. The problem of undisposable surpluses has to be tackled by other means.

A fruitful approach to the problem lies in investigating how far the agricultural raw materials can be absorbed by the introduction of new industries. To mention only a few examples, it is common knowledge that we are yet to have a real oil industry in India, whose establishment would go far to utilise some of the surplus oilseeds that now lie idle for want of export markets. Again, new uses for cotton have been discovered and rayon manufacture alone opens up a vista of new possibilities. Most of our vegetable products would be found to be of use in the preparation of drugs, dyes and other synthetically prepared stuffs. Molasses from sugar form a good raw material for manufacture of alcohol. Fuel research has shown that coal can be the starting point for a number of dyes. Castor oil and castor oil products form a good base for main paints, varnishes, etc. Resins hold out great possibilities in the making of plastics, bakelite material and so on. The use of vegetable oils as lubricants is another highly promising line opened up. These are only a few of the many lines in which India's agricultural staples can be put to industrial use. The Industrial Research Board, by dint of zeal, can doubtless find out many more uses for them, and it may be trusted to do so. What a few years ago were nebulous projects have now been shown to be demonstrably practical and fruitful schemes. All that is needed is that these industries must be brought into being, and it will not be done unless the entrepreneur is sure of the reward for his initiative, which, in the last resort, depends on fiscal policy.

There is little doubt that a bunch of new industries engaged in lines like the ones pictured above will absorb in course of time a good part of the raw material which is now lying stocked in godowns for want of export markets. And, to view it conversely, greater industrialisation for India has no meaning unless it also makes due provision for the utilisation of the immense and diverse raw materials produced in this country. The new industrial planning must have, therefore, its agricultural aspect as well. And crop planning in the present and in the future must be fully in vogue. Each provincial government shall be guided in its crop planning schemes not only by factors like rotation, outturn, yield, market demand, etc., but also with a view to their industrial usefulness. It is by this process and by this alone that the problems of our agricultural raw materials may be solved. The attainment of industrial autarchy can, thanks to science, be aided by agricultural surpluses whose disposal is found to be so difficult now. The fate of our agricultural economy must rest on the twin poles of foreign trade and internal industry. Only that way can unbalance be avoided.

The enormous variety of Indian agriculture may be dealt with on the lines of the following classification:—

Foodstuffs—

Rice, wheat, millets and pulses, cereals, etc. Luxuries like dairy products, fruits, vegetables, biscuits, etc.

Agricultural Raw Materials:—

Cotton, jute, groundnuts, oilseeds, hides and skins, forest products, etc.

Minerals—

Mineral ores, coal, etc.

The rationale of a study on these lines is obvious. Its greatest virtue is perhaps that it emphasises the immensity of the country's resources of every kind. The following studies would have served their purpose, if they suffice to impress this truth on the reader.

Geography determines the fate of Indian agriculture completely, and man has done little to modify geography to his requirements.

The physical features and the soil of the country from the Himalayas to Cape Comorin are so varied and rich that almost all the crops which are grown in the world and which are necessary for the happiness and contented existence of man can be cultivated in this country on a scale sufficient to support a vast population. She holds the world's monopoly for the cultivation of jute, has a virtual monopoly of shellac, has the privilege of being the second largest producer of cotton in the world, while in rice she has a very large production and consumption.

From the point of view of relief or elevation, India can be divided conveniently into two regions—the region of the plains, including the great plain of Northern India lying at the foot of the Himalayas and their Eastern and Western off-shoots and the coastal Plain of the Peninsula. India consists of two narrow strips of low-lying country between the hills and the seashore and secondly the region of the tablelands including the Deccan Plateau and the Deccan

Foreland. The region of plains maintains some of the world's highest densities of population and is characterised by dry winters and wet summers. The summer monsoon during its passage westward gives more rain in the northern submountain tract of the Ganges valley than in the south and becomes weaker and weaker as it moves up from east to west. The monsoon rainfall, therefore, decreases from east to west and from north to south of the vast plains in the north of India. Thus, the natural regions arranged in order of diminishing rainfall are the valley of the Brahmaputra and the Surma, the valley of the Ganges and its tributaries, and the valley of the Indus and its tributaries. The coastal plains of Peninsular India represent a distinct monsoon region dependent for its agricultural economy on somewhat different conditions of relief, climate and rainfall. Generally speaking, over the greater part of India, the monsoon months are between June and October, three hot months of the year, the intensity depending upon the position of the mountains.

The nature of the crops raised and the periodicity of the crops depend on the monsoon and the fertility of the soil. In tracts which enjoy the advantage of heavy rainfall and good cultivation, the main crop is rice, while in regions that do not possess these advantages, wheat is the standing crop. The predominance of rice cultivation co-exists with a high density of population, while wheat crop is found to exist along with low density. In the coastal plains in the south, there is the plantation region growing tea, coffee and cinchona on the one hand, the rice region on the other with small patches of land devoted to sugarcane or garden crops, or pulses and millets strewn in between. The combination of food and non-food crops is also noticed in varying proportions. In the first place, there are the cotton growing areas of the rice zone (in the Coimbatore and Salem districts) where low rainfall combines with black cotton soil. There are again prosperous areas having a sound economic basis of two food crops like rice and jowar, the latter also yielding good cattle fodder in addition. Conforming to these monsoonic conditions and soil productivity, India, broadly speaking, can be said to have two cropping seasons—the *kharif* or the rainy season crop in which the sowing is undertaken in June or July and harvesting done in October and December; and secondly, the *rabi* or the cold weather crop where the sowing is undertaken in October and harvesting in April and May. This is but the general rule to which there are a number of exceptions. In the south, for instance, there are even three crops of rice, and areas where irrigation is by means of canals, contain crops of longer duration like cotton where sowing is done in the rains but harvesting is not done till late in the cold weather.

Agriculture is the mainstay of the peasant and is carried on with crude and time-worn implements like the plough and the cattle, the labour being provided mostly by the members of the peasant's family. The peasant's family is the unit for all practical purposes, the village being the smallest administrative unit of rural economy. Mechanisation of agriculture has not made any appeal to the Indian ryots, whatever mechanisation there is being confined to the utilisation of the Agrico tools and implement and mechanical processes for irrigational purposes, mainly because of the smallness of holdings. Agriculture provides directly or indirectly employment for the great majority of the people. The census of 1931 shows that more than 70 per cent of the total population of 353 millions depend on pasture and agriculture for their livelihood.

The total area of India is 1,818,000 square miles or 1,163,685,000 acres with a population of 353 millions, according to the census of 1931. Of the total area 687,618,000 acres belong to British India, 426,835,000 acres are covered by Native States and 49,242,000 acres belong to the specially administered areas of the North-West Frontier Provinces and Baluchistan under the control of the Government of India.

The total surveyed area in British India, according to the prepared statistics of the Government of India, is placed 667,594,000 acres, of which the area available for cultivation has been estimated at 433,539,000 acres or 65 per cent of the total. Out of the balance, 13.4 per cent is covered by forests and 21.7 per cent by land absolutely barren, covered by buildings, water, roads, etc. The net area sown every year varies from 30 to 40 per cent of the total area available for cultivation. The gross area sown during 1938-39 after taking into account the areas sown more than once, amounted to 243,584,004 acres. The following table gives the classification of the above area under the various food and non-food crops:—

	(1,000 Acres)
Foods Grains (cereals and pulses)	186,257
Condiments and Spices ..	1,501
Sugar	2,989
Fruits and Vegetables ..	3,905
Miscellaneous Foodcrops ..	1,353
Oilseeds	16,186
Fibres	17,726
Dyes and Tanning Materials ..	55
Drugs and Narcotics ..	2,188
Fodder Crops	10,371
Miscellaneous non-food crops ..	806

The above table shows that about 81 per cent of the total area sown are under food-crops, while food grains, *i.e.*, cereals and pulses, alone occupied 76 per cent. Fibres, which are mainly cotton and jute, cover only 7.0 per cent of the total area. Oilseeds, which are mainly grown for export purposes, occupy about 16.8 million acres or 6.7 per cent.

Cultivation of food-grains, therefore, claims the foremost place in the agricultural economy of India. The staple food of the people is rice, and wheat occupies the second place. Though India is the largest producer of rice in the world, and the second largest in the case of wheat, her export trade in both these commodities is of little importance, as most of the production is consumed within the country.

The above gives a rough idea of the importance of agriculture in India's national economy and the diversity of the crops raised and should serve as a sufficient background for the detailed examination of the extent of the cultivation and importance of individual crops. But before proceeding to such a detailed examination, of the crops raised—between food crops and non-food crops, the distinction is, of course, not a happy one for what is food crop in one area is also a cash crop in the same or other area. But since this distinction is apparent in each stage, this can form a convenient and useful starting point. Of the cultivated area, approximately 217 million acres are taken up by food crops, and the rest by non-food or commercial crops. The principal food crops are rice, wheat, barely, jowar, bajra, ragi, maize, grain and pulses, while among the cash crops are cotton, jute, sugarcane, oilseeds, drugs and narcotics, fodder crops, etc. The table given earlier serves to bring out the relative importance of each.

Of the total area under food grains, the United Provinces claim about 19 per cent, Madras 14 per cent, Bihar and Orissa 13 per cent, Bombay 12 per cent, Bengal 11 per cent, Punjab and Central Provinces 10 per cent and other Provinces 11 per cent. The following table gives the total area under the various food-grains grown in 1938-39:—

	(1,000 Acres)
Rice	69,918
Wheat	26,780
Barely	6,200
Jowar	20,844
Bajra	12,776
Ragi	3,490
Maize	5,723
Gram	11,683
Other Grains and Pulses ..	28,853

Oilseeds, such as linseed, groundnuts, etc., are mainly grown as an export crop and their importance to the country in general and to the cultivator in particular, is unique, inasmuch as it brings money from outside and is described as a cash crop. About 28 per cent of the total area under oilseeds is in Madras, 14 per cent in Burma, 13 per cent in Central Provinces, 12 per cent in Bihar and Orissa, 11 per cent in Bombay, 7 per cent in Bengal, 6 per cent each in Punjab and the United Provinces and 3 per cent in other provinces. The following table gives the total area of the different oilseeds in 1938-39:—

	(1,000 Acres)
Linseed	2,477
Sesamum	2,421
Rape and Mustard	2,977
Groundnut	5,698
Cocoanut	658
Castor	416
Others	1,537

Cotton and jute are the main fibre crops which occupied about 17.90 million acres in 1938-39 or 6.7 per cent of the total area sown. The cultivation of cotton extends to all parts of India, which is the second largest grower of cotton in the world. More than half of the cotton production is exported, while the indigenous cotton mili industry absorbs about 40 per cent. Bombay is the main centre of the cotton trade and large transactions in cotton are carried on in the City both in the futures and ready markets.

The cultivation of jute is a monopoly enjoyed by India and is mainly confined to the Province of Bengal, though Bihar and Assam also grow the same fibre to a comparatively small extent. There is a big industry in jute spinning and weaving situated in and around Calcutta which supplies a considerable part of the world's demand with jute manufactures. About 60 per cent of the jute production is absorbed by the industry, while 40 per cent is exported. Calcutta is the centre of the jute trade, not only for India, but to the world in general.

Sugarcane occupies only 1.4 per cent of the total area sown, but its importance to India is immense. Ten years ago, India was importing sugar to the tune of Rs. 15 crores annually. But to-day, sugar manufacture is one of the most important industries in India. With growth of the industry, the cultivation of cane also developed and India now occupies a proud first place among the sugarcane growers of the world. In 1939-40, the total area sown amounted to 3.6 million acres, yielding raw sugar of 4.5 million tons approximately. The United Provinces, Bihar and Orissa are the chief producers of the crop, though the cultivation extends to all other provinces.

The cultivation of fruits and vegetables has not gained much importance in India. The chief impediments in the way of any development in this sphere are the lack of transport facilities, prohibitive railway freights and lack of cold storage facilities. The total area under fruits and vegetables in 1936-37 was estimated at 4.8 million acres. There is vast scope for development in this industry in India and it is hoped that the recent flotation of several joint-stock companies to build cold storage vaults in all important towns in Northern India should go a long way to assist the progress of fruit culture. Yet, cheap railway freight and transport facilities are, without doubt, the most vital needs of the trade.

Under drugs and narcotics, the total area sown in 1938-39 amounted to 2,187,000 acres distributed as follows:—

	(1,000 Acres)
Opium	10
Coffee	95
Tea	738
Tobacco	1,155
Other drugs and narcotics ..	189
Total ..	2,187

Fodder crops include oats, field vetch, guinea grass, lucerne, fodded, *jowar* and *carob* or locust tree and the total area under this head amounted to 10,370,801 acres in 1938-39.

The normal outturn of the various crops in India depends mainly on the timely monsoon rains. But in recent years, irrigation has been resorted to on an extensive scale in tracts where rainfall is most precarious and the Government of India have been devoting more attention for the development of irrigation facilities. In lower Burma, Assam, East Bengal and Malabar Coast, where the rainfall is ordinarily heavy, the crops hardly need any irrigation, unless an unusual scarcity of rain occurs. The total area irrigated in 1938-39 amounted to 53,730,420 acres. Of this about 24.4 million acres where irrigated from Government canals, 3.5 million acres from private canals, 13.2 million acres from wells, 6.2 million acres from tanks and 6.7 million acres from other sources. Of the total area irrigated in India, the Punjab accounts for 29 per cent, U. P. 21 per cent Madras Presidency 18 per cent, Bombay 10 per cent, Bihar and Orissa 10 per cent and other Provinces 12 per cent. In the Punjab, of the total sown area 54 per cent is served by irrigation, 44 per cent in the N.-W. F. Province, 38 per cent in Ajmer-Merwara and 30 per cent in the United Provinces.

A substantial portion of the revenue of the Government of India is derived from the land. There is a general complaint that the peasant is heavily taxed and that it is out of all portion to his income.

Land revenue is assessed in British India under three heads, *viz.* (1) raiyatwari; (2) zemindari or village communities (temporarily settled); and (3) zemindari (permanently settled). When the revenue is assessed by the State on individuals who are actual occupants or are accepted as representing the occupants of smaller holdings, the tenure is known as raiyatwari. Under this system, there may be rent-paying subtenants. In the second category, *i.e.*, zamindary or village community, the revenue is assessed on an individual or community owning an estate and occupying a position identical with or analogous to that of a landlord. The tenure may be either temporarily settled, *i.e.*, land revenue is fixed for a limited number of years only, or permanently settled, and if the latter is the case, it falls under the third category, zamindary (permanently settled). The total area assessed in 1936-37, was 679,482,374 acres. About 50 per cent of the total area is held by raiyatwari proprietors, 30 per cent by temporarily settled proprietors and 19 per cent by permanently settled zamindars.

Agricultural products hold a predominant position in the export trade of the country inasmuch as they constitute nearly 60 per cent of the total value of exports from India. The following table would be illuminating in this connection:—

	(In Thousand Rupees) (1939-40)
Oils—Vegetable, Mineral and Cotton, Raw and Waste ..	31,04,57
Tea	26,29,42
Seeds	11,89,74
Grain, Pulses and Flour ..	5,08,84
Jute, raw	19,84,62
Oilcakes of all kinds ..	2,02,90
Wood and Timber ..	17,03
Fruits and Vegetables ..	2,36,94
Rubber, Raw or Crude ..	93,76
Fodder, Bran and Pollard ..	4,80
Tobacco	2,52,81
Animal	1,37,51
Spices	1,07,93
Provisions and Oilman Stores	70,87
Gums, Resins and Lac ..	2,22,40
Total ..	1,07,64,14
Total Exports of Indian Merchandise	2,03,89,99

The above review relates only to the conditions in British India and information with regard to the conditions in the Indian States is unreliable inasmuch as existing statistics are incomplete and inadequate. But taking a general view of things one can boldly say that agriculture in most of the Indian States is not in any way better in comparison with the conditions prevailing in the British Provinces. Though in recent years some of the progressive states like Mysore, Cochin, Travancore, Baroda, etc., are pursuing a vigorous policy towards improving the conditions of their agricultural population, their success, no doubt, depends to a great extent on the general policy of the Government of India, because the economic nexus between both is intimate.

The total area covered by Indian States and the specially administered areas of the North-West Frontier Provinces and Baluchistan amount to about 476 million acres, with a population of about 78 million. The agricultural statistics of these States are defective and incorrect, as their administrations are not maintaining any statistics at all. The States supplying information to the Government of India's statistical Department number only 77, comprising about 55 per cent of the total area. The surveyed area in all the reporting states exceeds 145 million acres. Out of this, the net area sown in a year amounts to only 50 per cent. Of the net area sown 75 per cent are covered by food-grains, 10 per cent by oilseeds, 10 per cent by fibres and 4 per cent by fodder crops, the remainder being under miscellaneous crops. Almost all the crops produced in British India are grown in Indian States.

The foregoing survey is in no sense a comprehensive survey of India's agriculture or the problems thereof. The latter hardly admit of any useful treatment in the course of a short article. The aim, therefore, is rather to show the relative importance of the principal crops and to enable an appreciation of the extent to which the prosperity of India's agriculture is dependent on the internal conditions. The division between food-crops and money-crops will also, we trust, be apparent at every stage.

RICE

Rice is in many respects the most important of India's agricultural products. It is the staple food of millions. It is grown over a wide area and in sufficient varieties. There is the coarse variety in which the grain is short and thick as opposed to the finer type in which the grains are thin and elongated and which are considered a delicacy. There are certain types where the grain is white, some others with a yellow tint and yet some more with a reddish streak in the grain. There are also certain types with a peculiar scent and flavour and are priced accordingly. The total acreage under rice in 1939-40 was 72 million which is far in excess of the acreage under any other crop, or any combination of other crops. The following table gives the area under rice cultivation in India over a number of years with the annual production:—

Year	Acreage (1,000 acres)	Yield (1,000 tons)
1930-31 ..	69,663	27,055
1932-33 ..	69,960	26,201
1935-36 ..	83,556	28,269
1936-37 ..	85,210	32,593
1937-38 ..	72,554	26,763
1938-39 ..	72,574	23,577
1939-40 ..	72,340	25,257

The main zones of rice cultivation are Bengal, Bihar, Orissa and Madras. It is generally regarded as a winter crop, being harvested in December and January, while the sowing season extends from May to August, though two other less important crops are also raised in districts with exceptionally favourable rainfall or water supply. Cultivation is either by broad sowing of the seeds on a ploughed field, generally adopted with coarse varieties, and by transplanting of young plants from nursery beds, usually followed in the case of finer varieties. The yields from the two forms of cultivation show up the difference in a marked degree. The rice yields are generally not very heavy in India compared with other rice-producing countries of the world, but that transplanting yields better results is accepted. The All-India average yield per acre is about 800 lbs. per acre, but transplanted rice in really good conditions may give as much as 3,000 lbs. per acre, while even a yield of 4,000 lbs. is not uncommon where good manuring has combined with satisfactory irrigation and

transplanting. The comparative figures of India's output of rice with other rice producing countries of the world gives interesting information:

PRODUCTION OF RICE.

(In Quintals 000's omitted).

	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40
British India ..	471,516	461,310	425,672	496,499	408,295	356,690	385,320
Japan ..	131,457	96,214	106,636	124,981	123,087	118,945	128,056
Dutch East Indies	53,144	57,588	57,476	...	...	...	...
Siam ..	50,077	45,978	47,270	33,799	45,557	49,374	50,827
Korea ..	33,765	31,027	33,193	36,311	50,128	45,155	26,611
Formosa ..	15,121	16,869	16,923	17,740	17,136	18,220	16,333
Madagascar ..	7,228	6,869	6,300	6,800	6,440	4,400	...
U. S. A. ..	7,685	7,970	7,917	10,169	10,894	10,676	10,677
Italy ..	6,915	6,730	7,352	7,340	7,913	8,180	...
Asia ..	850,060	795,000	786,000	873,100	877,300	840,000	850,000
Africa ..	20,500	20,000	22,000	20,400	20,600	17,200	20,000
Europe (excluding U.S.S.R.) ..	11,171	11,536	12,413	12,200	12,500	11,300	12,000
South America ..	15,200	16,900	15,000	16,000	16,300	...	...
World ..	909,000	856,000	848,000	937,000	939,400	902,400	916,000

The position of rice in each Province is somewhat different in that the proportion between the exports and internal consumption in each province is not the same. But as a rule, each province consumes a major portion of its production. Bengal and South India are in a unique position in that they enjoy an export trade in the better quality rice and import part of their requirements of low grade rice from Burma. India's export trade is governed largely by forces of competition from Burma and Siam, the two neighbouring rice producing countries, and hence prices have been subject to severe fluctuations in recent years and India's position in the export market has proved to be more vulnerable than one would have suspected a few years ago. She has, as a result of the war, practically lost all her European customers. The following table brings out vividly the changes in India's export trade in rice:—

RICE NOT IN HUSK

(in Tons)

Exported to	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40*
United Kingdom	75,210	71,415	88,375	50,122	53,754	5,864	6,446	3,543
Germany ..	228,106	246,113	157,934	79,209	53,831	103	103	..
Netherlands ..	95,641	80,885	62,408	69,799	111,724	5,743	3,200	1,489
Ceylon ..	394,314	403,329	391,501	423,706	427,591	91,101	104,953	71,421
Straits Settlements	156,479	153,971	135,436	138,418	161,495	7,761	11,147	7,307
Sumatra ..	62,491	69,805	70,013	74,744	47,210	..	..	..
China ..	233,230	170,613	173,425	71,747	16,585	4	12	..
Egypt ..	36,285	24,102	29,883	13,706	9,166	30	46	..
Cuba ..	39,043	46,190	16,715	25,449	32,020	3,15	2,837	2,031
Other countries	506,804	466,086	466,847	446,715	543,654	113,52	129,365	124,462
Total	1,828,196	1,732,539	1,592,517					

* for ten months

Under the Ottawa Agreement the United Kingdom and some other British colonies have granted to Indian rice a preference to have shown little encouragement to think that the preference has conferred any real or lasting benefit. Though in point of quality, Indian rice is no way inferior to that of the Spanish or American product, now commanding a good market there, Indian rice is shut out on the plea that it is not sufficiently polished or well-finished. The rice trade within the country is not also well organised and the majority of traders are at times negligent in meeting the foreign demand. The Eastern Group Conference has, therefore, a good field to explore. The better qualities of Indian rice can be exported to British Empire. The preference that had conferred no benefits can be made to yield results now. New uses can be found for the Indian rice flour as an article of diet in non-Indian kitchens. The loss of European markets can be compensated by an increased off-take by the Eastern Group countries. Besides a useful agreement can be entered into between India, Ceylon, and Burma so as to share the trade with the Eastern Group markets to the best advantage.

The rice problem is different. Even at the end of 1941, it was not possible to bring in the usual supplies of rice from Burma owing to the acute scarcity in regard to shipping. The entry of Japan into the war and the rapid successes of the Japanese culminating in the occupation of Burma cut off all sources of supplies so far as this country was concerned. Even the U.K. had to arrange with the West Indies for their requirements though they were prudent enough to lay in adequate stocks of rice from Burma before that country fell into enemy hands. The usual imports in this country of Burma rice is of the order of 2½ million tons and it is this shortage that has been mainly responsible for the difficulties in regard to this staple commodity. This shortage by itself could not perhaps have been so greatly felt, if the demand had remained at the same level and if we were not obliged to export to countries in the Persian Gulf area and to our little neighbour Ceylon. Efforts were made to increase the growth of other food crops to bring about a reduction in the consumption of rice. The propaganda made by the Government in this regard certainly met with success, though not to the desired extent. The shortage of rice was felt as in the case of wheat after April and there was naturally considerable opposition to the proposal by the Ceylon Government for substantial supplies from this country to relieve her distress. It was true that Ceylon's stock of rice had run very low, and it was found necessary to ration drastically the consumption of rice and it was only when the situation got out of hand the Government sent a representative to this country for negotiating for a quantity of 38,000 tons of rice per month. The Government of India had undertaken to supply Ceylon to a certain extent and had to effect some exports on this account. But when it was felt that in this country the position was getting definitely out of control and that there was great popular resentment, the exports to countries other than Ceylon were stopped and we have now been assured by the Commerce Member that before March, 1943 export of rice will be totally stopped. The co-operation of the provincial governments, especially the surplus provinces, is being sought to bring about a proper distribution of the quantity of rice available in this country and with the ration scheme now mooted it is hoped that it will be possible to get over the difficulty.

WHEAT

In the group of cereals, next to rice, wheat is the important food crop. There are broadly two species of wheat grown, the normal "bread" wheat of Europe and the so-called "macarioni" wheat. The first one is grown as an irrigated crop in the Punjab, Sind and the United Provinces, while the latter variety is grown extensively in the clayey black soil in Bombay, the C. P. and in some parts of the Nizam's Dominions as a rainfed crop. A large number of good varieties of wheat have been produced by the Agricultural Departments of the Provinces, though their cultivation on an extensive scale has not progressed very far,—for instance the pucca wheat and I.P. wheat bear the stamp of research, while the popularity of the Punjab types like C 891 and C 518 reveal the definite attempts to grow improved varieties on a large scale.

India is, no doubt, one of the largest producers of the commodity in the world, the table on the next page showing the All-India production of wheat along with the output in the principal wheat producing countries in the world.

The acreage under wheat cultivation has steadily increased. From 31,654,000 acres in 1929-30 the acreage expanded steadily to 36,077,000 in 1933-34 and dropped to 33,215,000 in 1936-37, again improving to 35,291,000 in 1937-38 and stands at 34,033,300 in 1939-40. The yield, however, stands at the high level of 10,784,000 tons in 1939-40. But for all the importance of this crop and the immensity of the production, Indian wheat has no international importance. Nearly the whole of her output is consumed within the country. During recent years her exports have dwindled to practically nil; in fact India even figured as an importer of wheat from Australia not long ago which forced the Government of India to impose a duty on imported wheat. But there has been a flickering revival in exports and imports. In 1936-37 the exports totalled 232,000 tons rising to 460,000 tons in 1937-38 though it dropped to 279,000 tons in the year following.

The outbreak of the war opens out fresh possibilities for wheat. At one time, during the 1914-18 war, exports reached 1,700,000

tons in a year. This war, however, is different from the last in many respects but the likelihood of Indian wheat finding a market in the Eastern Group countries can be profitably examined. India is one of the important wheat producing country east of Suez. Imports from the U.S.A., Argentine and Canada are, of course, not prohibited, but with the U.S.A. preparing for a total defence, and Continental states more concerned with conserving their resources for emergencies than with exports, the Eastern Group of countries represented at the Eastern Group Conference have only India to look to. Other things such as price, freight considerations, etc., are also in favour of India. Wheat, of course, is not a staple diet with most of these countries but, nevertheless, is an important item in their dietary and as such the possibilities are worth examining.

PRODUCTION OF WHEAT

(*In Quintals 000's omitted*)

Countries	1925-26	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40
British India ..	87,213	95,914	95,204	98,851	95,772	99,083	107,672	100,934
U. S. A. ..	223,855	143,966	143,263	170,466	170,498	238,324	253,327	338,729
Canada ..	117,220	76,720	75,075	76,731	62,384	49,046	95,259	133,256
Argentine ..	66,142	77,870	65,500	38,380	67,450	50,295	87,009	32,510
Australia ..	37,015	48,264	36,305	38,809	40,709	50,964	41,096	57,700
U. S. S. R. ..	215,240	277,300	304,100	308,300	309,000	442,000	..	78,000
France ..	79,295	98,611	92,129	77,552	68,979	70,173	94,000	78,000
Germany ..	32,595	56,043	45,327	46,672	44,269	44,668	55,780	..
Roumania ..	28,721	32,406	20,835	26,247	35,031	37,601	48,214	44,528
Europe ..	386,677	501,698	448,567	454,266	441,069	458,000	544,000	510,000
(Excluding U.S.S.R.)								
Asia ..	115,820	128,980	123,660	131,880	125,100	163,680	42,200	143,200
(Excluding U.S.S.R.)								
World ..	997,500	1,040,200	953,200	969,600	959,900	1,036,700	1,226,400	1,150,000
(Excluding U.S.S.R.)								

The problem of distribution became very acute since the Japanese entry into the war and it proved almost incapable of solution after April 1942. So far as wheat was concerned even with all the efforts to increase the wheat cultivation, it was not possible to get adequate supplies especially as there were reports regarding exports to Iran and large-scale buying by the U.K.C.C. The demand on account of the defence services also increased, so that the increased control price of Rs. 6-8 per maund had no significance on the 'black market' values. The Government of India was obliged to suspend buying for export to other countries and to arrange for wheat supplies to Iraq and Iran from Australia. The announcement of this decision by the Government did not have the desired result. The large hoarding movement and the unco-ordinated buying by the defence departments were not also helpful. Even in the Delhi area there was an acute shortage and it was necessary for the Central Government to requisition stocks lying in the godowns in the Delhi district. A Wheat Commissioner for India was appointed to look after the proper distribution and allotment of wagons for approved dealers. The provincial governments gave a lot of trouble by banning the export of wheat to other provinces. It was only recently, however, that efforts were made to bring about a co-ordination of the activities in the several departments and the Wheat Commissioner with the Assistant Wheat Commissioners has been able to bring about a certain amount of order out of the confusion that was prevailing in the country for a very long time. In spite of all the efforts of the several governments the main question is one of getting adequate supplies. In order to relieve this acute shortage it was only recently that it was decided that substantial shipments of wheat should be brought in from Australia and the British Government have promised the Government of India to provide the necessary shipping in this regard. The shortage of wheat is felt especially in Bombay and Calcutta areas and it is to be hoped that with the promise of new shipments the scarcity in the affected areas will, to a certain extent, be removed. Wheat is now decontrolled. The maximum price of Rs. 6-8 per maund is no longer in force as it is pointed out that the British Government will be able to supply this country with wheat at a much lower price and that this possibility will have the desired effect on values in the free markets. How far the Government will be successful in bringing about wheat supplies and effecting a free flow of supplies remains to be seen.

MILLETS

In the cereals group rice and wheat are, no doubt, the foremost crops, but there are other crops as well—commonly known as millets—not so important but nonetheless largely cultivated. There are different varieties of millets, the climate and the soil being very favourable for their growth. The Northern and Central Provinces variety of the great millet is known as jowar while in the South it is commonly recognised as cholam. This is the food alike for man and cattle, the grains forming the man's food while the cattle get the stem, stalk and the leaves. Here again, some varieties are sweet, the succulent stalks of which are grown as green fodder while other varieties are adapted to the dry crop. Jower covers nearly the same acreage as wheat and the grain yield is also just about the same, about 9½ million tons. It is unfortunately not an export crop and is consumed within the country. Researches are, of course, in progress at the various centres with a view to the introduction of improved varieties and facilitating dry farming. The following table gives an idea of the acreage and yield over a period of the past ten years:—

JOWAR

Year	Acreage (1,000 acres)	Yield (1,000 tons)
1929-30 ..	35,236	6,878
1930-31 ..	35,173	6,928
1931-32 ..	33,887	6,149
1932-33 ..	33,449	6,412
1933-34 ..	32,167	6,138
1934-35 ..	33,478	6,255
1935-36 ..	32,825	6,159
1936-37 ..	37,220	7,098
1937-38 ..	33,489	6,506
1938-39 ..	33,812	6,435

Bajra is another millet grown both in Northern and Southern India where it is known as Cumbu. The silky feel of its grain has earned for it the name of pearl millet, but its hold on the Indian ryot is chiefly due to its easy cultivation. It tolerates poorer soils and scantier rainfall than others of its class and provides food and fodder for man and his cattle. In food value its grains are regarded as being much richer than rice and in this respect ranks only next to Ragi, another of the millet group. Its extensive cultivation can be gauged from the following figures:—

BAJRA

Year	Acreage (000 acres)	Yield (000 tons)
1929-30 ..	17,271	2,284
1930-31 ..	17,524	2,583
1931-32 ..	18,310	2,673
1932-33 ..	18,699	2,598
1933-34 ..	16,552	2,128
1934-35 ..	17,031	2,549
1935-36 ..	16,911	2,681
1936-37 ..	16,103	2,433
1937-38 ..	17,242	2,625

Bajra, too, is not an export crop and like ragi which is akin to it in all respects—richness in food value, fodder value and easy cultivation—is mainly the poor man's food. Many consider ragi as domesticated grass but its growth is mainly confined to Peninsular India.

GRAINS AND PULSES

Next in importance to the cereals is the group of pulses or the various grams or dal as they are popularly known. There is in this country quite a good range of pulse crops the value of which is twofold. From the point of view of nutrition, the pulses help to balance the diet, these invariably supplying the protein element as against the starch of rice. Secondly, these are builders of soil fertility on account of their power to absorb nitrogen from the air through their roots and so are of great value as an ideal crop for rotation. The practical utility of the pulse crop has been demonstrated at an experimental agricultural station where it has been found that the effect of a gram crop was enough to wipe all differences between manurial treatment given to the succeeding grain crop. Hence these are usually grown as mixed crops particularly with millets, the latter ripening first and therefore being harvested first. Again these provide the fodder for the cattle, since both their seeds and stem are excellent cattle fodder. The conditions of cultivation are also less rigorous in the case of pulses than in those of rice or wheat. These require comparatively less rainfall and less attention from the ryot.

There is quite a good variety of grains and pulses in the country. Tur also called *Arhar* or rahar is widely cultivated, being the most important of the group; grown chiefly in the rainy season, while grams proper is mainly a dry crop. The annual areas and yields of gram for the year 1929-30 to 1938-39 are given below:—

Year	Acreage (000 acres)	Yield (000 tons)
1929-30 ..	13,175	3,051
1930-31 ..	15,223	3,400
1931-32 ..	17,735	3,766
1932-33 ..	15,803	3,439
1933-34 ..	18,443	3,737
1934-35 ..	15,638	3,629
1935-36 ..	16,687	3,840
1936-37 ..	17,626	4,115
1937-38 ..	15,742	3,525
1938-39 ..	17,216	3,540

There does not appear to be any extensive export trade in grains and pulses, whatever grown being consumed in the country. What little export there is, is confined to those places where Indian emigrants have settled on a permanent or semi-permanent basis. The possibility of uses of these pulses by the neighbouring countries might be advantageously considered both by the Indian and the visiting delegations.

JUTE

India holds the world monopoly for the cultivation of jute on a commercial scale. The growing of the crop is confined almost entirely to the Gangetic delta and the Brahmaputra valley. Jute is a fibre extracted from the bark of the plant by retting in water, and then washed and dried. Bengal produces about 90 per cent of the total yield, and the remaining quantity is grown in the adjacent provinces of Bihar, Orissa and Assam. The importance of jute to the world does not arise from its being a pre-eminent commercial product alone; its bearing on the entire economic structure of the province itself, is unique. Though, in respect of the total acreage sown in Bengal, jute is only second to rice, covering 10 per cent as compared with 72.5 per cent under rice (mean percentage for the decade 1921-30), the jute trade is in sharp contrast with that of rice, inasmuch as the former brings in money from outside the country. The value of the annual exports of jute and jute manufactures accounts for a remarkably high percentage, not only of the total value of the provincial exports, but also of the entire Indian exports. While jute and jute manufactures account for about 50 per cent of the total value of exports from Bengal, these two items alone contribute more than 25 per cent of the total value of exports from India.

While the figures given above prove the immense importance of jute to the agricultural interests of Bengal, its superiority as the most remunerative crop from the point of view of garicultural economy is equally commendable. Of the four important agricultural products in India, *viz.*, rice, wheat, jute and cotton, as far as the market value of the produce per acre is concerned, jute occupies distinctly the highest place, as illustrated by the following table:—

(Average Figures for 10 years, 1904-13 Inclusive)

Crops	Area in 1,000 acres.	Yield 000's omitted	Yield per acre.	Wholesale price per md.	Market value of produce per acre.
		Tons	Mds.	Rs.	Rs.
Rice ..	569,895	24,025	11.5	4.75	54.62
Wheat ..	28,145	8,752	8.4	3.73	31.33
		Bales			
Cotton ..	20,980	3,837	0.88	28.30	
Jute ..	3,114	8,299	12.9	9.68	128.79

From the above table, it can be ascertained that, while the value per acre of jute produced amounts to about Rs. 129, the value of rice, the chief food crop of India, amounts to only Rs. 55, whereas the cotton crop yields Rs. 25 per acre.

Though Bengal possesses the world monopoly for the most remunerative agricultural product in India, it cannot boast of having utilized the unique position to its best advantage. For, the cultivation of jute is not regulated according to the requirements of the world. It is this maladjustment between production and demand that made jute the worst victim of the recent world trade depression. The average price of jute realised during the decade before the depression and th depression period would give an idea of the steep fall in the price of jute.

	Average yearly production	Average harvest price per md.	Annual values (In crore Rs.)
1930-34 ..	4.19 ,,	Rs. 3-10-0	15.20
1919-29 ..	4.70 mds.	Rs. 9-6-0	44.06

The average income from the crop during the depression period has fallen to Rs. 15 crores from Rs. 44 crores during the decade immediately preceding the depression. Such a terrible loss to the income of the people threatened to have great repercussions on the income of the Government. Provincial Governments were urged from all quarters for immediate assistance to the cultivators. But the Government appeared to be half-hearted in taking any immediate measures. At last, the Bengal Legislative Council appointed a Jute Enquiry Committee, which, after about two years of enquiry, submitted a report. Meanwhile, the country had been caught in the grip of depression, and suffering from its effects. After great deliberation, and much leisurely consideration of the Jute Enquiry Committee Report, what the Government of Bengal decided was to launch a campaign amongst the cultivators for the voluntary restriction of the acreage under jute in the 1934-35 season. The very announcement of the Government resulted in a substantial improvement in the price of jute, though the bulk of the trade was sceptical of any success. The propaganda was not considered a great success at the end of the season; for, though the production showed a small reduction over the previous season, it was partly due to adverse weather conditions. Again, in the succeeding three seasons, Government stuck to the same policy and started voluntary restriction propaganda. But the increased production of jute during the three seasons proved voluntary restriction to be a disastrous failure; and had it not been for the crisis of unrestricted production in the industry, jute would not have improved from the low level.

The season 1938-39 was notable for the sharp fluctuations in prices for jute. Early in the season the floods in East Bengal and the depressed conditions in the jute industry accounted for a sharp fall in prices and the lowest level for many years, of Rs. 28 in the futures market, was recorded. The Government of Bengal was at a loss to devise ways and means to improve the position of the ryot. At last it was decided to put an end to the state of over-production in the industry and improving the statistical position thereby bringing about an improvement in the prices for jute manufactures. It was believed that the higher prices for jute manufactures consequent on the reduction in production would be to a certain extent reflected in the prices for jute. Not only was the rot in the jute market arrested, but a considerable improvement in prices recorded. Only the beginning of 1939 saw a boom in jute prices. The huge orders for sandbags and the increase in exports combined with a short crop caused a scarcity of supplies. The highest price of Rs. 62-4 was recorded in the futures market.

The season 1939-40 is well-known for the hectic activity in both the jute and jute manufactures markets. Even shortly before the declaration of war, there was no indication of the prosperous times that were ahead for the ryot and the industry nor was it ever expected that there would be such a jumpy rise in prices in three months after the declaration of war.

It would be remembered that just in the middle of August, 1939, it was found necessary to promulgate an ordinance by the Government of Bengal fixing the minimum prices at Rs. 36 for jute in the futures market Rs. 8-14 for 9 Porters hessian. This prevented a fall in prices to below the minimum price for November position in the hessian *fatka* market.

After September, however, the story was different. The placing of orders for sandbags led to a mad rush for buying by mills. There was a sudden jump to Rs. 60 per bale but the Indian Jute Mills Association by concluding a gentlemen's agreement between the members of the Association for a time succeeded in keeping down the price. The announcement of a big order for 50 crores of sandbags and the booming conditions in other commodity markets, however, could not keep down prices. The members to the "Gentlemen's Agreement" themselves were afraid that they would not be able to buy their stocks of jute at the maximum prices they had fixed. The violation of the terms of the agreement by certain members led eventually to the abandonment of the gentlemen's agreement. In December first week the peak levels for the war period were touched and the quotation in the futures market was at one time as much as Rs. 125. The rise in prices was rather overdone and as further orders for sandbags were not received, there was a tendency to sell at the higher levels. There were also various sorts of rumours afloat in the market, among them being the possibility of the fixation of maximum prices. For some time, the quotation was fluctuating around Rs. 100 but the decision to postpone deliveries of sandbags from April to August caused heavy selling and in a short time there was a slump from Rs. 92 to Rs. 72. The excellent prospects regarding the new crop and the absence of new orders for sandbags had a depressing effect and the prices gradually declined. As the satta for new crop considerably widened there was a tendency on the part of mills to sell their stocks of jute, old crop, and cover them with purchases of new crop. This resulted in the quotation coming down to Rs. 59-14. The reports regarding the fixation of the minimum prices caused a sudden recovery. For some considerable time, there were persistent rumours regarding the fixation of minimum prices. At the conference of jute interests held early in May, 1940, under the presidentship of the Governor, the Government expressed their anxiety to prevent any further deterioration in the prices for new crop. But there was no indication of the measures that the Government proposed to take to achieve such an end. In the middle of May, 1940, however, an Ordinance was promulgated fixing the minimum and maximum prices for jute and jute manufactures, the minimum and the maximum prices for jute being Rs. 60 and 90 in the futures market respectively and those for 9 Porters hessian being Rs. 13 and Rs. 21 respectively. There was considerable objection to this action on the part of the Government as it was pointed out that any attempt at artificially fixing the level of prices would eventually harm the interests of both the ryot and the manufacturer.

After a good deal of experimentation and negotiation it was decided as a result of the Delhi conference that mills should buy a specified quantity within specified dates at the revised minimum rates submitted by the I.J.M.A.

The policy of restriction pursued by the Bengal Government as a result of the Delhi Conference, it must be said, was a complete success. For, it will be remembered that at the end of 1940-41 season there was a large carry forward and that even after the substantial purchases by the mills under the Gentlemen's Agreement, which were mostly completed by April, 1941, it was found necessary to maintain minimum prices till the end of the season in order to prevent any appreciable decline in values. This maintenance of minimum prices for old crop combined with reports that there would be a drastic restriction of the area under crop for the current season had a steadying influence. After a good deal of controversy it was finally decided that the area under the crop for the 1940-41 season should be restricted to one-third of the area for the previous season. The Government of Bengal carried out a survey of the lands under the jute crop in the 1939-40 season and accordingly granted licenses to growers to sow jute for the current season. This policy of drastic restriction resulted in a smaller crop.

The year 1942 began under unhappy circumstances for the jute trade as it dashed all hopes regarding the possibility of an appreciable increase in consumption of jute by mills in Bengal and by overseas consumers. It will perhaps be remembered that in the latter half of 1941 there was a smart recovery in values and that shipments were substantially higher. The Japanese entry into the war completely altered the situation as the Pacific route was the only safe one before December 1942 and that it was by this route that hessian and jute shipments were effected to U.S.A. and other American markets. The initial dislocation to the shipping position became very difficult and Calcutta had to be closed for several months for shipping. The lack of internal transport facilities and the congestion in the Western port of Bombay naturally meant a smaller offtake and in May 1942 it was found necessary by mills to reduce their working hours from 60 to 54 per week. The reduction in exports of jute and jute manufactures naturally meant lower prices for the raw material, especially as it was expected that it would be possible to effect substantial shipments and it was decided to increase the crop for 1941-42 to 10 annas of the area registered for June 1940 under the Bengal Regulation Act. The decision to effect an increase in the area under the crop was made in November, 1941 and it was pointed out that the Bengal Government were rather over-optimistic in their expectations of jute requirements of 1941-42. It was pointed out however, that the Bengal Government had the assurance of the Central Government in the matter and that the U.S. authorities had indicated their willingness to take the whole of the surplus crop and that the necessary shipping freight would be available. These decisions, it will be remembered, were before the Japanese entry into the war which came as a surprise to everyone. Even after the Japanese entry into the war, it was believed that it would be possible to find the necessary amount of shipping but the initial successes of the Japanese dashed all hopes in this regard and the appeal by the Premier in May to effect a reduction in the crop to 8 annas of the area in the 1940 crop, and to treat it as if the license for that crop was only for 8 annas was in vain as sowings in several districts had reached an advanced stage. With both jute and jute manufactures markets depressed, the ryot therefore had no hope of realising attractive prices for his crop. Till September 1942 rather depressed conditions were witnessed. The recovery in prices after September for jute would not have come about but for the peculiar conditions created by the difficulty in regard to internal transport facilities. Mills started the season 1941-42 with a low level of stocks. Even if plentiful supplies were available, it was not possible to get the necessary transport facilities either by river or by rail and this was felt most when the bulk of the crop began to move. Mills were anxious to replenish their low level of stocks and offered huge premiums for ready supplies. The anxiety of balers to get ready supplies from mofussil districts and pay higher prices to country boats and river steam companies, resulted in a rise in the mofussil prices too. Quotations towards the close of the year were at the highest levels.

There is considerable speculation regarding the size of the crop for 1942-43 season. By the end of December only 38 lakhs bales out of the new crop has been moved plus an export of 8 lakhs bales. The trade estimates of 1941-42 crop are around 100 lakhs bales. The surplus of 1942-43 crop as at the end of 1942 was thus around 54 lakhs bales. As it was believed that it would not be possible to export more than 20 lakhs bales and mill consumption was not expected to be more than 6 lakhs bales, it was generally advocated that the crop for 1942-43 should be considerably lower than that for 1941-42. So far no final decision has been reached but indications are that the next crop will be a definitely smaller one in view of the acute food situation within the country and the insuperable difficulties in regard to transport facilities.

As regards the policy of restriction being extended to other provinces the U. P. Government have expressed their willingness to take part in the scheme. It is hoped that the Governments of Bihar and Assam will help the Bengal Government in their policy of restriction.

The area under jute is normally between 20 to 25 lakhs of acres (its maximum was reached in 1907-08 with 38.8 lakhs of acres, and minimum in 1921-22 with 15.4 lakhs of acres). The average holding of the jute growing ryot is 3 acres, of which he puts 1 acre under jute. The normal outturn of jute per acre is 3.7 bales in Dacca and Chittagong Divisions, 3.5 bales in Rajshahi Division, 3.2 in the Presidency and Burdwan Divisions, 3.3 in Bihar and Orissa and 3.5 in Assam. The sowing period extends from March to May, and harvesting is carried on in June and July.

The following table gives the area under jute in the three provinces of India for the last ten years and 1920:—

Year	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.
1920 ..	2,169,000	5,247,000	179,000	330,000	125,000	275,000	2,509,000	5,915,000
1930 ..	3,062,300	9,996,000*	238,000	670,000†	185,300	595,000	3,485,600	11,231,000
1931 ..	1,613,700	5,002,700*	148,800	367,200†	99,300	196,600	1,861,800	5,565,500
1932 ..	1,845,700	6,213,500*	170,000	518,500†	127,400	340,100	2,143,100	7,097,100
1933 ..	2,168,700	7,092,100*	192,100	473,200†	130,200	367,900	2,491,000	8,012,000
1934 ..	2,347,700	7,749,500*	173,800	472,000†	148,600	303,900	2,670,100	8,525,400
1935 ..	1,917,500	6,538,000*	145,600	389,000†	117,800	312,600	2,180,900	7,239,600
1936 ..	2,251,150	8,035,900*	477,100	1,138,300†	157,500	461,700	2,885,750	9,635,900
1937 ..	2,208,900	7,072,200*	460,600	954,300†	219,150	654,600	2,888,600	8,681,100
1938 ..	2,521,400	5,754,850*	327,400	488,200†	25,000	451,300	3,073,900	6,694,500
1939 ..	2,549,600	8,32,200*	288,000	767,800†	281,100	557,300	3,118,700	9,646,300
1940 ..	4,938,850	11,465,200	310,600	637,350	356,200	918,500	5,668,750	13,186,450

* Includes Cooch Behar & Tripura States

† Including imports from Nepal

The above figures are taken from the forecast issued by the Government. But private estimates of the trade have always proved to be more reliable. The following table shows the actual production of jute for the past four seasons:—

(In lakhs bales)

Season	Calcutta Imports	Exports from Chittagong	Total Crop.
1933-34 ..	86.45	3.01	89.44
1934-35 ..	94.92	3.01	97.91
1935-36 ..	79.92	1.58	81.49
1936-37 ..	104.53	2.47	106.97
1937-38 ..	97.28	2.34	103.08
1938-39 ..	87.21	1.91	93.62
1939-40 ..	94.48	..	..

Indian mills are buyers of Jat, District and Northern jute mostly, but they also buy small quantities of the Tossa and Desi varieties. The United Kingdom and Germany are our largest buyers of jute. Dundee purchases high class jute of all grades, and particularly Desi and Tossa. The Continent purchases white jute of Northern and Western grades, and also ordinary quality of Desi and Tossa.

Calcutta is the chief centre of the jute trade. Around the city on the banks of the Hooghly are situated many jute mills. Jute is purchased from cultivators in the mofussil markets, and sent to Calcutta and mill stations in kutcha bales by boats and rail. In Calcutta, it is assorted and pressed into pucca bales of 400 lbs. each by the balers. The jute balers have got an organisation of their own called the Calcutta Jute Balers' Association, who practically control the sales of ready jute. There is also a futures market for jute in Calcutta managed by the East India Jute Association, which is an organisation limited by guarantee and holding a membership of about 300. The futures market is controlled by a Board consisting of members of the various organisations of the trade. The futures market has got an important bearing in the fluctuations of jute prices.

In 1936, the Government of India sanctioned the appointment of an Indian Central Jute Committee, which has begun to function from the beginning of 1937. The work of the Committee includes the improvement of the crop, forecasting and statistics, production, testing and distribution of seeds, banking and transport facilities and improvement of marketing of jute. The personnel of the

committee includes all interests belonging to the jute trade.

In 1937 the Indian Central Jute Committee was established with its headquarters at Calcutta. The Committee has been registered under the Registration of Societies Act XXI of 1860 and a grant of Rs. 5 lakhs per year has been sanctioned by the Government. Soon after the establishment of the office the Committee has taken up the work of making a comprehensive survey of the jute areas with a view to provide the trade with an accurate forecast of the jute crop. An enquiry into the marketing and transport of jute has been programmed. A laboratory for experimental spinning for research purposes is in the course of contruction. The collection of accurate statistics is also undertaken by the Committee. The activities of the Committee are watched with keen interest by the trade.

COTTON

India is the largest producer of cotton in the world next to the United States of America. Though the total area sown under cotton amounts to only less than a third of that under rice, its importance may, in one view, be said to be even greater than that of rice, inasmuch as it is a money crop. Besides supplying the raw material for a staple industry, cotton forms a valuable item of India's export trade. More than 50 per cent. of the total production is exported to foreign countries, Japan being the chief customer, while about 40 per cent. of the crop is absorbed by the mills in India and the remaining few lakhs of bales utilised by the cottage industry of handspinning and weaving.

In spite of the fact that more than half the total production of Indian cotton finds an export outlet, it does not figure as much in the international trade as the American or Egyptian cotton. For, with the exception of Japan, whose takings alone amount to more than half of the total exports, there is no large single customer for Indian cotton. This drawback of Indian cotton is due mainly to its inferior quality as compared with the American or Egyptian product. Though several successful experiments have been carried out by the Government in the past few years and the growth of improved cotton has been encouraged, a good deal remains to be done before the Indian variety attains the standard of the foreign growths.

Apart from the question of quality, another important factor which goes to reduce the competitive ability of Indian cotton in the world trade is the backwardness of cultivation. That cotton growing in this country is still, like the rest of our agriculture, on primitive lines, is clearly evident from the extremely low yield per acre of Indian cotton. While in Egypt, the average yield per acre is about 400 lbs., and in the United States 170 to 200 lbs., in India it is only about 80 lbs. per acre, which is slightly more than half the world average of 150 lbs. The low yield per acre in India is not confined to cotton alone but it is a general complaint in all the other commodities grown in India, though one has to admit that in the case of cotton it is unreasonably low. Cotton cultivation thus offers not a little scope for the activities of the Imperial Council of Agricultural Research and the Indian Central Cotton Committee. Another important aspect of cotton in India is that its production is well spread over nearly all parts of the country and that measures for improving its position and prospects will shower their benefits on all provinces, unlike most economic measures, which may be represented to be partial to one province or two at the expense of the others. It is also significant that the cotton textile industry in India is not merely on a large scale and capitalist lines, but it also embraces a hand-loom industry, which is run as a cottage industry and which, with encouragement, is capable of becoming a very valuable support for the rural masses. Cotton spinning in the *Charka* and *Khaddar* making, which is said to be a part time household occupation of the poor agriculturists, is being revived and encouraged by the Indian National Congress. Cotton may, therefore, be said to run through the gamut of India's economic life and has, therefore, a far greater claim on State policy than any other single economic factor.

As already mentioned America is the world's largest producer of cotton and together with India she accounts for about 60 to 75 per cent. of the world's total production. The following table gives the figures of production for the various cotton producing countries of the world:—

WORLD'S COTTON CROPS

(In Thousands of bales of 500 lbs.)

Country	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39
United States—							
Lint ..	13,002	13,047	9,636	10,638	12,399	18,946	11,943
Linter ..	912	982	975	1,000	1,407	1,819	1,500
Total ..	13,914	14,029	10,611	11,638	13,806	20,765	13,443
Mexico	99	255	233	235	373	349	225
Brazil	438	958	1,309	1,539	1,707	2,075	1,877
Peru	237	278	336	370	400	415	393
Argentina	146	206	258	295	148	237	300
Other South American ..	39	76	70	100	100	128	130
India*	4,657	5,108	4,858	5,728	6,307	5,779 (a)	5,120 (a)
China	2,195	2,652	3,030	2,309	3,760	3,083	2,200
Japan and Korea ..	133	197	224	239	212	303	267
East Indies, etc. ..	13	14	20	20	16	17	17
U.S.S.R.	1,776	9,117	1,744	2,493	3,550	3,782	3,851
Persia	79	181	200	200	161	150	150
Iraq, Ceylon, etc. ..	†	†	2	4	8	16	16
Asia Minor etc. ..	68	191	258	345	422	453	555
Egypt	991	1,715	1,511	1,707	1,821	2,202	1,668
Sudan	110	126	237	193	259	265	265
East Africa (British) ..	269	274	273	322	344	401	320
South Africa (British) ..	2	3	3	4	3	1	2
West Africa (British) ..	20	23	47	52	40	24	25
Non-British Africa ..	121	156	192	190	234	300	300
West Indies (British) ..	2	3	4	4	5	5	4
West Indies (Others) ..	26	23	30	23	27	21	20
Australia, etc. ..	11	18	41	16	15	10	10
World's Total ..	25,345	28,403	25,481	28,026	33,661	40,772	31,158
World's (exl. U.S.A.) ..	11,431	14,374	14,870	16,388	19,912	20,027	17,715
Percentage of Total ..	45.1	50.7	58.5	58.6	54.9	49.12	56.86

*Government estimate, 400 lb. bales. †Less than 500 bales.

It is interesting to note that while, during the last few years, America's share of the total output of cotton has been increasing, she has been losing ground in the world markets not only to her old rivals, but also to certain new countries which have increased their output and are still planning for further expansion of acreage under cotton. This development must be attributed to the comparatively higher price of cotton, which has resulted from the special measures taken by the Roosevelt Administration to maintain the price of raw cotton at a certain level without reference to world prices. The artificial raising of prices was attained by the American Government by granting loans of 12 cents. per lb. of cotton to farmers, thus strengthening their holding power, and by purchasing large quantities of cotton at a fixed minimum. This, no doubt, helped to maintain the price of American cotton at a high level in the beginning. But ever since the decision of the American Supreme Court in 1935 declaring the N.R.A. unconstitutional and later the Agricultural Adjustment Act and the Bankhead Cotton Control Act, the whole structure of President Roosevelt's Recovery Plan has been upset. The disposal of the enormous holdings of Cotton in the hands of the American Government became a problem. The high artificial price of American cotton was taken advantage of by foreign growers who steadily increased their output, which consequently reduced the export demand of American cotton. The terms of the loan were modified in 1936 and a ten cent. loan with a subsidy of 2 cents per lb. was announced. But the absence of any effective control increased the production of cotton to above 12 million bales in 1936 and in 1937 the production has further increased to exceed 16 million bales. This big increase in the American cotton output and a further reduction of the Government loan to 9 cents per lb. with a subsidy of 3 cents caused a disastrous landslide in the price of cotton in the second and third quarters of 1937.

It will be noticed that the production of Indian cotton, too, has been increasing during

the past few years, while at the same time the favourable parity of Indian cotton prices helped to increase our exports. The following table gives the volume and value of our cotton exports during the last six years and the perwar average:—

(*Quantity in Thousands of Bales of* 400 *lbs.*) (*Value in Lakhs of Rupees*)

Country to which Exported	Pre-War Average	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	Pre-War Average	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38
United Kingdom	122	168	342	347	456	601	395	172	342	45	653	428	335	352
Other parts of British Empire	30	2	3	3	3	4	5	41	3	5	5	5	6	16
Japan ..	1,012	1,085	1,105	2,053	1,759	25,99	1,359	1,451	2,153	1,794	2,541	1,479	1,127	849
Italy ..	233	151	261	278	155	165	142	318	255	142	170	157	69	40
France ..	109	123	161	148	165	155	95	151	135	16	158	94	145	177
China exclusive of Hongkong etc.) ..	31	134	315	142	100	72	69	43	129	105	72	69	171	592
Belgium ..	277	128	144	153	225	316	197	368	149	220	321	210	124	57
Spain ..	50	50	55	60	68	27	...	73	55	64	25	...	1	11
Germany ..	351	151	246	153	258	213	168	445	137	261	222	171	158	58
Other Countries	192	71	159	153	199	166	302	266	140	173	274	290	...	250
Total British Empire ..	152	170	345	350	459	605	400	213	345	456	658	433	361	368
Total Foreign Countries	2,255	1,893	2,476	3,140	2,938	3,663	2,332	3,115	3,115	3,321	3,783	2,470	2,025	202
Grand Total	2,407	2,043	2,821	3,490	3,397	4,268	2,732	3,328	3,495	3,377	4,441	2,903	2,386	2,389

With the entry of Japan into the war the lot of the cotton grower has become difficult. As our readers are aware Japan was the largest consumer of short staple cotton of which we grew in plenty. Even before the war, with the freezing of Japanese assets in India exports of cotton were considerably lower though still in an appreciable quantity. When that country became a belligerent, even this reduced quantity could not be exported. The problem was one of disposal of the surplus of nearly 4 lakhs bales of short staple cotton. Intensification of the production of the Indian Cotton Textile industry was expected to take a portion of the surplus. In fact the Indian industry's consumption has improved by over 800,000 bales in the past two years and the problem at the moment is one of speeding up production and finding the necessary labour. But for the difficulties in regard to labour and the disturbance on account of the national movement within the country, it would perhaps have been possible to report a consumption as high as 4½ lakhs bales in the cotton year 1942-43. It will not be possible for mills, however, to maintain production even at the level of 1941-42 as the Ahmedabad mills began operations only recently in full strength. Soon after Japan's entry into the war the cotton market was very depressed and Broach April-May came down to Rs. 170 from Rs. 224 per candy. The Government had to come out with repeated statements regarding their intention to support the cotton grower. Actually, before the budget of 1942-43 it was decided to double the import duty on cotton in order to create a fund out of the proceeds of the import duty, to afford relief to the grower. He was at the same time asked to reduce the acreage under the crop for 1942-43. As a result of actual purchases by the Government's agencies in the mofussil district and the reduction of the area under crop for 1942-43, there has been a recovery in values and it can be safely said that though the money value of the crop is considerably lower, the ryot has not lost very much on balance and has derived some benefit from the food crops grown on the released area. Compensation also was afforded by the Government authorities.

In order to effect economy in transport space and provide a better standard for contracts, it was decided by the East Indian Cotton Association to revise hedge contracts and absorb transactions in Broach, Oomras and Bengals. Jharilla cotton was replaced instead. At the present moment forward trading is possible only in Jharilla varieties.

The cotton grower is dependent only on Indian mills. It is not possible to effect any shipments to the U. K. under the Indo-British agreement in view of the difficulties in regard to the shipping position. It has not been possible also to effect any increase in exports to other countries. For the duration of the war cotton cultivation especially, of the short staple varieties, should be discouraged and efforts to cultivate long staple varieties encouraged.

Next to Japan, the principal market for Indian cotton is the United Kingdom. Thus, it will be found that the greater portion of India's total exports of cotton is absorbed by Japan and the United Kingdom.

Though a considerable part of the production funds an export outlet, it must not be forgotten that India has a large cotton mill industry of her own, which has been expanding with rapid strides during the last few years. The annual consumption of Indian cotton by mills in India amounts to about 2,750,000 bales. The figure for 1938-39 beat all previous records. The continuance of production at a high level accounted for a total internal consumption of Indian Cotton of 3,306 100 bales.

As has been already pointed out the production is spread over the whole of India. Bombay Presidency, and the Punjab are the two largest producing centres. The following table gives the distribution of the acreage of cotton in India during the season 1940-41:—

	Area in 1,000 Acres	Yield in 1,000 Bales
Bombay ..	5,478	1,011
C. P. & Berar ..	3,512	885
Punjab ..	3,400	1,624
Madras ..	2,391	504
United Provinces ..	408	149
Sind ..	974	360
Hyderabad ..	3,458	547
Central India ..	1,137	231
Baroda ..	811	175
Gwalior ..	566	109
Rajputana ..	433	104
Mysore ..	88	13
Other Provinces ..	246	..
Total ..	22,902	5,785

It may be easily gussed from a glance at the above table that, as cotton production is spread over a wide variety of climatic conditions, there is no uniformity in respect of the season for sowing and planting. Another circumstance tending to aggravate this lack of uniformity is that in certain areas, the cotton lands are not irrigated but rain-fed. The Bombay presidency occupies a pre-eminent position in the production of cotton, and in the other provinces, its place in the provincial economy can hardly be underrated. There is a wide range of Indian cottons, the chief of which are Broach, Khandesh, Kumta-Dharwar and Sind in Bombay; Oomras in Central Provinces and Berar; Cocanada, Kambodia, Karungani and Tinnevelly in Madras Presidency, Sind-Punjab and Punjab-American in the Punjab; Bengals in United Provinces and Comilla of Bengal and the other North-Eastern provinces. Under the Indian Cotton Cess Act, a cess of As. 2 per Standard bale of cotton is levied on the Indian cotton exported to foreign countries. On cotton consumed in the Indian mills, a cess of six pies per lb. is levied. This cess forms the funds of the Indian Central Cotton Committee, which devotes it to improvements in cotton-growing, marketing and for carrying on research work in this connection. The cotton trade, however, is regulated in the Bombay presidency by the East India Cotton Association, which is a statutory body with power to control transactions in raw cotton. It was in 1918 that provision was made for a unitary control of the dealings in raw cotton, which, before that year, were conducted under the rules of the Bombay Cotton Trade Association or of the Bombay Cotton Exchange. The East India Cotton Association came into being in 1932 and, since then, the cotton trade has functioned smoothly and efficiently. In other parts of India, the cotton trade is not so organised as in Bombay, but the ready marketability of this commodity and the busy export trade have brought about close links between the cotton-grower and the exporting houses through a series of middlemen, who may be said to be common to almost all the principal agricultural staples. There is a general movement in favour of bringing the marketing of cotton within the scope of the co-operative movement. But, this, as most other reforms in India's rural economy, would seem to be a slow progress.

Apart from these problems connected with the improvement in methods of cultivation and of marketing, the question of enabling the area under cotton and the total production to regain the levels of the pre-depression period has to be tackled by the Central Cotton Committee. For, it is to be remembered the area under cotton underwent a steady decline from 1929-30 up to 1923-33 and that thereafter there was a slight rise in 1933-34. 1934-35, however, according to the revised figures, failed to keep up the upward trend. The position may be better appreciated by a glance at the following table:—

	Acreage (In 1,000's)	Production bales (In 1,000's)
1929-30 ..	25,922	5,243
1930-31 ..	23,812	5,224
1931-32 ..	23,522	4,064
1932-33 ..	22,483	4,657
1933-34 ..	24,137	5,108
1934-35 ..	23,972	4,858
1935-36 ..	25,999	5,933
1936-37 ..	25,219	6,307
1937-38 ..	23,049	4,797
1939-40 ..	21,356	4,942
1940-41 ..	22,902	5,785

SESAMUM

Sesamum is one of the most important oilseed grown in India and it ranks next to groundnuts in respect of acreage grown. While being an article of large consumption within the country, it occupies an important place in our export trade in oilseeds.

It is mainly a *kharif* (autumn) crop generally sown between May and July and harvested from October to December. A *rabi* or summer variety is also grown in certain tracts. This is sown in January and February and harvested between May and July. The crop is raised in almost all provinces in India, but the more important zones lie in Burma, Madras, Bombay and Central Provinces. There are five well-known varieties grown, *viz.*, White, Black, Mixed, Yellow and Red. The White quality is superior to all others as it contains the highest percentage of oil.

The acreage under sesamum does not show any appreciable change from year to year. The peak year in recent years was in 1932-33 when the total area under the crop was estimated at 6,256,000 acres, yielding 551,000 tons. The average for the quinquennium, 1895-96 to 1899-1900, was 4,019,000 acres and 348,000 tons, which rose to 5,122,000 acres and 467,000 tons in the post-war quinquennium, 1920-21 to 1924-25. The following table gives the total acreage and outturn of the crop in the various provinces during the 1940-41 season:—

Provinces and States.	(000's omitted). Area (acres)	Yield (tons)
United Provinces ..	1,283	126
Madras ..	752	69
Bombay* ..	531	54
C. P. & Berar ..	477	34
Bengal ..	173	33
Bihar ..	117	17
Punjab ..	80	8
Orissa ..	99	14
Sind* ..	4	..
Ajmer-Merwara ..	11	..
Hyderabad ..	406	29
Bhopal ..	53	4
Baroda ..	42	2
Kotah ..	51	4
Total ..	4,079	394

*Including Indian States.

The export trade in sesamum has been gradually dwindling since the War. During the pre-war period more than 25 per cent of the total production of sesamum in India was shipped to foreign countries, but the percentage had fallen to an insignificant level in 1930-31. Since then, although there has been a recovery, the former level would, perhaps, never be reached, for sesamum has been displaced in the world markets by other vegetable oils such as groundnut and coconut. The most significant feature in our export trade during the past several years is the loss of our foreign markets. While in the pre-war period France, Belgium, Austria and Italy have been our important customers, our trade with these countries has now been entirely lost. The distribution of our exports of sesamum is shown in the following table:—

(In hundreds of tons).

	Averages. Pre-War	War	Post-War	1936-37	1937-38
France	43.1	15.7	7.6	..	..
Italy	13.0	4.1	8.7	4	3
Belgium	26.2	1.1	2.1	..	..
Austria	20.2	8	8	..	..
Ceylon	..	..	..	1.7	2.0
Arabia	..	..	..	6	0.5
Other countries	16.8	10.9	8.4	11.9	7.3
Total	119.3	32.6	27.6	14.2	10.1*

*Includes 4.6 to Burma.

Our foreign customers in sesamum have been constantly changing. Towards the close of the last century, France was the principal buyer, but during the pre-war period Belgium and Austria-Hungary shared more or less equally with France. Italy and U.S.A. emerged as the chief buyers in the immediate post-war years and to-day we have not a single foreign customer, so to speak.

It is, however, satisfactory to note that, although our exports of sesamum seeds have declined since the war, there has been a progressive improvement in our export of sesamum oil as will be seen from the following table:—

Exports of Sesamum (*til* or *jinjili*) oil.
(In gallons).

1926-27	61,971
1927-28	98,596
1929-30	160,583
1931-32	95,642
1933-34	104,101
1935-36	150,025
1936-37	281,449
1937-38	251,827

COTTON SEED

By virtue of her position as the second largest producer of raw cotton, India has a large annual production of cottonseed. But the bulk of the commodity is consumed within the country as an important cattle food and only a small percentage is exported to foreign countries.

Indian cottonseed is inferior in quality to most foreign growths. Whereas the Egyptian and Russian cottonseeds contain 23 per cent and 20 per cent of oil, the percentage of oil content in the Indian variety is only about 18½ per cent. There are five important varieties of Indian cottonseed, *viz.*, Bombay, American, Delhi-Cawnpore, Comilla and Rangoon. Of these only the first two are considered to be of superior quality. Bombay is the main port for cotton seed export. Russia and Egypt are the chief competitors of India in the United Kingdom market.

Till the beginning of the present century there was practically no export trade in this commodity. In 1900, the scarcity of other vegetable oils led to inquiry from United Kingdom for Indian cottonseed and since then the export of the seed increased gradually every year, until it reached about 153,000 tons. The depression years saw a precipitous fall in our exports of cottonseed, which fell out of all proportion to 2,389 tons in 1932-33. Since then, our export trade has not recovered. Our export of cottonseed in 1936-37 amounted to about 9,000 tons, against 730 tons and 636 tons in the two preceding years respectively and the pre-war average of 240,000 tons.

The following table gives the world production of cottonseed:—

(In thousand quintals).

	1932.33	1934.35	1935.36	1938.39'
U. S. A. ..	52,450	38,850	49,950	47,720'
India ..	19,700	20,500	26,700	21,000'
China ..	11,400	15,800	19,800	...
Africa ..	7,210	10,390	12,770	11,480'
S. America	4,110	10,060	11,900	14,300'
U. S. S. R. ..	8,400	7,700	15,500	19,000'
World ..	105,400	107,000	142,200	126,200'

The production in the United States of America considerably declined in 1934-35, which was due to the restricted production of cotton in America. It is significant that, while the production in America has declined, other countries have been gradually increasing their production.

BANKING IN 1941-42

The important feature of the present war is the resiliency shown by the Indian banking system to the shocks caused in the several stages by the changing fortunes of the Allies. It is satisfactory to note that during the four years of the war period, Indian joint-stock banks have survived several crises and that at the present moment are more firmly placed than ever. The real difficulties in the war period were experienced when there was a spate of German successes following the fall of France, and when the country was not so well prepared as it is now to meet unforeseen contingencies. The abrupt rise in prices in the bullion markets in the second and third quarters of 1940, and the large withdrawals of deposits obliged many a banking institution to approach the Reserve Bank authorities for help. No great difficulties were experienced till November 1941, and the developments in the war situation though not quite to the liking of the Allies, afforded a certain measure of confidence regarding the ultimate outcome of the war. The entry of Japan into the war on the side of the Axis Powers came as a big surprise to many, and the withdrawal of funds on a large scale affected the smaller institutions particularly and most of these institutions could not even keep the minimum statutory deposits with the Reserve Bank and had to pay penal interest. The Imperial Bank advanced money against their investment portfolio. The year 1942 thus began under very unhappy circumstances and conditions were none too pleasant till March of that year. It was only after April that the upward trend in deposits re-asserted itself and funds continued to accumulate at the hands of banks, the peak level for the year being reached towards the close of November 1942. By the end of December, there could possibly have been a further accumulation of funds at the hands of banks but for the first air raids on Calcutta by Japanese bombers. The withdrawal of deposits on the present occasion, however, was of very small dimensions and it did not take long for funds to come back to the same source. A new high record was established by the middle of January.

The impressive progress referred to will be noticed from the fact that total deposits have increased from Rs. 327.07 crores on January 2, 1942 to Rs. 457.83 crores on January 15, 1943. The increase in deposits is particularly pronounced in the case of Demand Liabilities, the figure on the two dates being Rs. 220.02 crores and Rs. 344.17 crores respectively. Time Liabilities did not show any appreciable increase till the end of the year and only during recent weeks investors have found it more advantageous to lock their funds with banks, and there is a net increase of Rs. 6.7 crores on balance, the figures on January 15, 1943 being Rs. 113.76 crores against Rs. 107.05 crores on January 2, 1942. This big accumulation of funds at the hands of banks has been mainly due to the expansion of currency against sterling securities, a process which was adopted by the Government of India in an increasing measure to pay their bills on account of services rendered and goods delivered to the United Nations, for which they received payment in sterling. The increase in currency notes against sterling securities was particularly pronounced in the last quarter of 1942. If a study is made of the rise in note circulation and bank deposits, one may note that, up to a certain point, there has been a parallel movement though one would tend to conclude that absorption of currency had been on a larger scale. The net increase in total deposits is Rs. 130 crores against a net expansion of currency for Rs. 220 crores.

The larger volume of surplus funds, however, was not in any way advantageous to banks as the problem with them was one of finding remunerative channels of investment. Trade advances were on a smaller scale in spite of the increased tempo of industrial activity on account of war preparations. The Government or the Government agencies themselves financed to a certain extent the necessities of manufacturers or dealers connected with the war effort, so that the usual lending institutions were not in a position to take advantage of the improved conditions in industry or trade. Export trade also was on a smaller scale and here again the bulk of the purchases was on account of the Government and directly financed by them. Crop movement was on a smaller scale as also crop finance. With the result that total advances in India were considerably lower at Rs. 81.03 crores at the end of November 1942 against Rs. 124.67 crores at the beginning of the year. Since November a greater demand has been noticeable for funds and the total of advances is considerably higher at Rs. 99.91 crores on January 15, 1943 though only Rs. 24 lower on balance. If it is remembered that the working capital of banks have increased by over Rs. 130 crores, the net available increase in funds is of the order of Rs. 150 crores. This increase is naturally reflected in the higher cash balance and deposits with the Reserve Bank, cash on hand being Rs. 15.13 crores on January 15, 1943 against Rs. 12.33 crores on January 2, 1942. Deposits with the Reserve Bank were Rs. 51.41 crores against Rs. 31.44 crores on the two dates. The peak level for the year was touched on October 31, 1942 at Rs. 68.93 crores. Even then the increase under these two heads is only about Rs. 23 crores against the increase in surplus funds of about Rs. 130 crores, that means that the major portion of the balance of Rs. 107 crores has found its way into investments either in bullion, stock exchange securities, Government securities or treasury bills.

As illustrating the position, the progress of the Imperial Bank in 1941 can be given here. On January 2, 1942, deposits were Rs. 100.61 crores what time investments in Government securities were Rs. 63 28 crores and other authorised investments Rs. 1.18 crores. Total advances were Rs. 39.49 crores and cash balances Rs. 15.13 crores. With the flight of funds from the smaller institutions, the deposits of the Imperial Bank grew steadily and the movement gathered momentum in the latter half of 1942 with the large doses of expansion in currency by the Reserve Bank. On January 15, 1943, the deposits of the Imperial Bank under various heads stood at the high altitude of Rs. 164.8 crores or an increase of over Rs. 55 crores, nearly 45 per cent of the total increase of the working capital of the banks in India. Investments on January 15, 1943, in Government securities were Rs. 116.78 crores or an increase of Rs. 53.5 crores over the figure for January 2, 1942. Other authorised investments were Rs. 1.34 crores against Rs. 1.19 crores on January 2, 1942. Loans and advances were Rs. 26.98 crores against Rs. 39.49 crores and cash balances were Rs. 29.68 crores against Rs. 15.13 crores. It will thus be seen that even with the substantial increase in the amount of cash balances, the rise in investments is very nearly the total of the increase in deposits. Ordinarily under such conditions, one would expect that banks would be finding it very difficult to make any appreciably high level of profits as it is in discounting bills and advances and loans for trade purposes that these institutions get the biggest margin of profit. The experience of the leading banks in 1942, however, shows that even with the smaller volume of advances it has been possible to report a substantially higher level of earnings and in the case of the important banks it has been possible to distribute higher dividends to shareholders. The Central Bank in particular has maintained a dividend of 8 per cent and paid a bonus of 2 per cent to its shareholders while the Bank of India paid a bonus of 1 per cent after maintaining the dividend at 11 per cent. This would seem rather surprising but if it is borne in mind that the bulk of the increase in deposits took place under current account, which means that banks had to pay out a very small, almost nominal, rate of interest to depositors there was the same margin or perhaps even more of profit between the income from investments and the amount payable to depositors though perhaps in view of the large volume of surplus funds and the unsettled conditions, it was necessary on the part of banks to keep a high liquid position. That is the reason why greater interest was shown by many of the institutions in the large treasury bills offers in the latter half of 1942 and it was possible for the Government of India to get as much as Rs. 10 crores a week what time even a Rs. 3 crores offer was considered to tax the capacity of the market. The floating debt of the Central Government increased from around Rs. 55 crores to over Rs. 100 crores in the short space of six months and this was not possible without the help of the smaller banks. The increase in the Imperial Bank's investments since August is only of the order of 27 crores so that it can be very reasonably surmised that India's joint stock banks have been able to pay as much as Rs. 27 crores on account of short-term bills to the Government. So far regarding the actual developments in 1942.

Reference was made earlier to the difficulties experienced by banks following the entry of Japan into the war on the side of the Axis Powers. It was pointed out that several of the smaller

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institutions were hard-pressed for funds on account of heavy withdrawals. The rapid fall of Singapore and the occupation of Burma by the Japanese created new problems and the position was further complicated, especially for South India which had large interests in the Far East. The Indian Overseas Bank, the Indian Bank and several other institutions were very badly affected and but for the skilful management of the authorities and the large resources of these banks, it would not have been possible to get over the crisis satisfactorily. The actual losses incurred were not very much in the case of the two banks mentioned above, and it was even to a certain extent offset by liability of these two institutions to the depositors in the areas affected. These losses were almost entirely written off from the earnings for the first half of 1942 so that it can now be said that the Indian banks are wholly free from the anxiety of their losses in the Japanese-occupied countries. In several cases accounts have been reconstructed and facilities extended to constituents who had previously accounts with these banks. The services rendered by the bank in this connection has been very much appreciated. Consequent on the liability of banks to furnish particulars regarding their activities in Burma, it was found necessary to promulgate an Ordinance excepting the banks from submitting to provisions in this regard. The Ordinance was promulgated by the Government of India amending sections 42 and 43 of the Reserve Bank Act so as to omit all reference to Burma. The effect of that Ordinance is that the returns of the scheduled banks since February 1942, refer to their position in India alone.

Scheduled Banks

Two more banks were included in the second schedule to the Reserve Bank of India Act during the quarter ended September, 1942. The two banks were (1) The National Savings Bank Limited, Bombay and (2) The Bharat Bank Limited, Delhi. Earlier in the year the number of banks was unchanged at 62, 17 of these being exchange banks and 45, other scheduled banks. The addition to the total number of scheduled banks was therefore two, bringing up the total to 64.



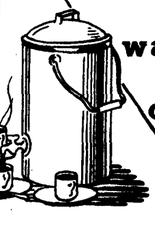
Soaring PRODUCTION

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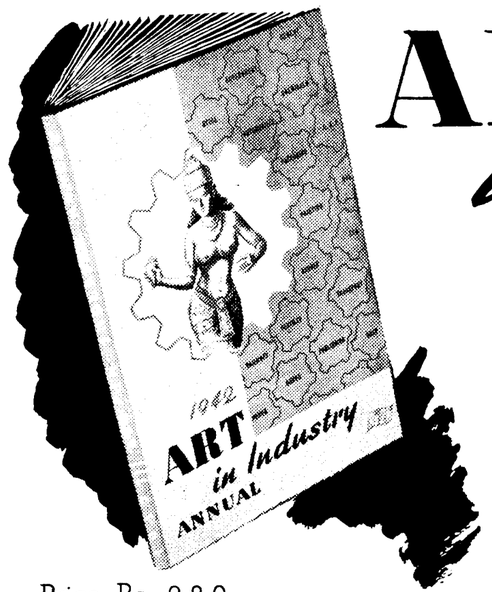
Scheduled banks had a fairly comfortable time during the year and the difficulty more than ever was to find remunerative channels of investment for the evergrowing volume of funds. Demand and time liabilities in India increased from Rs. 414.48 crores at the end of 1941 to 446.09 crores at the end of 1942. Demand liabilities alone were more than Rs. 112 crores higher at Rs. 335.06 crores. The proportion of demand liabilities to total liabilities was higher at 75.11 per cent. against 66.25 per cent. Time liabilities showed an increase of slightly over Rs. 2.5 crores in 1942, the figure on December 25, 1942, being Rs. 111.03 crores against Rs. 108.42 crores on December 12, 1941. Cash and balances with the Reserve Bank were considerably higher at Rs. 63.89 crores against Rs. 40.33 crores. On September 25, 1942, the figure was as high as Rs. 76.38 crores. Advances and bills discounted in India were considerably lower at Rs. 96.34 crores against Rs. 125.24 crores. The excess of balances with the Reserve Bank over the statutory minimum was 31.8 per cent.

Branch Banking

Branch banking has progressed uninterrupted in 1942 and but for the complication on account of the occupation of Burma the figures would, perhaps, have made more impressive showing. Exchange and other scheduled banks had quite a number of branches in the now Japanese-occupied territories and the closing down of these branches naturally has retarded progress. If due allowance is made in this respect it will be seen branch banking development has progressed more vigorously in 1942. At the end of 1941 there were 401 branches of the Imperial Bank operating in India and Burma, 341 branches of five leading joint-stock banks, 99 branches of exchange banks and 613 branches of other scheduled ranks. The total number of branches of scheduled banks was thus 1,454. By the middle of 1942 twelve branches of the Imperial Bank had ceased functioning eight of exchange banks and 22 of other scheduled banks. The total number of branches thus showed a decline from 1,454 to 1,405. Since June 1942, however, there has been an increase in the number of Imperial Bank branches to 392 from 389. Five leading joint-stock banks report an increase of eight branches to 349. Exchange banks account for the decline of nine branches. Other scheduled banks have been able to open 12 branches in the third quarter. In the first nine months of 1942, therefore, the total number of branches was lower at 1,423 against 1,454. The number of Imperial Bank branches was lower by nine, that of exchange banks branches by 14 and other scheduled bank branches by 16. Five leading joint-stock banks were operating 349 branches against 341.

Non-Scheduled Banks

Non-scheduled banks also have shared in the general improvement. Appreciable progress has been made in 1941. At the end of 1940, 604 non-scheduled banks had a total demand and time liabilities of Rs. 21.74 crores, time liabilities alone being Rs. 16.48 crores against Rs. 5.26 crores of demand liabilities. At the end of 1941, 616 non-scheduled banks reported an increase in time liabilities to Rs. 12.66 crores and in demand liabilities to Rs. 6.55 crores. The average of demand liabilities for every bank had increased from Rs. 87,000 to 1,06,000 and that of time liabilities from Rs. 1,90,000 to Rs. 2,00,000. The total of demand and time liabilities of 601 banks on February 28, 1942, in spite of disturbed conditions following the Japanese entry into the war, was considerably higher at Rs. 30.19 crores. The percentage of cash balances to total liabilities was higher at 8.4 per cent against 7.8 per cent.



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IMPERIAL BANK OF INDIA

Formal comment on the Imperial Bank's report and accounts will not fail to contain a reference to the further rise in Deposits to Rs. 108.92 crores as at the end of 1941. The failure of Advances to expand at the same pace is a result of the war. The advance in Deposits over a year by about Rs. 13 crores indeed suggests that the Imperial Bank more than ever is *hors concours*. The increase in Deposits is duly is reflected in the pronounced expansion of Investments, mainly giltedged. The banking expansion of the war period has more than ever been a sustaining factor in the giltedged market, and one would not have it otherwise, when trade demand for funds has tapered off. Of the peculiar passion for cash manifested by depositors towards the end of the year, there is certainly more than a trace in the Bank's balance sheet. What may not be self-evident in a consolidated statement of all scheduled banks as such, at any point of time, is clearly shown by the drop in cash and bank balances as compared with the end of 1940 when the rise in cash was palpably due to the slack demand for funds. The total cash and bank balances amounting to Rs. 15.27 crores indicate that a cash ratio of 12 per cent or so was preserved in a period when the Imperial Bank had to support other banks.

The falling yield on Treasury Bills is of some importance for the profit and loss account. In the event, the gross profit for 1941 is certainly better than expected at Rs. 1,08,89 lakhs. Added to the larger sum brought down from the half-year ended June, the Directors have a larger sum at their disposal. This in part is due to the increase in Advances as compared with 1940 though few will fail to miss the fact that the total under Advances is lower than the total at end-June. The reasons are to be found in dull markets elsewhere. The seasonal stringency took an unusual form while it is gratifying to record that the Imperial Bank's deposits kept rising at the same time. Since the 12 per cent dividend is very well covered there is little to say about the disposition of profits.

(Year ended December).
(000's omitted).

	1941	1940	1939
	Rs.	Rs.	Rs.
Liabilities—			
Capital ..	5,62,50	5,62,50	5,62,50
Reserves ..	5,62,50	5,62,50	5,60,00
Deposits ..	1,08,91,90	96,03,17	87,84,16
Sundries ..	38,39	37,67	40,09
Profit & Loss Account ..	45,29	38,61	31,88
Total ..	1,21,00,58	1,08,04,45	99,78,63
Assets—			
Cash ..	15,26,87	24,82,81	11,08,03
Investments	64,39,65	48,57,34	38,03,51
Loans & Cash Credit ..	31,47,37	28,49,12	41,68,37
Bills discounted ..	7,13,91	3,81,76	6,59,33
Dead Stock	1,78,27	1,80,89	1,85,96
Sundries ..	67,51	52,53	52,43
Total ..	1,21,00,58	1,08,04,45	99,78,63
Percentage of Capital and Reserve to deposits ..	10.23	11.71	12.77
Percentage of cash to deposits ..	14.02	25.85	12.63
Profit and Loss Items—			
Brought forward ..	38,61	31,88	30,40
Net profit ..	76,66	78,04	77,93
Dividend distribution ..	67,50	67,50	67,50
Allocation to funds ..	2,48	3,81	8,95
Carry forward ..	45,29	38,61	31,88
Dividend per cent ..	12	12	12

ALLAHABAD BANK LIMITED

Consistent progress in regard to business and profits has distinguished the Allahabad Bank in its long career. How remarkable that has been in a difficult year may be gauged by a perusal of figures for 1941-42. The maintenance of the dividend is no achievement; it is the increase in net profit from Rs. 9.71 lakhs to Rs. 10.55 lakhs that really matters. Age and strength have made the Bank almost unique, and in the balance-sheet as on March 31, 1942, may be found all the usual marks of progress. There is a rise in Reserve and an increase in Deposits, by Rs. 60 lakhs over the past year. A fairly high proportion of the liabilities are represented by fixed deposits, and it is only under the savings deposits, that one can see the slight fall that reflects public anxiety.

The rise in Deposits fully explains the rise in the balance-sheet total this time. The most noteworthy change in the disposition of profits is the transfer of Rs. 7½ lakhs to Investment account and the sizeable reduction (as compared with last year) in the carry forward. The circumstances of the first quarter of 1942 explain the Board's departure from established practice. What really interests the student of Indian Banking is the main movement in the balance-sheet. Evidence of the reduced demand for funds is forthcoming in the fall of Rs. 60 lakhs under total Advances though the small rise under Bills will not escape notice. Deposits are up by. 60 lakhs and Advances down by Rs. 60 lakhs to 4.99 crores on the whole. An increase in investments is postulated, and the Allahabad Bank's portfolio of Indian Government securities alone shows an increase from 4.39 crores at end of March 1941 to Rs. 5.46 crores at end of March 1942. Total investments are up from Rs. 4.88 crores to Rs. 5.84 crores. The cash balances of Rs. 2½ crores shown in the balance sheet are high enough in relation to total deposits of Rs. 12.95 crores though the cash ratio may be lower in comparison with the position shown a year ago. What concerns us most is the maintenance of high earning power despite slack conditions as also the retention of exceptional liquidity accompanied by traditional investment policy. The Allahabad Bank can always be trusted to do better than most others, since its standing is enhanced by experience. The expansion in business and gross profits alike demonstrates that the Allahabad Bank is always in a position to give most service and use opportunities to the full.

BANK OF BARODA, LIMITED.

The Bank of Baroda was founded in 1908 under the patronage of and largely supported by the Government of H. H. the Maharaja Gaekwar of Baroda. The Chairman of the Bank is Mr. Tulsidas Kilachand and the General Manager, Mr. W. G. Groundwater.

The business of the Bank during the year 1941 was satisfactory. Particular attention is drawn to the marked rise in total deposits from Rs. 7,42,50,219 as on December 31st 1940 to Rs. 9,53,80,043 as on December 31st 1941. Loans and advances have also increased from Rs. 3,48,79,407 to Rs. 4,84,14,381. Cash and other balances are slightly higher at Rs. 1,70,98,944 against Rs. 1,41,48,255 in the previous year as also investments at Rs. 4,06,21,617 against Rs. 3,47,66,175. The profit was Rs. 8,37,664 which shows an increase of Rs. 78,078 over the previous year. The dividend has been maintained at 10 per cent per anum. The amount carried forward is higher at Rs. 1,57,207 against Rs. 1,44,481 in the previous year.

(Year ended December.)
(000's omitted.)

	1939	1940	1941
	Rs.	Rs.	Rs.
Liabilities—			
Capital ..	37,09	59,96	60,00
Reserve Fund ..	55,00	55,00	55,00
Provident Fund ..	5,43	5,99	6,21
Deposits ..	6,93,72	7,42,50	9,53,80
Other items ..	6,64	5,25	20,15
Profit & Loss A/C.	4,11	4,49	5,07
Total ..	8,01,99	8,73,19	11,00,23
Assets—			
Cash ..	1,18,90	1,41,48	1,70,99
Investments ..	3,05,87	3,47,66	4,06,22
Loans & Advances	3,53,16	3,48,79	4,84,14
Property ..	22,02	23,46	21,99
Other items ..	2,04	11,80	16,89
Total ..	8,01,99	8,73,19	11,00,23

(Year ended December.)

	1939	1940	1941
Percentage of total Capital and reserve to deposits	14.05	16.29	12.70
Percentage of cash to deposits ..	17.14	19.19	17.92
Percentage of liquid assets to deposits	61.23	65.87	60.51
	(000's omitted.)		
Profits & Loss Items—			
Brought forward ..	89	1,00	1,44
Net Profit ..	4,71	7,60	8,38
Dividend Distribution ..	3,19	4,95	6,00
Allocation to Funds	1,00	1,75	1,75
Bonus to staff ..	42	45	50
Carried forward ..	1,00	1,44	1,57
Dividend Rate %	10%	10%	10%

NATIONAL BANK OF INDIA, LIMITED

(INCORPORATED IN THE UNITED KINGDOM)

Subscribed Capital - - -	£4,000,000
Paid-up Capital - - -	£2,000,000
Reserve Fund - - -	£2,200,000

Head Office:

26, BISHOPSGATE, LONDON, E.C. 2

Bankers to the Government in Kenya Colony and Uganda

INDIA: Calcutta, Amritsar, Bombay, Chittagong, Madras, Tuticorin, Karachi, Cawnpore, Delhi, Lahore, Cochin.

BURMA: Rangoon, Mandalay. (Enemy Occupied Territory)

KENYA COLONY: Mombasa, Nakuru, Nairobi, Kisumu.

CEYLON: Colombo, Kandy, Newara Eliya.

TANGANYIKA TERRITORY: Dar-es-Salaam, Tanga, Mwanza.

ARABIA: Aden, Steamer Point, Aden.

UGANDA: Entebbe, Jinja, Kampala.

ZANZIBAR.

The Bank issues Letters of Credit and conducts every description of Banking and Exchange Business with the principal cities of the world.

TRAVELLERS' CHEQUES ISSUED

The Bank undertakes the recovery of Indian and British Income-Tax and Preparation of Income-Tax Returns on behalf of its constituents.

Calcutta Branch:
104, CLIVE STREET

D. D. STORRAR
Manager.

ADAMJEE HAJEE DAWOOD & COMPANY, LIMITED

4, DALHOUSIE SQUARE EAST
CALCUTTA

Managing Agents:

ADAMJEE JUTE MILLS LIMITED

Exporters of Jute Fabrics

UNITED INDUSTRIAL BANK, LTD.

Established 9th May, 1940 **'Phone: Cal. 6869**

Head Office:—7, WELLESLEY PLACE, CALCUTTA

A Scheduled and Sub-Clearing Bank

THE LARGEST OF BENGAL'S YOUNGER BANKS

ISSUED CAPITAL - - -	**Rs. 50,00,000**
SUBSCRIBED CAPITAL - - -	**„ 21,67,500**
PAID-UP CAPITAL - - -	**„ 16,31,300**
DEPOSITS - - -	**Over Rs. Half a crore**

as at 30th September, 1942

Chairman: JADU NATH ROY, Esq.

The share subscription list will remain open until further notice, but this advertisement must not be treated as an invitation to the public to subscribe to shares. Persons desiring to obtain copies of the prospectus should communicate with the Head Office or any Branch of the Bank.

CURRENT ACCOUNT: Interest at ½% p.a. allowed on daily balances of Rs. 300 to Rs. 1 lac, provided interest amounts to at least Rs. 2 half-yearly.

SAVINGS BANK ACCOUNTS: Interest allowed at 1½% p.a. Withdrawals by cheque premitted.

FIXED DEPOSIT received for one year or less at favourable rates.

LOANS, CASH CREDITS AND OVERDRAFTS allowed against approved security.

SECURITIES, SHARES, etc., purchased, sold and received for safe custody, etc. Packages, Boxes, etc., accepted for safe custody.

RULES, RATES, etc., on application.

General Banking Business of every description transacted

Branches: BURRABAZAR AND SHAMBAZAR (Calcutta), DACCA AND NARAINGUNGE.

Pay Office: MIRKADIM.

D. F. SANDERS, *General Manager.*

BANK OF INDIA, LIMITED.

The Bank of India Limited, registered in 1906, is the most comfortably situated of the Indian Banks. It has 20 Branches. Its London Agents are the Westminster Bank Ltd. The Balance Sheet of the Bank of India Limited shows a very sound and compact position and the Bank's business continues to be run very satisfactorily. The Bank has an influential Board of Directors with Sir Chunilal V. Mehta, K.C.S.I., as Chairman. Sir Alexander Gray, Kt., is the Manager.

The Bank experienced a satisfactory year in 1941, the profit for the year being higher at Rs. 24,12,871 against Rs. 19,58,948 in 1940 and Rs. 21,70,601 in 1939. The Bank has maintained the dividend at 11 per cent.

Deposits have increased from Rs. 22,27,60,948 to Rs. 25,86,02,583. Loans and Advances are higher at Rs. 11,04,98,677 as against Rs. 7,52,49,160 in 1940 and Rs. 9,97,82,573 in 1939. Cash and other balances are lower at Rs. 5,41,48,609 as against Rs. 6,14,81,414 in the previous year, but the Investments are higher at Rs. 11,68,22,114 against Rs. 10,77,68,708. The liquid position is indicative of the settled policy of the Board and the management and the ratio of cash to deposits is more than ever calculated to inspire faith. The increase in the carry forward at Rs. 9,41,655 against Rs. 8,98,784 is also calculated to strengthen the confidence of depositors, shareholders and constituents.

(Year ended December).
(in 000's omitted)

Liabilities—	1941	1940	1939
Capital ..	1,00,00	1,00,00	1,00,00
Reserves ..	1,19,00	1,16,50	1,14,00
Deposits ..	25,86,02	22,27,61	18,59,51
Other items ..	1,56	1,34	1,38
Profit and Loss Account ..	23,61	20,45	22,29
Total ..	28,30,19	24,65,90	20,97,18
Assets—			
Cash ..	5,41,48	6,14,81	3,72,91
Loans and Advances ..	11,04,99	7,52,49	9,97,83
Investments, etc.	11,68,22	10,77,69	7,10,05
Property, etc. ..	15,50	20,91	16,39
Total ..	28,30,19	24,65,90	20,97,18
Profit and Loss Items—			
Brought forward	8.99	8.86	8.34
Net Profit ..	24.12	19.59	21.70
Dividend distribution ..	11.00	11.00	11.00
Allocation to funds	7.50	5.00	7.00
Carry forward ..	9.41	8.99	8.86
Dividend per cent	11	11	11

CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA.

Among the Eastern Exchange Banks operating in India, the Chartered Bank of India, Australia and China, is a premier institution, alike in the size of its capital and the extent of its banking resources. The bank was founded in 1853 and is one of the few banks which are at present operating under Royal Charter. It has a widespread branch organisation in India and has important offices in New York and Hamburg. The P. & O. Banking Corporation was amalgamated early in 1939 with this bank.

The business of a bank, such as the Chartered, which is largely concerned in the financing of international trade, has perhaps been affected to a larger extent than that of many other banking institutions.

The grand total of the balance sheet of the Bank for the year 1941 shows an increase of approximately £15,000,000 over the figure for 1940 and is the largest total in the Bank's history. The figure of Current and Other Accounts at £67,844,491 compares with £53,378,932 a year ago. There is a further decrease in fixed deposits to £10,146,114 from £12,126,365 in 1940 and £13,970,479 in 1939. Bills payable are slightly lower at £808,015. Bills of Exchange, including Treasury Bills, show a substantial decrease from £7,721,155 to £5,487,520 while Bills discounted and Loans have risen from £20,640,937 to £23,733,339.

After providing for all Bad and Doubtful Debts, except as regards branches in enemy occupied territories, the net profit for the year is slightly lower at £352,866, showing a decrease of £47,294. There is a reduction in the total dividend for the year to 7½ per cent as against 10 per cent for 1940. The amount carried forward is higher at £260,468 as against £182,602 brought in.

(Year ended December)
(000's omitted)

Liabilities—	1939 £	1940 £	1941 £
Capital ..	3,000	3,000	3,000
Reserve Fund ..	3,000	3,000	3,000
Notes in circulation	1,646	1,680	1,685
Deposits ..	53,362	65,505	77,990
Bills payable ..	3,606	856	808
Acceptances on customer's account	764	388	1,783
Other items ..	1,524	1,252	2,274
Profit & Loss A/c.	367	433	385
Total ..	67,569	76,114	90,925
Assets—			
Cash and Bullion	7,147	11,636	14,796
Investments ..	21,159	28,256	37,970
Bills of Exchange including Treasury Bills ..	11,252	7,721	5,488
Bills and Loans	24,968	20,641	23,733
Acceptances for customers ..	764	388	1,783
Bank Premises ..	2,081	2,014	1,580
Other items ..	198	5,458	5,575
Total ..	67,569	76,114	90,925
Profit & Loss items—			
Brought forward	179	182	182
Net Profit ..	338	400	353
Dividend Distribution ..	300	300	225
Allocation to funds ..	35	100	50
Carry forward ..	182	183	260
Dividends ..	10	10	7½

COMILLA UNION BANK, LIMITED.

The very strong local connections do not account wholly for the high position acquired by the Comilla Union Bank quite early in its career. If its age is not great, its position remains, and will remain high,for sufficient and universally accepted reasons. The report on the nineteenth year of its working indeed justifies the observations made often as to the progress of what is familiarly described as the biggest Bangalee-managed bank of the day. The more obvious signs of progress are not lacking in the balance-sheet as on April 13. Sticking to the Bengalee year for preparing its report and accounts the Comilla Union Bank shows it is conservative, yet progressive in every way. Remarkable as banking progress in the war period in India has been, not many can claim to have achieved the same satisfactory results for 1941-42. It will be generally agreed that the document provided for information is by no means formal. The Directors have recorded their satisfaction and the increase in deposits assuredly supports their claim that confidence has been fully maintained despite uncertainties. An increase of Rs. 34 lakhs in deposits in a year leaves the working funds at the new high level of Rs. 287 lakhs. The other striking changes are the increase in paid-up capital to Rs. 14.09 lakhs and in the Reserve Funds to Rs. 7.91 lakhs. A further appropriation of 25,000 made out of 1941-42 profits raises the Reserve Funds to over Rs. 8 lakhs. Total deposits in the balance-sheet are shown as Rs. 241.65 lakhs and cash balances etc. amount to Rs. 53.38 lakhs. The degree of liquidity preserved is more than commendable. The high ratio of Advances to total funds naturally claims attention for reasons other than slack money conditions ruling for a long while. The Comilla Union Bank's service to customers is still extending and the present distribution of Advances conforms to approved practice. The high ratio of advances further explains the growth of net profits in 1941-42. If the dividend has been reduced from 12½ to 10 per cent. for 1941-42 the proprietors have the satisfaction of finding a greater part retained in the books and the casual profits applied to strengthen reserves. The 10 per cent. dividend is thus justified by the Bank's decision to strengthen the Reserve Funds. Representing as it does the sum of achievement in a year characterised by uncertainties, the report and accounts stand out as a landmark in the career of a bank which in twenty years has forged ahead of its fellows.

Liabilities—

(Year ended April)
(000's omitted)

	1940 Rs.	1941 Rs.	1942 Rs.
Capital ..	8,01	12,18	14,09
Reserves ..	7,02	7,28	7,91
Deposits ..	1,87,93	2,07,75	2,41,66
Other items ..	17,09	26,62	22,45
Profit and Loss Account ..	1,13	1.32	1,66
Total ..	2,21,18	2,55,15	2,87,77
Assets—			
Cash ..	54,43	70,08	53,38
Investments ..	42,11	40,80	63,92
Loans and Advances ..	1,09,41	1,20,67	1,50,30
Bills Receivable ..	7,18	4,07	5,93
Other items ..	8,05	19,53	14,24
Total ..	2,21,18	2,55,15	2,87,77
Percentage of capital and reserve to deposits ..	7.99	9.36	9.11
Percentage of cash to deposits ..	28.96	33.73	22.09
Percentage of liquid assets to deposits ..	51.37	53.37	48.54

CENTRAL BANK OF INDIA LIMITED.

Founded in 1911, this bank is the largest of the indigenous banks in India. In 1923 it took over management as a separate institution of the Union Bank of India and acquired the Tata Industrial Bank. Its deposit figures are higher than those of the other Indian Joint-Stock banks. In range of business, largeness of clientele, new and newer modes of service, the Central Bank has always been in the forefront. An institution so flourishing and so steadfastly marching onwards has had, necessarily, its distractors and even unreasoning critics. The Bank has come out successful in all the vexatious litigation to which some of its enemies have subjected it. Despite such difficulties, the progress of the Bank has been kept up. At all times, it has been ready and able to weather even the strongest storm. That it has stood up through good support and evil report and strengthened its position all the time, is a measure of its intrinsic vitality and its sound business

THE CENTRAL BANK OF INDIA, LIMITED

(ESTABLISHED DECEMBER, 1911)

Authorised Capital - - - Rs. 3,50,00,000
Subscribed Capital - - - ,, 3,36,26,400
Paid-up Capital - - - ,, 1,68,13,200
Reserve and Other Funds - - ,, 1,37,20,000
Deposits as at 30th June, 1942 - ,, 49,70,92,000

Head Office:—**ESPLANADE ROAD, FORT, BOMBAY**

155 Barnches and Pay-Offices throughout India

DIRECTORS:

Haridas Madhavdas, Esq., *Chairman*, Ardeshir B. Dubash, Esq., Dinshaw D. Romer, Esq., Vithaldas Kanji, Esq., Noormahomed M. Chinoy, Esq., Bapuji Dadabhoy Lam, Esq., Dharamsey Mulraj Khatau, Esq., Sir Ardeshir Dalal, Kt., H. F. Commissariat, Esqr.

London Agents: **Messrs. BARCLAY'S BANK LIMITED AND Messrs. MIDLAND BANK, LIMITED**

New York Agents:—**THE GUARANTY TRUST CO. OF NEW YORK**

Banking Business of every description transacted on terms which may be ascertained on application

H. C. CAPTAIN
Managing Director.

EFFICIENCY
OUR
WATCH WARD
ALL SORTS OF BANKING BUSINESS UNDERTAKEN

Authorised Capital - - Rs. 10,00,000
Subscribed Capital - - ,, 3,90,000
Paid-up Capital - - ,, 3,38,225
Reserve Fund - - ,, 1,27,500
Working Capital (nearly) - ,, 64,00,000

RATE OF INTEREST

Current - - ½%
Savings - - 1½%

FIXED DEPOSIT

6 Months - - 2½%
1 Year - - 3 %
2 Years - - 3½%
3 Years - - 4 %

For further particulars write to:

THE HOOGHLY BANK, LTD.
43, DHARAMTALLA STREET, CALCUTTA

Branches:
Howrah, Bally, Salkia, Belur, Uttarpara, Serampore and Sheoraphuli.

CALCUTTA NATIONAL BANK LTD.
A SCHEDULED AND CLEARING BANK
WORKING CAPITAL More Than a CRORE of Rupees

Head Office:—**Calcutta National Bank Buildings MISSION ROW, CALCUTTA**

BRANCHES:

Bombay Office:—**Sir PHEROZHAH MEHTA ROAD.**

Cawnpore Office:—**LALA MATADIN STREET.**

Delhi Office:—**CHANDNI CHOWK.**

Other Offices Outside Bengal:
Patna, Gaya, Benares, Benares Chowk, Allahabad Chowk, Allahabad Katra, Lucknow, Jubbulpore, Nagpur, Nagpur-city, Raipur, Drug, Amraoti.

Calcutta Offices:
Burrabazar, Shambazar, Ballygunj, Bhowanipore.

Otehr Offices in Bengal:
Dacca, Narayanganj, Mymensingh, Chittagong.

Rates of Interest:

Current Accounts - - - ½% per annum
Savings Bank Accounts - - 1½% ,,
Fixed Deposit for 6 months - - 2½% ,,
Fixed Deposit for one year - - 3% ,,

All Sorts of Banking Business Transacted

methods; it also shows how much headier its growth would have been if it had been left to develop unharassed and unhampered.

The first full year of Mr. H. C. Captain's term of office as Managing Director is remarkable in every way. Seven branch offices and seventeen pay offices were added. Under new direction vigorous expansion was rendered possible. It may be readily said that no bank has obtained the same significant increase in deposits. In a year that has been marked by various lapses and drawbacks, the Central Bank attracted over 9 crores in deposits of all descriptions including fixed deposits and cash certificates. We should call that a real achievement and if it were not for the hesitation noticed towards the end of December, attested by too ready withdrawals of cash, we believe that the balance sheet total would be considerably over Rs. 50 crores. In fact, the present figure is now over Rs. 64 crores. A year ago the balance sheet total was Rs. 38.13 crores. The latest published statement reveals that it has risen to Rs. 50.12 crores. It takes some doing, as everybody will agree, but the Central Bank is more than wise for its years, more than courageous for its age, more than skilled for its calling.

Fixed deposits and cash certifiates are also up by 1½ crores to stand at Rs. 12.03 crores. The Central Bank's continuously growing influence in the banking world is attested by the large increase under sums due from other banks.

Even more symptomatic of the leadership enjoyed by the Central Bank is the way in which Advances and Bills have risen in a single year from Rs. 13.36 crores to Rs. 18.85 crores. The rise of 5½ crores during a period when banks generally reported slack conditions and reduced trade demand for funds proves over again that the seeds of expansion are always there. There is an increase of over 10½ lakhs in the net profit over a year at Rs. 40,99,494. It is true that this increase goes to strengthen the funds. The sum of Rs. 4 lakhs is transferred to Investments Reserve. The bank held Government securities valued at about Rs. 17.5 crores. A year ago, the total was Rs. 10.3 crores. Plainly progress, or rather, extensive support for the Government as borrower.

The distribution of the usual increase in deposits between investments and advances will certainly excite attention in bills discounted, up from Rs. 1.32 crores to Rs. 2.69 crores. The Central Bank is getting its full share of such prosperity as is generated by the war.

EASTERN BANK, LIMITED.

There is nothing of outstanding importance in the balance sheet of the Bank for the year ended December, 1941.

The principal change in the balance sheet lies in the great increase in Current and Deposit Accounts by some £5,500,000 in round figures with a corresponding increase on the assets side in Cash, Bills Receivable including Treasury Bills Government Securities, thus showing a position of great liquidity.

The loss of European Continental markets and difficulties of seaborne trade are naturally reflected in the net profit, which represents a decrease of some £7,000 from the preceding year 1940. The allocation of £40,000 from the net profit strengthens further the Contingencies Account, thus increasing the inner reserve additional to the Reserve Fund of £500,000 shown in the accounts. The total dividend for the year is 4½ per cent as against 6 per cent for 1940.

(Year ended December) (000's omitted)

	1939 £	1940 £	1941 £
Liabilities—			
Capital ..	1,000	1,000	1,000
Reserve Fund ..	500	500	500
Deposits ..	8,202	8,820	14,307
Bills of Acceptance ..	374	192	74
Bills payable ..	304	353	352
Other items ..	337	405	37
Profit and Loss Account ..	167	165	160
Total ..	10,884	11,082	16,431
Assets—			
Cash ..	1,287	1,727	4,528
Investments ..	4,705	4,261	6,349
Bills receivable ..	1,278	1,961	2,544
Customer's Liabilities for Acceptances ..	374	193	74
Loans and Advances ..	3,089	2,191	2,518
Property ..	151	438	416
Other Items ..	..	311	..
Total ..	10,884	11,082	16,431
Percentage of capital and reserve to deposits ..	18.29	17.00	..
Percentage of cash to deposits ..	15.69	19.58	..
Percentage of total liquid assets to deposits ..	73.05	67.89	..
Profits & Loss Items—			
Brought forward	83	82	85
Net Profit ..	104	102	95
Dividend distribution ..	60	60	45
Allocation to funds ..	45	40	50
Carry forward ..	82	85	85
Dividend rate per cent ..	6	6	4½

INDIAN BANK LIMITED

There have been two outstanding developments in banking in South India in 1942. There was a drain on cash up to the end of June, 1942 and beyond followed by a steady recovery to which improved conditions contributed in a measure. There was an addition to capital to support the recovery through the second half of 1942. If allowance is made for the abnormal factors operative in the past year, the usual comparisons with the balance sheets of 1941 will lose their validity. The recovery since June alone has relevance and the Indian Bank's revival is all the more impressive, because of the increase in its cash balances towards the end of 1942. Deposits show a fall of Rs. 1.2 crores compared with December, 1941 but the initial caution will save many from drawing the familiar conclusion. The setback is unimportant by any reckoning. What matters is the successful issue of new shares at a suitable premium, the striking recovery in the quotation for the shares, and the maintenance of business over a difficult period so that the dividend is the same as before. The influence of reduced Advances is most pronounced on the profit and loss account for 1942. The net profit for 1942 is approximately half of that reported in 1941 but the loss of oversea connexions, the strain on available resources and the plethora of money, like the grounding of interest rates in the war period, must be regarded as depressant factors. What is really important, apart from the cash totalling Rs. 155 lakhs against Deposits of Rs. 523.7 lakhs, is the amazing reduction in debts due to the Bank by Directors. The fact which excited comment last year had almost ceased to exist before a full year passed. The pruning (it may be called that) should assist in the rapid and healthy growth of Deposits in the near future. That Investments are higher than Advances in the balance sheet will not occasion surprise owing to the fall in bills and advances, overdrafts etc. reported by the majority of banks. The high cash ratio of over 28 per cent strengthens in the case of the Indian Bank the depositors' position and the reduction in rates of interest ordered recently should restore the balance between income and outgo. The Directors' satisfaction with the results explains the maintenance of the dividend at 10 per cent for 1942. Since the Reserves are strong, there is no call to add to them, and the Contingent Fund alone receives an allocation from 1942 profits. Material assistance in the 33rd year of working should be obtained by the large addition (made out of shares premiums) to the Reserve Fund which is again in excess of the paid-up capital, increased by the issue of shares and the call made on the holders of partly-paid shares. The balance sheet of June, 1943 should therefore be of high interest to others besides shareholders of the Indian Bank, Ltd.

LLOYDS BANK LIMITED.

Lloyds Bank Limited is one of the oldest as well as one of the largest of the great London joint-stock banks, it having been formed as a private bank in 1765 and incorporated as a joint-stock company just a hundred years later. Since its incorporation the Bank has absorbed or acquired a preponderant holding in many other well-known banks, among the most recent being the Capital and Counties Bank Ld., the National Bank of Scotland, Ld., the West Yorkshire Bank, Ld., Fox Fowler & Co., Bank of London and South America Limited, Cox & Co. and Henry S. King & Co.

To take the Liabilities side first, Current, Deposit and other Accounts again stand at a record figure and show an increase over last year of £90,000,000. Reserve Fund stands at £10,000,000.

On the Assets side, Cash on hand and with the Bank of England has increased by £7,509,000, and Balances with, and Cheques in course of collection on other Banks in the British Isles by £5,063,000.

Money at Call and Short Notice has decreased by £1,263,000. The balance of British and Colonial and Foreign Bills does not show any appreciable change.

Investment in British Government Treasury Bills has decreased by £9,580,000 while Investments in British Government Short Term Securities, or other securities guaranteed by the British Government and Indian and Colonial Government Securities and British Corporation Stocks have increased by £27,486,000. In addition the Bank has lent to the Government £140,500,000 in what is called Treasury Deposit Receipts, the figure last year being £65,500,000.

The net profit is £1,274,199 compared with £1,383,807 last year.

(Year ended December). (000's omitted).

	1941	1940	1939
Liabilities—			
Capital ..	15,810	15,810	15,810
Reserve Fund	10,000	10,000	9,500
Deposits ..	581,314	490,827	433,583
Acceptances ..	265	680	2,120
Endorsements, etc. ..	21,357*	19,598*	27,424*
Profit and Loss Account ..	978	1,036	1,103
Total ..	629,724	537,951	489,540

COMILLA UNION BANK, LIMITED

(ESTBALISED 1922)

Regd. Office:—**COMILLA**

The Biggest Bengalee Managed Bank

Deposits - - - over Rs. 3,50,00,000

Workind Funds - - over Rs. 4,00,00,000

(As at the close of 15th January, 1943)

CALCUTTA OFFICES AT:

4, CLIVE STREET — **225, CORNWALLIS STREET**

139-B, RUSSA ROAD — **99-A, CORNWALLIS STREET**

Other Branches at Important Trade Centres of Bengal and Assam

Managing Director:—**Dr. S. B. DUTT, M.A., B.L., Ph.D. (Econ.) Lond., Bar-at-Law**

For VEGETABLE OILS

Linseed Oils, Mowah Oil, Groundnut Oil, Cocoanut Oil, Castor Oil, Til Oil, Mustard Oil, etc. These Oils are available in refined and deodorised quality as well. Direct manufacturers and suppliers to Government, Railways and all the large Soap Factories throughout India.

& DISINFECTANTS

We are manufacturers of the famous "DOG" and "DOUBLE AXE" Brand Phenyle (Disinfectants,) used extensively by Municipalities, Hospitals, Government Offices and Private Houses.

SWAIKA OIL MILLS

28A, POLLOCK STREET, CALCUTTA

Phone :—Cal. 6171-72 (2 Lines.)

NATH BANK, LTD.

Head Office :—CALCUTTA

Phone : CAL. 3253 (3 lines)

NATH BANK IS NATION'S WEALTH

OFFICES:

CALCUTTA CIRCLE:	BENGAL CERCLE :
Calcutta	Dacca
Shambazar	Mymensingh
Harrison Road	Chittagong
Bhowanipore	Chaumuhani
Ballygunge	Noakhali
Burra Bazar	
Howrah	
ASSAM CIRCLE :	**BIHAR CIRCLE :**
Shillong	Patna
Gauhati	Jamshedpur
Dhubri	Chaibasa
Tezpur	Sakchi
Nowgong	

NORTH INDIA CIRCLE:—Delhi, New Delhi, Lucknow and Cawnpore

Interest allowed @ 1½% per annum on SAVINGS ACCOUNT
Interest allowed @ ½% per annum on CURRENT ACCOUNT
FIXED DEPOSIT Rates on Application

Banking Business of all Descriptions Transacted.

K. N. DALAL *Managing Director.*

Assets—			
Cash ..	118,243	106,769	99,264
Investments ..	337,006**	243,542**	175,175
Bills Discounted	1,764	1,766	6,885
Loans and Advances ..	128,539	140,533	159,257
Customers Acceptances ..	265	680	2,120
Endorsements etc. ..	21,357	19,598	27,424
Property ..	10,187	9,521	9,255
Other Items ..	12,363	15,542	10,160
Total ..	629,724	537,951	489,540
Percentage of Capital and Reserve to Deposits ..	4.44	5.25	5.83
Percentage of Cash to Deposits ..	20.34	21.75	22.89
Percentage of Liquid Assets to Deposits	40.90	42.76	49.24
Profit and Loss Items—			
Brought Forward ..	520	519	527
Net Profit ..	1,274	1,384	1,590
Dividend Distribution ..	915	1,033	1,248
Allocation to Funds ..	350	350	350
Carry Forward	529	520	519
Dividend per cent ..	(a)12 (b) 5	(a)12 (b) 5	(a)12 (b) 5

(a) 'A' Shares. (b) 'B' Shares.

*Includes Notes in circulation (Isle of Man).

**Includes the balance of Treasury Deposits Receipts.

MERCANTILE BANK OF INDIA, LTD.

The Mercantile Bank of India was registered in 1892, and it has had long and influential connections in India. In addition, the bank has branches and agencies in Ceylon, Malaya, China, Siam and Mauritius.

An Associated Company has been formed for the transaction of Trustee and Executorship business in Malaya and has been registered in Penang under the title of the Mercantile Bank of India (Trustees) Limited.

As in the case of most banks there has been an increase in the current accounts with a corresponding rise in the holding of Government Securities. The increase in Bills Receivable and Loans Receivable and Advances is largely due to lack of shipping and to delay of bills in transit. The cash position is again kept very strong, which has been part of the policy of the Directors to provide against any contingency inseparable from a war so wide-spread.

The profit for the year at £173,000 is lower than in recent years, without taking any account of the substantial profits made in the second half of the year by the four branches, viz., Shanghai, Hongkong, Bangkok, and Penang, before they were overrun. Moreover before striking the balance, the Directors have judged it advisable to transfer a considerable sum from the profits of the year to Contingencies Account as provision for losses so far ascertained.

They also thought it prudent to reduce by half the second interim dividend which is in effect the final dividend for the year. In other words, they have declared, on the whole, a dividend of only 9 per cent as against 12 per cent for the previous year. They have again allocated £25,000 to Premises Account and made an additional allocation of £40,000 to Contingencies Account. The carry forward is slightly higher at £182,268 against £181,745 in the previous year.

(Year ended December) (000's omitted)

	1939	1940	1941
Liabilities—	£	£	£
Capital ..	1,050	1,050	1,050
Reserve Fund ..	1,075	1,075	1,075
Notes in circulation ..	302	274	245
Current, fixed deposits, etc. ..	18,078	20,887	24,784
Bills payable ..	1,065	1,251	1,130
Balance due to subsidiary companies ..	44	43	43
Acceptance for customers ..	168	98	91
Profit and Loss Account ..	243	245	214
Total ..	22,025	24,923	28,632
Assets—			
Cash and buillion	3,283	6,116	5,934
Investments ..	7,628	8,138	9,283
Deposits against note issue ..	370	361	361
Bills receivable ..	3,398	4,355	5,727
Bills discounted	31	21	12
Loans and advances ..	6,393	4,790	5,665
Customers liabilities for acceptances ..	168	98	91
Premises ..	338	316	371
Other items ..	416	728	1,188
Total ..	22,025	24,923	28,632
Profit & Loss Items—			
Brought forward	178	180	182
Net Profit ..	196	196	173
Dividend distribution ..	126	126	95
Allocation to funds ..	68	68	78
Carry forward ..	180	182	182
Dividend rate per cent ..	12	12	9

NATIONAL BANK OF INDIA LTD.

The National Bank of India, Limited was originally founded in Calcutta as a Rupee Company in 1863, but was soon after registered in England and converted into a Sterling Company. It has important business connections in East Africa, Kenya and Uganda. The General Manager of the Bank is Mr. R. L. Hird and Mr. J. J. K. Allan is the London Manager.

The net profit for 1941 has been very nearly maintained at the level of the previous year, the same after providing for all bad and doubtful debts being £437,738. The usual interim dividend of 16 per cent per annum was paid on 25th September, 1941 but the publication of the accounts for 1941 was delayed on account of the spread of hostilities to the Far East and the different conditions in Egypt and the directors paid a further interim dividend of 12 per cent per annum on April 16, 1942 which was to be treated as the final dividend for the year 1941. The total distribution for the year was, therefore, 14 per cent against 16 per cent. The sum of £50,000 was transferred to the Staff Pension Fund while £70,000 was written off House Property account.

Coming to the balance sheet, there has been a further increase in total deposits to £39.7 million from £34.8 million in 1940. It has been even more difficult to find remunerative channels of investment. Loans and bills discounted are further lower at £9.05 million against £9.7 million. Investments are, therefore, higher at £17.5 million against £14.6 million. Cash balances also are higher by £1.1 million at £10.54 million. The ratio of investments and cash balances to total deposits has thus improved to 70.68 per cent from 69.46 per cent.

	Year ended December. (000's omitted).		
	1941	1940	1939
Liabilities—	£	£	£
Capital ..	2,000	2,000	2,000
Reserve Fund ..	2,200	2,200	2,200
Current, Fixed Deposits etc. ..	39,696	34,796	29,166
Bills payable ..	853	846	824
Acceptances for customers ..	247	159	385
Loans payable ..	..	..	1,500
Profit & Loss a/c ..	524	526	532
Total ..	45,520	40,527	36,607
Assets—			
Cash and bullion ..	10,536	9,522	6,861
Investments ..	17,521	14,646	13,382
Bills of Exchange including Treasury bills ..	7,453	5,690	3,138
Loans and discounts	9,053	9,709	11,966
Customers liabilities for acceptance ..	247	159	385
Premises, etc. ..	710	801	875
Total ..	45,520	40,527	36,607
Percentage of total capital and reserve to deposits ..	14.51	12.08	14.40
Percentage of cash to deposits ..	26.60	27.37	23.52
Percentage of Liquid Assets to deposits	70.68	69.46	69.40

NATH BANK LIMITED

The career of Nath Bank Limited sets a record of its unique progress in different spheres of its activities since the year 1926, when it first came into being. At the beginning, the Bank started with a nominal capital, which increased in the year 1936, when its Head Office was transferred to Calcutta, to Rs. 2,65,281-0-0. That year was the stepping-stone to the gradual rise of the Bank. And its expanding activities were reflected in the increase of its deposits at the end of the year 1941 to Rs. 1,43,04,328 and of its paid-up capital to Rs. 11,07,007 against Rs. 9,62,946 in the year 1940. It is assuring to note that the shares of the Bank are selling at a premium of 10% and this can be interpreted as the growing confidence of the investing public in the Bank. Cash in hand and gold-bullion amount to Rs. 32,69,256, which being added to the Government Securities and Reserve Bank shares etc. for Rs. 35,07,947, come upto Rs. 67,77,203 in the year under report. And this item bears a proportion of about 48% of the total liabilities. Consequently the liquid position of the Bank is to be considered as strong. Inspite of war-conditions the loans and advances of the Bank show a slight increase to Rs. 86,52,364 against Rs. 81,77,236 in the previous year.

The net profit of the Bank including the previous year's surplus profit is Rs. 74,315 and out of this dividend at 6¼% per annum was declared, while transferring to the Reserve Fund a sum of Rs. 20,000 and setting apart Rs. 1,000 on account of bonus and charity.

The steady progress of the Bank speaks of the cautious policy of the management and credit is due to Mr. K. N. Dalal, Founder Managing Director of the Bank for his able guidance of the Bank's affairs.

YOUR SECURITY

IN

WAR-TIME

Quiet does not flow the day in wartime. Uncertainties and unforeseen dangers call for individual and national security every moment more than ever before. It is only through Life Insurance that you can obtain the security you vitally need in these storm-tossed days.

A HINDUSTHAN POLICY, simple and liberal, insures civilian lives and residents in India fully against death from enemy action including air-raids. Members of A. R. P. services in India are also fully covered against enemy action including air-raids in India. It provides you war-time security and the added strength of a company of assured dependability and proved solvency.

LET HINDUSTHAN CARRY YOUR BURDEN OF THE GLOOMY DAY

HINDUSTHAN CO-OPERATIVE
INSURANCE, SOCIETY, LIMITED

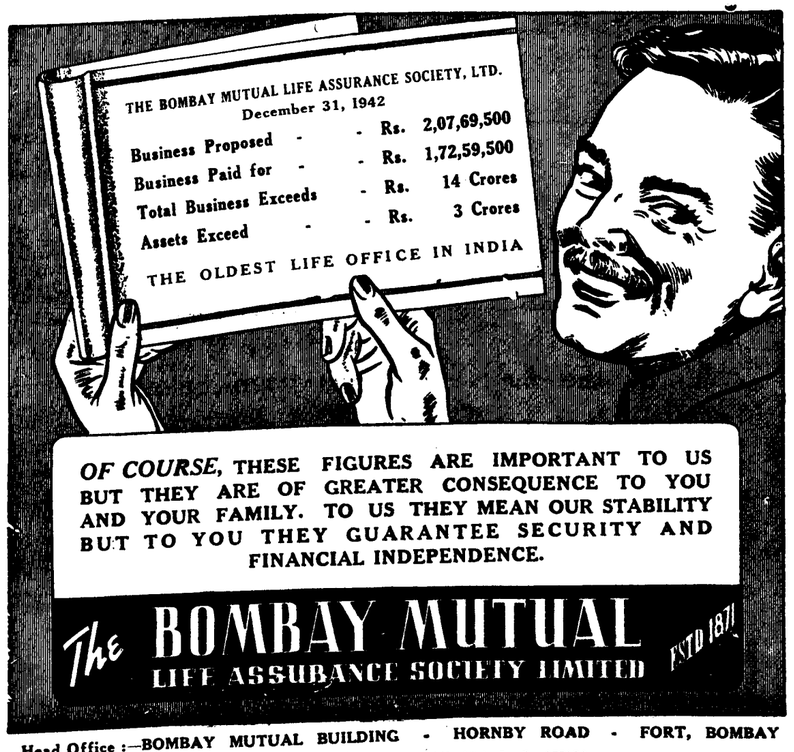
Head Office :
HINDUSTHAN BUILDINGS, CALCUTTA

CALCUTTA COMMERCIAL BANK LIMITED

The Calcutta Commercial Bank has set before itself the goal of serving business and created the conditions of progress by a thorough devotion to detail. The extension of branch banking into Assam from East Bengal is no inconsiderable achievement. The six or seven years of association with a firm with diversified interests has enabled the bank to lay down the finest foundations for more rapid advance in the future. In such circumstances as have enabled Indian joint-stock banks to develop services and extend facilities on a limited scale, the Calcutta Commercial Bank has found, and used its opportunities well. The 1941 report and accounts, if they have attracted only brief notice, deserve special attention on the part of shareholders who should be aware that the era of consolidation has come. The proof of that statement is found in the remarkable increase in deposits during 1941. Total deposits increased very substantially indeed from Rs. 26.36 lakhs to Rs. 44.46 lakhs. It may be inferred that the increase in paid-up capital during hte same period is a tribute to the efficient direction of the Bank's affairs. The dividend of four per cent free of tax is not to be interpreted as the only mark of sound, prudent management. The addition of Rs. 15,000 to the Reserve Fund indicates that the business of creating additional resources has begun. The capital called up is larger than usual for a bank of its size, but the Bank is scheduled to the Reserve Bank, and it has to-day new chances for employing capital by lending against supply bills and arranging for remittance at reduced rates. The peculiar capital structure of the Bank is sure to attract attention but not more than the successive additions to capital made up by conveniently spaced calls. The Calcutta Commercial Bank is wholly free from the blame of working with insufficient capital, and its policy of expanding capital at the same time as other assets grow is in line with policy officially recommended. The balance-sheet may well claim attention as illustrating how the small bank should limit investment in giltedged and turn to other eligible investments. A higher cash ratio than usual is a mark of inherent soundness but organisation expenses might take some time to write off on present reckoning. It should not occasion surprise if bigger provision is made as from 1942.

THE UNITED INDUSTRIAL BANK

The bank statements of 1941-42 have this in common They indicate a highly liquid position and a very limited increase in advances. The expansionary influence is still marked in regard to deposits and is least noticeable as regards Bills while changes in the value of investments can be relegated safely to a secondary position. India's joint-stock banks in the third year of war appear to encounter conditions, which make for stability, but militate against profits. Such general considerations however do not always apply, for instance to a recent but distinguished entrant into the banking field. The connections can claim to have inherent advantages denied to many. Its latest report, therefore, records a striking improvement in regard to current and savings accounts alike. Alike the result is better than may be expected for an increase of 50 per cent in a year under Deposits alone is apparent. Total deposits at the nd of March 1942 have gone up to Rs. 37.97 lakhs. Working funds are anyway much larger in view of the paid-up capital having risen in 1941-42 from Rs. 15.91 lakhs to Rs. 16.27 lakhs nearly. The United Industrial Bank still retains the original advantage of an adequate issued capital. It has since made a happy beginning with an appropriation of Rs. 10,000 from profits to its Reserve Fund and has earned a net profit which has covered the preliminary expenses incurred in 1940 and has effaced the small loss on the first year's working. To this marked change in earning power, as compared with the results for the first ten and a half months of working, the expansion in cash credits and overdrafts by as much as Rs. 12.05 lakhs has definitely contributed. Mr. Jadu Nath Roy told the bank's shareholders at the annual general meeting last week that the Naraingunge Branch is doing very well and the progress of the city branches has been checked only by the exodus. A comparison between the balance-sheets appended to the first and second annual reports furnishes an indication of unusual progress. The United Industrial Bank alone is able to report a bigger increase under Advances than Investments. This neutralises the depreciation in the value of securities to which Mr. Jadu Nath Roy adverted.



Head Office :—BOMBAY MUTUAL BUILDING - HORNBY ROAD - FORT, BOMBAY
AGENTS ALL OVER INDIA, CEYLON AND B. E. AFRICA

How She Has Grown

BIGGER AND STRONGER EVERY YEAR

LAKSHMI'S

PHENOMENAL PROGRESS

Year	Life Fund	Expense Ratio
1925-26	64,429	66·98
1929-30	15,00,786	37·87
1934-35	59,12,899	35·93
1939	1,33,48,399	31·57
1940	1,55,22,197	25·77
1941	1,79,02,026	24·69

BONUS
ENDOWMENT POLICIES
Rs. 15
per thousand per year

BONUS
WHOLE-LIFE POLICIES
Rs. 18
per thousand per year

"Verily the LAKSHMI has been beloved of Goddess of Wealth"—Indian Finance.

The Lakshmi Insurance Co., Ltd.

McLEOD ROAD, LAHORE

REVIEWS OF BALANCE-SHEETS

INDIAN INSURANCE COMPANIES

THE ASIAN ASSURANCE CO., LTD.

(Established—1910).

Head Office:—BOMBAY.

The reports and meetings of insurance companies go to show that Indian insurance is finding greater support in the second and third years of war. The companies themselves have a better title to support in that their policy continues to improve. It is certainly typical of junior offices that new business has grown more rapidly than anticipated; but older, stronger companies have made headway. For instance, the Asian Insurance Company of Bombay, after the decisive changes in the Board, has been assisted to a large extent by a combination of favourable circumstances. What these are can be learnt from the report issued last month. New business has risen from Rs. 60 lakhs in 1940 to Rs. 70.29 lakhs in 1941. Business in force has risen by Rs. 28.67 lakhs in the past year. The average value of the policy issued in 1941 has been high enough to offset the decrease in the number of policies issued. Premium income again rose from Rs. 20.95 lakhs to Rs. 22.54 lakhs in 1941. Interest and other receipts showed corresponding growth from Rs. 3.87 lakhs to Rs. 4.96 lakhs. In his comments on the brilliant results secured in 1941 Mr. G. N. Rajpal dwelt with pardonable pride on the increase in business secured despite the loss of oversea connections. Even more distinctive is the reduction in expenditure effected under the new regime. A fall of about Rs. 30,000 under total expenses is a clear mark of progress. The usual reduction in expense ratio has been secured without any reduction in revenue. Mr. Rajpal expects a further reduction in 1942 as business is known to be improving consistently; and policyholders will have more reason to feel pleased with results summed up judiciously at the annual meeting. The revenue account shows an outgo of Rs. 6.92 lakhs on account of claims in the year. The Life Fund is shown to have gained to the extent of Rs. 10.91 lakhs from the year's surplus of receipts. It stood at Rs. 96.89 lakhs at the end of 1941; and the Fund is growing at a rate at which finding a use for new money is a problem as shown by the drop in the average rate of interest earned on the funds last year. Even then the rate of 4½ per cent was secured by retention of many preference and ordinary shares in addition to giltedged which account for about Rs. 38 lakhs nearly while other stock exchange investments take up Rs. 25 lakhs. The Asian's holding of mortgages is fairly high at Rs. 13.6 lakhs and its policy loans account for Rs. 14.37 lakhs out of the balance sheet total of about Rs. 1.13 crores. The Asian has a paid-up capital of Rs. 5 lakhs and a reserve of Rs. 3 lakhs in addition to its special funds. Its outstanding liabilities are amply covered by cash balances totalling over Rs. 4.77 lakhs. The strong position disclosed in the last balance-sheet warrants the confident note struck by Mr. Rajpal in his review of the company's affairs. He told the meeting that the Asian offers the advantages promised by other life offices in wartime to civilians. And the last year's working results justify the assumption that the year 1941 is a turning-point in the Asian's rather subdued career.

BHARAT INSURANCE CO., LTD.

Bharat in virtue of its age and standing in Northern India has always been among the first half a dozen life offices in India. The Company has certainly succeeded in holding new business up to the 1940 level. The report states that 6,902 proposals assuring in the aggregate Rs. 159.94 lakhs were received and 6,435 resulted in policies assuring in the aggregate over Rs. 141 lakhs. Total premium income for the year amounted to Rs. 41.09 lakhs. First year's premiums yielded Rs. 5.56 lakhs nearly. The single premiums alone totalled Rs. 1,84,970. The year's receipts were raised by about Rs. 9.52 lakhs by way of interest, dividend and rent. The revenue account shows also miscellaneous receipts in addition to an income-tax refund of Rs. 2.2 lakhs. The revenue account shows that apart from gains on the sale of securities, the net appreciation in securities to the extent of Rs. 23.22 lakhs has been utilised. The result is that the Life Fund is strengthened by over Rs. 17 lakhs. The Life Fund is definitely over Rs. 2 crores at the end of 1941. The net annual income is over Rs. 50.35 lakhs and the company's stronger position at the end of 1941 is proved again by the expansion in income and the addition to the Life Fund. The most remarkable achievement of the year relates to the reduction in expenses. Claims in the year took over Rs. 20.07 lakhs. The transfer of Investment Reserve of Rs. 23.22 lakhs is a self-balancing entry in the books as may be inferred from the balance-sheet which shows that the previous depreciation has been made good by the improvement in values in the next year. This is of less interest than the big reduction effected in the expense ratio for 1941 which is now reasonably high at 26.9 per cent.

The continued growth of business will naturally guide the policy of the Company in regard to expenses. The biggest change of recent years is not however the increase in giltedged securities held by the Company, for giltedged have their disadvantages, but in the large holding of sound preference shares. The Company at the end of 1941 held over Rs. 55 lakhs in giltedged and over Rs. 114.04 lakhs in preference and other shares. The proportion is unusual, but distinctly advantageous. The Company's investment in Lahore Electric in the form of preference and ordinary shares is known to be as high as Rs. 83.25 lakhs. In view of the Punjab Premier's recent statement, that the Government is going to buy out the Company the principal beneficiary of any such transaction must be the Bharat. The results of a carefully chosen and quite secure investment will be obtained when the Company gets an anticipated profit of Rs. 40 lakhs. The classified summary shows policy loans for Rs. 22.2 lakhs and house property worth Rs. 38.8 lakhs. The distribution of assets suggests no rigid subservience to new-fangled rules but a wise catholicity that is essential when the yield on giltedged is depressed by the lowness of interest rates. Outstanding liabilities on the balance-sheet are seen to be covered by revenue items and cash balances equal to Rs. 4.88 lakhs. Readers will do well to note that the sum due from the Peoples' Bank of Northern India at end-1941 is as low as Rs. 619-9. There is nothing at all to suggest the existence of any handicap for the Bharat Insurance Company whose major achievements in a difficult year should be readily translated into terms of bonus at the latest valuation.

THE CONCORD OF INDIA INSURANCE CO., LTD.

(Established—1931).

Head Office:—CALCUTTA.

The year 1941 saw a moderate increase in the business of the Accident Branch accompanied by a striking increase in Marine business also. It may be said that in the case of the Concord of India, the progress made last year is to be regarded as exceptional despite the fall in fire premiums. The report and accounts for the year ended 1941 show that in the Fire Branch the net premiums less reinsurances amounted to Rs. 6,47,049. The claims for the year at Rs. 2,61,304 took only 40.38 per cent of the premiums. The lower loss ratio and lower expenses also are responsible for an addition to the Fire Fund at Rs. 3,73,525 at the end of 1941. Marine premiums for 1941 provided Rs. 2,27,182 for the revenue account. Claims took Rs. 91,982 and expenses amounted to Rs. 57,086. The underwriting surplus permits the transfer of a larger sum as also from the Fire Branch to the Company's profit and loss account. The Marine Fund is also on a strong basis at Rs. 2,00,000.

The net premiums in the Accident Branch amounted to Rs. 2,18,728. The outgo under claims Rs. 1,09,687 represents a loss ratio to 50.15 per cent. The Funds stand at Rs. 97,491. The total at credit of the latter account is Rs. 90,276. From this the Directors recommend that Rs. 20,000 be allocated to General Reserve. The dividend of 15.0 per cent for the shareholders absorbs a little over half the available surplus and Rs. 25,276 is carried forward. The total funds of the company have increased during 1941 from Rs. 10.94 lakhs to Rs. 12.66 lakhs showing a greater increase than that recorded in 1937.

The Concord balance-sheet shows that the Company had invested Rs. 9¾ lakhs in 3 per cent. Defence Bonds out of the total investment in Government Securities amounted to Rs. 12 lakhs. Besides the three Funds totalling Rs. 6.71 lakhs a Reserve Fund of Rs. 2.5 lakhs was held. There were in addition reserves for taxation and bad debts. The tenth report bears witness to the uniform progress of the Company which benefits from the influence and connections of Andrew Yule & Company.

FIRE ACCOUNT.

(In 000's of Rs.)

	1939	1940	1941
Premiums ..	4,13	3,97	6,47
Claims ..	1,79	1,68	2,61
Commission and Expenses ..	1,98	1,60	2,51
Funds ..	2,94	3,08	3,74
Ratio of Expenses to Premium ..	47.91	40.23	38.77
Ratio of Claims to Premium ..	43.29	42.22	40.38

ACCIDENT ACCOUNT.

Premiums ..	1,73	2,41	2,19
Claims ..	84	1,00	1,10
Commission and Expenses ..	66	94	82
Funds ..	74	1,06	97
Ratio of Expenses to Premium ..	37.85	38.83	37.38
Ratio of Claims to Premium ..	48.52	41.59	50.15

MARINE ACCOUNT.

	(In 000's of Rs.)		
Premium ..	1,05	1,75	2,27
Claims ..	53	76	92
Commission and Expenses ..	21	40	57
Funds ..	62	1,02	2,00
Ratio of Expenses to Premium ..	20.00	22.07	25.11
Ratio of Claims to Premium ..	50.25	43.00	40.50

BALANCE SHEET.

	1939	1940	1941
Liamilities—	Rs.	Rs.	Rs.
Capital ..	3.00	3.00	3.00
Fire Funds ..	2,94	3.08	3,74
Marine Funds ..	62	1,02	2,00
Accident Funds ..	74	1,07	97
Reserve Fund ..	2,00	2,30	2,50
Other Items ..	3,95	4,08	5.90
Total ..	13.25	14,55	18,11
Assets—			
Government securities ..	6,84	9,04	12,06
Other Investments	58	74	81
Sundry Debtors ..	1,43	1,14	29
Cash ..	1,22	1,60	1,70
Other Items ..	3,18	2,03	3,25
Total ..	13,25	14,55	18,11

HERCULES INSURANCE COMPANY, LIMITED.

The year 1941 was one in which the Hercules Insurance Co., Ltd., made good progress. The total net Income for the year reached the record level of Rs. 6,94,157 as compared with Rs. 5,77,154 for the previous year, an increase of Rs. 1,17,003. Underwriting results were very satisfactory as is borne out by the aggregate trading profits of Rs. 1,12,964.

The General Reserve has been increased by Rs. 75,000 and now stands at Rs. 4,20,000, a substantial figure in relation to the Paid-up Capital.

The strong financial position is reflected in the Balance Sheet, the Company holds over Rs. 17 lakhs in Cash and Government Securities, an increase in these two items of about Rs. 7,80,000 over 1940.

Fire Account.

	(In thousands of Rs.)		
	1939	1940	1941
Premium ..	3,26	3,15	3,53
Claims ..	1,51	1,10	91
Expenses ..	1,68	1,62	1,64
Reserves ..	1,47	1,67	1,84
Ratio of claims to premiums ..	46.3%	34.8%	30.0%
Ratio of expenses to premiums ..	51.5%	51.4%	46.2%
Ratio of reserves to premiums ..	45.0%	53.0%	52.1%

Accident Account.

	1939	1940	1941
Premium ..	85	91	98
Claims ..	16	37	30
Expenses ..	39	20	39
Reserves ..	53	56	59
Ratio of claims to premium ..	19.4%	40.5%	30.1%
Ratio of expenses to premium ..	46.6%	41.3%	40.0%
Ratio of reserves to premium ..	62.8%	61.5%	60.2%

Marine Account.

	1939	1940	1941
Premium ..	1,02	1,70	2,43
Claims ..	33	52	1,01
Expenses ..	34	50	62
Reserve ..	59	1,08	1,82
Ratio of claims to premium ..	32.0%	30.5%	41.4%
Ratio of expenses to premium ..	33.5%	29.4%	25.7%
Ratio of reserves to premium ..	58.0%	63.5%	74.8%

Balance Sheet.

	1939	1940	1941
Liabilities			
Capital ..	9,00	9.00	9,00
Reserve ..	2,75	3,45	4,20
Fire Fund ..	1,47	1,67	1,84
Accident Fund ..	53	56	59
Marine Fund ..	59	1,08	1,82
Other Items ..	8,62	6,68	10,08
Total ..	22,96	21,44	27,53
Assets—			
Giltedge Securities	9,69	10,29	14,40
Debentures and Preference Shares ..	4,44	4,43	5,51
Enquiry Shares ..	2.64	3,80	2,93
Other Items ..	77	1,43	1,26
Cash ..	5.42	1,49	3,43
Total ..	22,96	21,44	27,53

HINDUSTHAN CO-OPERTAIVE INSURANCE SOCIETY, LIMITED.

The somewhat late appearance of the Hindusthan report and accounts cannot obscure the brilliant results obtained in 1940. The report and accounts illustrate not only the strengthening or resources in the case of Hindusthan but the fact that the Society has actually improved its position in the war period. No achievement can be more heartening, and the Board is certainly entitled to the plaudits of the public and the thanks of the shareholders. The total new business for 1941 amounted to 13,953 policies assuring in the aggregate Rs. 2.72 crores as against 15,929 policies for Rs. 2.83 crores in 1940. The average value of the policy in the case of Hindusthan remains higher than in the past. The mild setback in new business explains why the premium on new business for 1941 is Rs. 12.79 lakhs as against Rs. 13.89 lakhs in the preceding year. The best method of evaluating Hindusthan's record for 1941 would be to look at the revenue figures in the life branch. They certainly conform to general anticipations as the total premium revenue has advanced Rs. 89.36 lakhs as against Rs. 84.59 lakhs in 1940. The more pronounced improvement in reagrd to investment receipts for the year, viz., Rs. 20.76 lakhs as against Rs. 12.12 lakhs is a reminder of the catholic and enterprising policy for which Hindusthan is renowned. The vigorous expansion in revenue more than neutralises the slipback in new business which it may be recalled usefully, followed a striking increase in business.

The growth of revenue is paralleled by a similar growth of the funds. Exclusive of the transfer of excess reserve for depreciation of investments there has been a rise of nearly Rs 57 lakhs in the Life Fund as compared with Rs. 46.22 lakhs after 1940. The striking record of preceding years has been bettered. This vast addition is independent of a favourable claim experience and a lower expense ratio in 1941. It may be taken as proof of Hindusthan's leadership, as much as the relatively small proportion of claims to annual premium revenue. Claims and surrenders together took less than Rs. 27 lakhs out of a total revenue of Rs. 1.1 crores. This is as striking a feature of the annual report as the increase in total business in force to Rs. 18.99 crores. The further drop in the expense ratio is to be interpreted as proof of successful management. The most irrefragable proof, however, is provided in this case by the addition of over Rs. 66 lakhs to the Life Fund to raise it to Rs. 4.24 crores nearly. The annual meeting when it considers the results cannot but record its satisfaction with the realisation of previous anticipations. The outlook may be summed up as more than favourable. And policyholders who read the report should examine the balance-sheet and classified summary as well. It will be learnt with great satisfaction that the holding of approved securities has increased further substantially in conformity with recent policy. This increase is far more significant than the increase shown under mortgages and policy loans (Rs. 33.89 lakhs and Rs. 44.5 lakhs respectively) on the basis of a comparison with the balance-sheet as at the end of December 1940.

The Life Fund of the Hindusthan is distributed among assets such as debentures and railway shares chosen for security and yield. The increase under house and landed property in a whole year is barely Rs. 6 lakhs while the increase under revenue items augurs well for the coming year. The liability under outstanding claims, Rs. 13.1 lakhs and sundry creditors Rs. 8.71 lakhs nearly, is almost covered by revenue items; and the cash balances totalling over Rs. 21.69 lakhs at the end of 1941 point to a state of exceptional liquidity, suggesting arresting prevision on the part of the management. The report naturally contains a felicitous reference to the severance of the Hon. Mr. N. R. Sarker's connection with the Hindusthan, for the public in India has for a long while associated Mr. Sarker with the Hindusthan. The last year of the association is in many ways the most remarkable in a remarkable career, and the Society is fortunate in retaining at present as its chief executive, Mr. N. Datta whose own record is supported by Hindusthan's last five annual reports, in fact ever since Mr. Sarker passed on to the wider stage of public affairs.

THE INDIAN LIFE ASSURANCE CO. LIMITED.

(Established—1892)

Head Office:—KARACHI.

The forty-ninth Annual Report of the Indian Life Assurance Company, Limited, of Karachi records another year of progress for the Company. A glance through the report will help one to realise that this Company really is one of the leading Life Offices in India. Financially there is no doubt that it is the strongest and soundest of all our Swedesi Insurance institutions.

During the year under review policies were issued for Rs. 36,40,500, an increase of 13% over the new business figures of the previous year. This is more than satistactory in view of the fact that at present so many other Indian Companies are showing a decrease in the amount of new business written. The total business on the books of the Company is now Rs. 2,54,20,222.

The amount paid in claims during the year was Rs. 7,37,017 which compares very favourably with that paid out by any other company under the same head.

The balance of the Life Insurance Fund at the end of the year was Rs. 97,33,328 as against Rs. 93,65,191 at the commencement of the year, recording an increase of Rs. 3,68,137 on the working of the year. The Premium Income for the year was Rs. 9,44,288, while Interest and other income amounted to Rs. 4,81,672.

The major part of the Company's assets consist of Gilt-edged and other first-class securities of the face value of Rs. 1,02,96,967, their market value on 31st. December 1940 being Rs. 1,13,40,903. The Company holds

an Investment Reserve Fund of Rs. 7,02,614-6-2. The other assets of the Company consist of valuable house property, Policy loans, well secured mortgages etc.

The Company and all those concerned with it are to be congratulated on the termination of another eventful year. The year 1942 will usher in the Golden Jubilee of the Indian Life, and another great swadeshi institution will be crossing its fiftieth milestone.

For the year ended December 1940 the Indian Life Assurance Co. reports an increase in the new business. This will alone confer interest on the 1940 report and account which show that new business resulted in the issue of 1,702 policies for over Rs. 36.4 lakhs. The total assurances in force at end of 1940 exceeded Rs. 2.54 lakhs, and investment receipts of over 4.81 lakhs. The Company experienced an increase in claims by death and maturities and this, like the small increase in the lapse ratio, is perhaps the only mark of adverse circumstances engendered by the war. The total expenses of management, show a small increase but the year's surplus receipts have provided an addition of over Rs. 3.68 lakhs to the Life Fund which stands at Rs. 97.33 lakhs. The directors have naturally expressed satisfaction with this addition to the Fund and the fact that the expense ratio remains under last year's level indicates one other source of improvement. The balance sheet certainly reflects that the position attained by the Indian Life Assurance Co., Limited in relation to the total business of 2.5 crores is unusually strong as the Company had securities that are valued at over Rs. 113 lakhs. The balance sheet proves that the company's investment policy remains demonstrably sound. The only item out of the total assets of Rs. 139.28 lakhs that will not be regarded as wholly liquid are loans and mortgages totalling Rs. 19.8 lakhs and house property valued over Rs. 11.4 lakhs. The latest balance sheet again indicates that the company in spite of the difficult conditions reported last year has a very substantial margin between the book value and the market value of the securities held in the Life Fund. It is in no conventional manner that one praises once again the way in which ILACO's assets are distributed. This old Karachi company certainly has the enviable distinction of retaining substantial reserves in support of a small paid-up capital, apart from the contingent liabilities of the shareholders. The age and successful working of the Company are reflected in the dividend of 25 per cent recommended.

Life Account.

	(In thousands of Rs.)		
New Business—	1939	1940	1941
No. of Policies (actual) ..	15,08	17,02	16,54
Premium income ..	1,51	1,82	2,04
Total premiums ..	8,46	9,44	10,44
Life Fund at the beginning of the year ..	90,37	93,65	97,33
Life Fund at the end of the year	93,65	97,33	1,00,18
Net increase ..	3,28	3,68	2,85
Claims ..	6,74	7,37	8,96
Expenses ..	1,89	2,64	2,87
Ratio of expenses to Premiums ..	22.3%	28.0%	27.3%

Balance Sheet.

Liabilities—			
Capital ..	1,45	1,45	1,45
Life Assurance Fund	93,65	97,33	1,00,18
Shareholders' Reserve Fund ..	8,00	8,00	8,00
Claims outstanding	2,21	1,98	3,42
Other items ..	27,99	30,53	1,34,10
Total ..	1,33,30	1,39,29	1,47,15
Assets—			
Giltedged securities	92,58	1,03,04	1,03,11
Other approved securities ..	11,43	....	....
Total approved securities ..	1,04,01	1,03,04	1,03,11
Property ..	6,98	11,44	11,70
Building and House Cash ..	3,27	1,57	7,99
Other items ..	19,04	23.24	24,35
Total ..	1,33,30	1,39,29	1,47,15

JUPITER GENERAL INSURANCE

(Established—1919)

Head Office:—BOMBAY.

Inspite of the various handicaps suffered by the Insurance Companies on account of the War the "Jupiter General" shows an alround progress in the different departments during the year 1941. The reports presented at their recent annual meeting disclose that premium revenue in the fire branch amounted to Rs. 12,62,721-10-8 and the loss ratio works out to only 31.76% of the premium income. Total expenses approximated Rs. 5,81,267-1-5 which is equal to 46.03% of the premium income. The underwriting surplus accounts for a contribution of Rs. 1.42 lacs of the profit and loss account.

Total premiums in the Marine branch amounted to Rs. 6.45 lacs and total claims came to about 1.80 lacs, which is equal to 27.89% of the year's premium. The expense ratio of this branch has been kept down at 27.17% of the total premium income. The contribution towards the profit and loss account of this department was just above one lac.

The Miscellaneous branch of the Company showed a slight progress on the previous year and the premiums realised amounted to 2.16 lacs. Losses worked out to about Rs. 86,487-11-8 which is 39.89% of the premium income. The amount transferred to profit and loss account was Rs. 47,170-7-4.

The dividends on the ordinary and preference shares are maintained at 5% and 6½% free of tax respectively and the carry forward is Rs. 6,578-4-11. The general strength shown in the balance sheet assures a steady improvement in the business of the Company year by year.

Life Account.

New Buisness—	(In thousands of Rs.)		
	1939	1940	1941
Policies issued ..	9,93	9,76	15,38
Amount ..	17,48	20,86	44,83
Premiums on New Business ..	94	1,18	2,44
Total Premiums ..	5,38	5,68	7,20
Claims	96	3,97	1,93
Expenses ..	1,75	2,01	2,10
Life fund at the beginning of the year	13,61	16,10	19,00
Life fund at the end of year ..	16,70	19,00	21,00
Ratio of expenses to premium ..	35.8%	35.3%	17.2%

Fire Account.

	(In thousands of Rs.)		
	1939	1940	1941
Premiums ..	10,90	8,87	12,63
Claims ..	4,09	2,62	4,01
Expenses ..	1,72	2,25	2,94
Total Reserves ..	9,00	6,30	7,80
Ratio of claims to Premia ..	37.52%	29.55%	31.75%
Ratio of Expenses to Premia ..	15.7 %	25.3 %	23.3 %
Ratio of Reserves to Premia ..	82.56%	71.02%	61.75%

Marine Account.

	(In thousands of Rs.)		
	1939	1940	1941
Premiums ..	3,52	5,88	6,46
Claims ..	87	2,06	1,80
Expenses ..	46	74	1,23
Total Reserves ..	2,50	4,00	6,00
Ratio of claims to Premia ..	24.71%	18.02%	27.86%
Ratio of Expenses to Premia ..	13.06%	12.58%	19.04%
Ratio of Reserves to Premia ..	71.02%	68.02%	92.88%

Accident Account.

	(In thousands of Rs.)		
	1939	1940	1941
Premiums ..	2,42	2,11	2,17
Claims ..	1,12	1,13	86
Expenses ..	29	30	31
Total Reserves ..	1,20	1,20	1,20
Ratio of claims to Premia ..	46.28%	53.55%	39.63%
Ratio of Expenses to Premia ..	12%	14.21%	14.28%
Ratio of Reserves to Premia ..	49.58%	56.87%	55.3 %

LAKSHMI INSURANCE COMPANY LIMITED

(Established—1924).

HeadOffice:—LAHORE.

Lakshmi's new business for the year ending 31st December, 1941 reveals that 4,304 policies assuring Rs. 1,01,41,075 were issued during the year. This shows guarded increase over the last year by Rs. 19 lakhs and is satisfactory indeed under the present difficult conditions.

The total receipts for the year amounted to Rs. 45,71,362 of which Rs. 38,44,127 was derived from premiums. The outgo was Rs. 21.91 lacs. The surplus over expenditure of Rs. 23.80 lakhs has been added to the life fund which now stands at 1.79 crores. The expenses for the year amounted to Rs. 9.41 lakhs against Rs. 9.47 lakhs for the previous year. There has been a succesive decline in the over-all expense ratio in recent years. The reduction in 1941 to 24.69 per cent from 25.77 per cent in the previous year is gratifying. The uncertain insurance outlook is reflected in the increase in policy-holders' loans and in loans under N. F. Clause from Rs. 17.63 lakhs to Rs. 19.77 lakhs.

The investment policy has been scientific and is based on the sound principle of safety and of spreading of risks. The result is a well-balanced portfolio of investments which are, in broad terms, shock-proof and which yield a satisfactory return. Above all, the directors have always stressed the great value of a whole-some financial policy. The result is the variety and strength of the reserves. Here is the list of the reserves maintained:

"Contingency Reserve Account Rs. 56,148-15-1; Miscellaneous Reserve Account Rs. 1,867-11-9; General Reserve Account Rs. 2,01,539-4-4; Investment Reserve Account Rs. 4,71,340-4-2; Depreciation on Building Reserve Account Rs. 1,43,551-13-4; Depreciation of Furniture Motor Cars and Medical Instruments Reserve Account Rs. 43,352-7-6."

Rs. 95.43 lakhs are invested in gilt-edged and other approved securities. Loans on Company's policies amount to Rs. 19.77 lakhs. House property and mortgages stand at Rs. 54.66 lakhs. The total assets have increased to Rs. 195.23 lakhs.

While commenting on Lakshmi's progress at the end of the second year of its career, it was described as an Infant Prodigy. A year or two thereafter, the "Policy" said Lakshmi a most flattering, but most richly-

deserved tribute. The "Policy" wrote "What must almost amount to a record event in the life assurance and what is certainly an unprecedented event in the history of life assurance in India has been accomplished by a native Indian Office, the 'Lakshmi Insurance Co., Ltd.,' The Lakshmi *today is no longer an infant, but it is a* prodigy alright. And it has maintained its career of record events. There is hardly any Company whose life fund almost touched the Rs. 2 crores mark and whose annual income has exceeded Rs. 45 lakhs mark at the end of 18 years, whose expense ratio is steadily declining and which can claim proud ownership of its own office buildings in the more important centres of India. Verily the Lakshmi has been beloved of the Goddess of Wealth.

New Business—

	(In thousands of Rs.)		
Life Account	1939	1940	1941
Number of policies (actual) ..	78,12	41.53	43,04
Amount assured	1,50,10	82.69	1,01,41
1st year premium, single premium and consideration for annuities ..	37,56	36,96	38,44
Claims ..	7,41	9,42	9,81
Expenses ..	11,72	9,47	9,41
Life Fund at the beginning of the year ..	1,12,64	1,33,48	1,55,22
Life Fund at the end of the year	1,33,48	1,55,22	1,79,02
Net increase in Life Fund ..	17,26	21,74	23,80
Overall expense ratio ..	31.54%	25.77%	24.69%

Balance Sheet.

Liabilities—			
Paid-up Capital ..	1,01	1,01	1,01
Life Fund ..	1,33,48	1,55.22	1,79,02
Outstanding claim	2,68	2.36	3,23
Other items ..	12,24	11,00	11,97
Total ..	1,49,41	1,69,59	1,95,23
Assets—			
Giltedged securities ..	38,87	45,77	77,43
Approved securities ..	14,45	11,08	18,00
Total ..	53,32	56,85	95,43
Other securities, stocks and shares	15,10	15,28	10,97
Loans on Company's Policies	12,54	17,63	19,77
Other Loans and Mortgages ..	28,06	33,37	20,83
Other House Property ..	29,04	33,95	33,83
Cash ..	3.80	5,92	5.89
Other items ..	7,55	6,59	7,51
Total ..	1,49,41	1,69,59	1,95,23

THE METROPOLITAN INSURANCE COMPANY LIMITED.

(Established—1930)

Head Office:—CALCUTTA.

With new business figures running into Rs. 73,03 lakhs in 1941, it may be fairly claimed that the Metropolitan Insurance Company is now quite firmly established. The recovery in new business, after the slight setback recorded in 1940, is suggestive of exceptional progress in the war period. The Directors observe that total business proposed came to Rs. 85,36 lakhs of which Rs. 73,03 lakhs was the value of the policies issued. More striking are the figures contained in the report as regards the expense and commission for the year were equal to 42.8 per cent of new premium. In the eleventh year a further effort to reduce the expense ratio appreciably has been attended with success. It is this which serves to enhance the credit due to the company for having staged a recovery under new business in 1941.

The revenue account shows that first year's premium amounted to Rs. 2,05.743/- while renewals provided Rs. 8,44,736/-. The premium receipt of over Rs. 10.5 lakhs were available to meet claims and surrenders amounting to Rs. 1,68,527-11-0. The total under expenses and commissions exceeded the claims for the year. The year's surplus is, however, as much as Rs. 4.9 lakhs with the result that the Life Fund has risen from Rs. 22.32 lakhs to Rs. 27,24,236-3-3 at the end of the year. As compared with the preceding year the net addition of 23 per cent to the Fund is larger. Outstanding claims according to the report amount to Rs. 62,875-0-0 and is very generously covered by cash balances totalling Rs. 3,83.832 at the end of 1941.

The company's improved position is reflected in the net yield of 4.1 per cent secured on the funds, last year. The main reason for this is the distribution of assets. If there is *no striking increase* in the proportion of Government securities including deposits among the company's assets the increase under policy loans, mortgages etc., is to be expected. The completion of the new office in Clive Row accounts for the increase under House Property valued at Rs. 3,60,151/13/-. The high proportion of loans etc., amounting to Rs. 14.33 lakhs to total assets of Rs. 30.25 lakhs will appear from the balance-sheet.

There is no classified summary of assets in the report since the stock exchange securities consist of G. P. notes in the value of Rs. 3.25 lakhs deposited with the India and Burma Governments and investments valued at Rs. 3,41.282/8/- in 3, 3½, 4 and 5 per cent loans. The Company with a paid-up capital of Rs. 1 lakh has reserves for taxes, investment and contingency to the extent of Rs. 40,000/-.

New Business—

	(In Thousands of Rs.)		
	1939*	1940	1941
Sum assured ..	50,26	71,37	73,03
Total Premiums ..	7,12	9,76	10,68
Life fund at the beginning of the year ..	14,02	17,81	22,32
Life fund at the end of the year ..	17,81	22,32	27,24
Net increase ..	3,79	4,51	4,92
Claims	1,10	1,27	1,51
Expenses ..	2,75	4,58	4,49†
Ratio of Expenses to Premium ..	34.9%	34.69%	42.8%†

BALANCE SHEET.

Liabilities—			
Capital	1,00	1,00	1,00
Life Assurance fund	17,81	22,32	27,24
Claims outstanding ..	1,62	1,30	1,27
Other items ..	17	37	74
Total ..	20,69	24,99	30,25
Assets—			
Giltedged Securities	5,76	5,76	6,26
Other Approved Securities ..	..	..	5,68
Total Approved Securities ..	5,76	5,76	11,94
Loans on Life policies	2.86	3,72	4,58
Other mortgages and Loans ..	6.43	7.95	4,07
Cash ..	1,95	2,13	3,84
Other items ..	3,60	5,43	5,82
Total ..	20,60	24,99	30,25

* *Nine months ended 31st Dec. 1939.*
†Including commissions.

NATIONAL INSURANCE COMPANY, LIMITED.

A fall in the year's expense ratio 26.4 percent is enough to confer exceptional interest on the National Insurance Company's report for 1941. A severely limited decline in new business as compared with the pre-war standard is about the only direct result of the war which has not clearly touched revenue or investments. For this happy position, supported by ample evidence, the Board of the National may well take full credit. It has carried out extensive precautions independently as Mr. Chaudhuri described at the annual meeting. The only thing in the revenue account attributable to the spreading war is the increase in surrenders. That should be viewed as a temporary aberration, for one knows at present that nothing can affect insurance. Even in occupied Europe the *policyholder* is wholly secure and the average policyholder in India can endorse the view that business as usual is a *working principle* for himself and the company to which he is bound by a contract. The Company can clearly fulfil its contract and it is for the policyholder to accept the same view of his obligations. How reassuring the position is can only be inferred from the figures presented in the annual accounts. An old established Company like the National with its tradition of impeccable management has no reason to regret a setback in new business. The total shown for 1941 is Rs. 1.68 crores including re-assurances. The new business yields a premium income of over Rs. 7.98 lakhs. The revenue *account shows premiums exceeding* Rs. 59.3 lakhs. The year's outgo in respect of claims is Rs. 27.65 lakhs and surrenders took Rs. 6.27 lakhs in the past year. Investment receipts total Rs. 15.88 lakhs. After meeting all expenses of the year, the Fund receives an addition of over Rs. 23.45 lakhs. Eminently satistactory from the point of revenue and funds alike, it will be concluded. The Company's business in Kuala Lumpur and Rangoon is at an end, but the Head Office deals with the policyholders who have left enemy-occupied territories.

The increase in the Life Fund to Rs. 3.69 crores is of course in line with successive additions to the Fund which has advanced year after year to new heights. The importance of the balance-sheet published in "Indian Finance" derives largely from the distribution of the funds. The figures in respect of liabilities as at the end of 1941 are of little importance as against the distribution of assets. The mortgages held by the Company amount to Rs. 20.36 lakhs. The Company has advanced a substantial sum, as much as Rs. 50.67 lakhs, on the security of its policies. The policyholders of the National gets more than the usual liberal assistance. The holding of giltedged securities, exclusive of the usual statutory deposits, is large—Rs. 67.62 lakhs in Indian Government stocks; Rs. 26.26 lakhs in Provincial loans and Rs. 51.72 lakhs in other trustee stocks in addition to Rs. 4.97 lakhs in British and Colonial stocks. The proportion of giltedged to total investments is reasonably large, but the National's Board has carried out with admirable forethought the principles successfully evolved by British life offices which have successfully limited their holding of giltedged and mixed investments in order to reduce risks in regard to value and marketability, and increase at the same time the average yield on the funds. The limited amount under mortgages is reassuring and the only item on which doubt may be cast is House property out of India shown as Rs. 11.38 lakhs while that in India is shown at Rs. 28.42 lakhs. The cash is not large but the agents' balances are as low as Rs. 25,658-8-5 proving that the National's effecient management keeps down one item

rigorously. The revenue items, premiums, outstanding interest due etc. are ample in relation to outstanding liabilities and premium deposits. These are the points that deserve emphasis in every balance-sheet, and the National being old, sound and prosperous, provides a pattern. When that is said, comment is finished; but one may well ask the policyholder, present and prospective, to examine how his own contribution to economic stability matters at present. Regular saving makes for avoidance of inflation and the duty to keep up premium payments can be discussed in relation to the maintenance of confidence and the sterilisation of purchasing power. The National's Chairman, it is good to note, discussed this aspect in asking for continued support from agents and others.

NEW INDIA ASSURANCE CO., LTD.

In spite of the difficulties regarding insurance business the New India Assurance Company Limited has been able to report substantial progress in the several departments in the year 1941. The increase in new business, especially in the Life Department, is noteworthy, the total amount of new business written being Rs. 1.77 crores against Rs. 1.43 crores in 1940. It may be said that only in the Marine Department no appreciable progress has been reported. It should be remembered, however, that business so far as this department is concerned, is risky and the Company cannot with any degree of accuracy foresee any developments in the war situation.

In the Fire Department net premiums amount to Rs. 40 lakhs against Rs. 36. lakhs in 1940; net claims paid and outstanding amount to Rs. 17.28 lakhs against Rs. 10.88 lakhs. There is a significant decline in the amount of commission, expenses of management and foreign taxes paid to Rs. 11.12 lakhs from Rs. 12.57 lakhs, the proportion of expenses to total premiums being 27.8 per cent against 24.6 per cent in the previous year. After increasing the additional reserve by Rs. 1.7 lakhs (Rs. 2 lakhs) a balance of Rs. 8.93 lakhs has been transferred to profit and loss account. Reserve for unexpired liability remains at 40 per cent of the premium income and the additional reserve amounts to Rs. 29 lakhs. The combined reserves were Rs. 45 lakhs against Rs. 41.54 lakhs.

In the Accident and Miscellaneous department net premiums amounted to Rs. 13.45 lakhs against Rs. 11.63 lakhs in 1940. New claims paid and outstanding amounted to Rs. 7.31 lakhs against Rs. 5.06 lakhs. Expenses of management, foreign taxes, etc. were lower at Rs. 3.34 lakhs against Rs. 3.42 lakhs, the proportion of expenses to premium being 24.8 per cent against 24.4 per cent. After increasing the additional reserve by Rs. 50,000 a balance of Rs. 1.99 lakhs has been transferred to profit and loss account. The reserve for unexpired liability remains at 40 per cent of the premium for the year, and the additional reserve amounts to Rs. 8.52 lakhs. Combined reserves were Rs. 13.88 lakhs against Rs. 12.65 lakhs.

In the Marine Department net premiums amounted to Rs. 39.29 lakhs (Rs. 38.11 lakhs) and net claims Rs. 24.31 lakhs (Rs. 21.11 lakhs). Total expenses were Rs. 4.8 lakhs (Rs. 4.28 lakhs) being 12.22 per cent of the net premiums for the year against 11.3 per cent. The fund amounted to Rs. 56.38 lakhs against Rs. 44.89 lakhs.

In the Life Department, during the year, 7,110 proposals were received against 6,452 in 1940 assuring for an amount of Rs. 2.34 crores against Rs. 1.74 crores. 5,544 proposals against 5,281 proposals were issued and resulted in policies for Rs. 1.77 crores against Rs. 1.43 crores. In addition, three immediate annuity bonds for a consideration of Rs. 10,146 and four deferred annuity bonds for an annual premium of Rs. 3,062 were issued. The total number of policies in force was 38,108 assuring a sum with bonuses of Rs. 10.6 crores of which Rs. 58.27 lakhs were re-assured. The claims experience of the Company continues to be satisfactory; total amount during the year being Rs. 7.93 lakhs against Rs. 5.68 lakhs. There is a slight increase in the expenses of management to 25.9 per cent from 23.8 per cent of the premium income for the year.

Coming to the balance-sheet, there is an increase in total funds by Rs. 52.54 lakhs to Rs. 4.14 crores. There was an increase by Rs. 64.34 lakhs to Rs. 3.61 crores in 1940. The greater increase in 1940 was due to the transfer of portfolio on remission of re-insurance treaty amounting to Rs. 7.09 lakhs and the writing back of the reserve for depreciation of investments amounting to Rs. 2.08 lakhs.

THE ORIENTAL GOVERNMENT SECURITY LIFE ASSURANCE CO., LTD.

(Established—1874).

Head Office:—BOMBAY.

Notwithstanding the discouraging conditions prevailing because of the War and trade deadlocks within the country, the Oriental Government Security Life Assurance Co., Ltd., has had another successful

ASIAN'S RECORD

Thirty years of Dependable Service and Sound Progress year by year

PROGRESS AS AT THE END OF 1941

Life Fund - -	Rs. 96,89,000
Total Assets - -	Rs. 1,12,80,000
Total Assurances in Force - -	Rs. 4,46,00,000

It's the company to represent work for ASIAN and build up your future.

Applications solicited from capable and influential persons.

●

THE ASIAN ASSURANCE COMPANY, LIMITED

ASIANBUILDING, BALLAD ESTATE, BOMBAY

Calcutta Branch:

8, DALHOUSIE SQUARE EAST, CALCUTTA

INSURANCE IS a MEANS TO FINANCIAL SECURITY

THE JUPITER GENERAL INSURANCE COMPANY, LIMITED

(INCORPORATED IN INDIA)

TRANSACTS

LIFE, FIRE, MARINE, ACCIDENT AND OTHER PROGRESSIVE TYPES OF INSURANCE BUSINESS

Authorised Capital - -	Rs. 2,00,00,000
Issued and Subscribed Capital - - -	„ 1,50,00,000
Paid-up Capital - -	„ 23,74,800
Total Assets Exceed -	„ 88,00,000
Total Life Assurance Fund Exceeds - -	„ 24,40,000

The above figures speak convincingly about the Popularity and Confidence of the Public enjoyed by the Company.

***Head Office*:—FORT, BOMBAY**

***Calcutta Branch*:—15, CLIVE STREET**

year, their output of 37,067 New Policies assuring Rs. 8,16,19,725 for the year 1941, under review, being ahead of their 1940 returns by a substantial margin of 1303 Policies assuring nearly Rs. 67½ lakhs.

The total number of Policies in force as at 31st December, 1941 was 4,28,703 assuring with Bonus additions and increases under Triple Benefit Policies the sum of Rs. 85,69,13,455 of which Rs. 48,02,980 is re-assured.

Financially, this Premier Life Office goes from strength to strength. The income for the year 1941 amounted to Rs. 4,99,51,805-3-3 of which Rs. 3,84,06,711-3-3 was derived from Premiums, the excess over 1940 Premium Income being Rs. 11,23,610-11-8. The outgo amounted to Rs. 2,89,41,227 leaving a balance of receipts over disbursements of Rs. 2,10,10,577. The ratio of expenses, including commission to premium income during 1941 is 19.6 per cent as compared with 20.6 per cent in 1940 and 22.6 per cent in 1939. The reduction in the expense ratio would have been even more satisfactory but for additional expenditure on account of the War in the shape of A. R. P. provisions, evacuation expenses and emergency allowances.

Careful selection of lives is obvious in that the Company's Claim Experience continues to be very satisfactory, the ratio of actual deaths in the year under review, to those expected and provided for by the mortality basis adopted at the last Valuation being 48.2 per cent as compared with 46.0 per cent in 1939 and 1940 and 49.0 per cent in 1938. The claims by death and maturity including bonus additions amounted to Rs. 1,72,10,790.

The excess of the aggregate market value over the aggregate book values of the Company's investments in Stock Exchange securities amounted to nearly Rs. 327¾ lakhs, the corresponding amount for the previous year being just over Rs. 299¼ lakhs. The proportion of the Company's investments in terminable and non-terminable loans has changed slightly as a result of operations in the year under review, its investments in Terminable Loans of the Government of India or other Securities authorised under the Indian Trusts Act being 44 per cent of its total investments in such securities as compared with 49 per cent at the end of the previous year. All the securities stand in the Company's Books at or below cost price and at or below Market Value.

Referring to the effects of the enemy occupation of the Company's Branch Headquarters in Kuala Lumpur and Rangoon, on the financial position of the Company, the Chairman in his speech delivered at the 67th Ordinary General Meeting of the Company said that the book values of its properties in these two centres was about Rs. 9¾ lakhs which he considered was, as compared with the Company's average triennial profit in the past or as anticipated for the future, such that even their complete loss should have comparatively little effect on the Company's financial position.

Owing to the judicious management by the Board of the Company's affairs all these years, its finances have reached such an unassailable position that it will be able to undertake to meet all claims by death, in the occupied territories, namely Malaya and Burma, to the fullest extent. The Company would also justifiably undertake to revive the policies of those policyholders in Malaya and Burma who applied for revival after communications were again restored on liberal terms.

Principal Features of Last 3 Years' Operations.

	(in thousands of Rs.) 1939	1940	1941
No. of policies issued ..	39,965	35,764	37,067
Sum Assured ..	7,73,10	7,48,86	8,16,20
Premium from New Business ..	43,35	40,95	43,86
Total Premium Income ..	3,65,42	3,72,83	3,84,07
Interest ..	1,06,37	1,11,99	1,14,63
Claims by Death ..	62,42	67,69	73,74
Claims by Maturity	86,61	85,25	98,37
Commission and Expenses ..	82,72	76,89	75,24
Life Fund at beginning of year ..	23,08,19	25,21,69	27,46,69
Life Fund at end of year ..	25,21,69	27,46,69	29,56,80
Ratio of Expenses to Premium ..	22.6%	20.6%	19.6%

Balance Sheet as at 31st December.

	(in thousands of Rs.) 1939	1940	1941
Liabilities—			
Capital (paid-up)	6.00	6.00	6,00
Funds—			
Life Assurance Fund ..	25,21,69	27,46,69	29,56,80
Contingencies Reserve Fund ..	6,07	3,82	3,82
Building Fund ..	2,39	2,57	2,75
Total ..	25,36,15	27,59,08	29,69,37
Claims Outstandings ..	48,19	43,82	48,74
Sundry Liabilities ..	35,65	42,63	54,64
Total ..	26,19,99	28,45,53	30,72,75
Assets—			
Giltedged Securities (Indian and Provincial Govt. Loans) ..	19,95,33	21,50,58	23,29,16
Other Approved Securities ..	1,40,30	1,49,14	1,45,78
Other Securities ..	18,22	19,57	21,22
Other Investments (Shares and Debentures) ..	..	9,51	35,75
Loans on Policies	2,66,18	3,00,95	3,14,54
Fixed Assets ..	71,17	71,96	71,79
Cash ..	34,20	40,35	41,88
Other Items ..	94,59	1,03,47	1,12,63
Total ..	26,19,99	28,45,53	30,72,75

NATIONAL INDIAN LIFE ASSURANCE COMPANY, LIMITED

In the report of the National Indian Life Insurance Company, Limited for 1941, reference is made to the many changes in the Board. The former managing agents have severed their connection and Mr. Leslie Martin was succeeded as Chairman by the late Maharaja Sir Prodyotkumar Tagore. The National Indian as one of the oldest life offices in India has a firm hold. It is exceptional in reporting an increase in life business for 1941. Total business rose by Rs. 11.33 lakhs to Rs. 60.8 lakhs of which Rs. 7.42 lakhs was reassured. The last year is distinguished not only by an expansion in new business but also by an increase in premium and other revenue. Premia for the year provided Rs. 14.17 lakhs nearly, and investment receipts averaging 4.52 per cent last year amounted to over Rs. 3.32 lakhs. After the increase recorded in premium revenue the total annual revenue in the case of the company rose by Rs. 70,910-3-6 to over Rs. 6.67 lakhs nearly and surrenders took Rs. 73,733-10-0. It will appear from the revenue account the provision for depreciation in investments is almost cancelled out by the profit on realisation of securities. Total outgo for the year shows hardly any increase on 1940 and this accounts for the addition of Rs. 5.27 lakhs nearly to the Life Fund which stood at over Rs. 77.85 lakhs at the end of 1941. The net addition to the Life Fund is greater than that reported last year and is a significant feature of the period in which Mr. S. P. Bose has continued as Manager and has striven successfully to lower the expense ratio. The shareholders' dividend has been raised to 8 per cent tax-free and this is not the least of the achievements of 1941. Since then two Burma branches have been closed. But that is of little interest to the policyholders of the company who can judge from the figures advertised in this issue how well the Company's assets are held, and how skilfully they are distributed. It is hardly necessary to review the accounts in detail. It will again be seen that ample cash balances are held against claims admitted or intimated. The balance at credit of profit and loss account is to be regarded as the reserve that supports the paid-up capital of Rs. 1 lakh and it must be noted here that investments to the extent of Rs. 1,24,510-14-0 were held outside the life fund. Outstanding liabilities are covered by premia due etc. The reports for previous years invited commendation for the skilled and prudent distribution of assets. This time interest must converge on the growth of business in a year when so many Indian companies have met with a setback mainly on account of the war. The National Indian has in the past two years more than shown recovery. It has added about Rs. 10 lakhs to its life fund and enhanced the prestige of its past association by extension of its business.

TABULAR STATEMENT SHOWING THE WORKING OF THE TARIFF BOARD

Date of reference. 1	Personnel. 2	Subject of Enquiry. 3	Recommendations by Tariff Board 4	Action taken by Government 5
July 10, 1923.	*President:* G. Rainy. *Members:* P. P. Ginwala, V. G. Kale.	Steel Industry.	ROLLED STEEL INDUSTRY Steel Industry. Specific duties of varying amount were recommended on different kinds of rolled steel as under— Rs. per ton. Structural shapes, *i.e.*, beams, angles, channels, etc. .. .. 30 Ship, tank and bridge plates .. 30 Common merchant bars and rods .. 40 Light rails (under 30 lbs.) .. 40 Black sheets, whether plain or corrugated .. .. 30 Galvanized sheets, whether plain or corrugated .. .. 45 WROUGHT IRON. Angles, channels .. .. 20 Common bars .. .. 35 A sliding scale of bounties was recommended on the manufacture of medium and heavy rails and fish-plates and the conversion of the existing *ad valorem* duty into a specific duty of Rs. 14 a ton was also advocated. ENGINEERING INDUSTRY. 25 per cent. *ad valorem* duty on fabricated steel generally, but excluding (*a*) steamers, launches, barges, flats, boats and other vessels, and (*b*) all vehicles except colliery tubs and tipping wagons. 25 per cent. *ad valorem* on switches and crossings. Specific duty of Rs. 40 a ton on spikes and tie bars. WAGON BUILDING INDUSTRY. A sliding scale of bounties was recommended subject to a maximum cost of Rs. 7 lakhs to the State. TINPLATE INDUSTRY. A specific duty of Rs. 60 per ton. WIRE AND WIRE NAIL INDUSTRY. A specific duty of Rs. 60 per ton on all wire except barbed and stranded fencing wire which would continue to be subject to 10 per cent. *ad valorem*. A specific duty of Rs. 60 per ton on wire nails. AGRICULTURAL IMPLEMENTS. The *ad valorem* duty to be raised to 25 per cent. on picks, powrahs or kodalis and hoes. LOCOMOTIVE BUILDING INDUSTRY Protection not recommended. STEEL CASTINGS. No specific recommendation was made. ENAMELLED WARE INDUSTRY. No recommendation was made.	The Steel Industry (Protection) Act, 1924, was passed at a special session of the Central Legislature embodying all the recommendations of the Tariff Board except the one regarding Agricultural Implements. The Act received the assent of the Governor-General on 13th June, 1924.
Oct. 5, 1923.	*President:* G. Rainy. *Members:* P. P. Ginwala, V. G. Kale.	Sulphur.	The Board recommended that the import duty on all kinds of sulphur be removed.	Duty removed with effect from 9th June, 1924.
April 10, 1924.	Do.	Paper and Paper Pulp Industries.	The Board recommended a specific duty of one anna a lb. on all writing paper and on all printing paper other than newsprint containing 65 per cent. or more of mechanical pulp. They also recommended that Government should assist the industry by an advance of capital to the extent of not more than Rs. 10 lakhs to the India Paper Pulp Company from their own resources or by the guarantee, in respect of both principal and interest, of a public issue of debentures in order that the possibilities of manufacture of paper by the sulphite process might be fully explored.	The Bamboo Paper Industry (Protection) Act, 1925, was passed in September embodying the proposals of the Board regarding the duty but not the financial assistance, in lieu of which, the period of protection recommended, by the Board was enhanced by 2 years, *i.e.*, from 5 to 7 years.

Date of reference. 1	Personnel. 2	Subject of Enquiry. 2	Recommendations by Tariff Board 4	Action taken by Government, 5
			The Carnatic Paper Mills which intended to make paper from bamboo by the Soda process might also be assisted with capital in the same manner as the India Paper Pulp Company provided the technical advisers of the Government of India were satisfied that the scheme had real prospects of success.	
April 10, 1924.	*President*: G. Rainy. *Members*: P. P. Ginwala, V. G. Kale.	Printer's Ink Industry.	The Board was of the opinion that an increase in the Custom's duty on imported printer's ink from 2½ to 5 per cent. *ad valorem* would meet the case.	Government accepted the proposal.
April 10, 1924.	Do.	Magnesium Chloride Industry.	In the considered opinion of the Board, the claim to protection was not held to be made good.	Government agreed with the Board's conclusion.
April 10, 1924.	Do.	Cement Industry.	The main conclusions of the Tariff Board were— (1) The cement industry in India possessed natural advantages in an abundant supply of all raw materials and was at no disadvantage in regard to labour. (2) Though the consumption of cement in India had grown with great rapidity, it had not kept pace with production which had increased considerably. (3) The price of cement in India was unremunerative which was due entirely to internal competition. (4) The industry was in virtual possession of the up-country market over a large part of India which was small compared to the demand in the ports. (5) Four-fifths of imports came from U. K. Consumers would not purchase Indian cement unless the price was markedly lower. (6) Cement produced in India was generally of very good quality. (7) Notwithstanding the remoteness of the Indian cement works both from coalfields and from the ports, the industry would eventually be able to meet world competition at the ports without special assistance. (8) The difference in price at which Indian cement was likely to displace British was estimated to be Rs. 8 a ton in Bombay and Rs. 12 in Calcutta. (9) It was considered desirable that assistance should take the form of bounties which would be payable on cement consigned to and *via* the four great ports and their adjacent areas. (10) The 15 per cent. *ad valorem* duty should be converted into a spefic duty of Rs. 9 and declared prohibitive. (11) Two schemes having different scales of bounties were drawn up, but whichever scheme was adopted, it should not come into force until the Government of India were satisfied that the price of Indian cement in the ports was in such a relation to the price of imported cement that the payment of bounties would not lead to a reduction in the price of Indian cement.	The Governor-General-in-Council was satisfied that there was no justification for the intervention of Government and therefore did not propose to take any action on the Report.
Oct. 8, 1924.	*President*: G. Rainy. *Members*: P. P. Ginwala, V. G. Kale.		As a result mainly of a heavy fall in the sterling prices of Continental steel and of the maintenance of exchange in the neighbourhood of 1s. 6d., the Board definitely held that the Steel Industry (Protection) Act had so far failed to achieve its purpose and recommended heavy increases on fabricated articles, which were as follows:	Government accepted the finding of the Board that the protection given by the Act had been insufficient and that in view of the fact that the recent duties had brought in more revenue than was anticipated and also in view of the fact that the imposition of further duties would entail a burden

Date of reference. 1	Personnel. 2	Subject of Enquiry. 3	Recommendations by Tariff Board 4	Action taken by Government. 5
			Class of material. — Duty as per 1924 Act. — Duty proposed. UNFABRICATED IRON & STEEL. Steel bars .. .. .. 40 — 75 Iron bars .. .. .. 35 — 65 Steel structural sections .. .. 30 — 65 Iron structural sections .. .. 20 — 50 Plates .. .. .. 30 — 55 Black sheet .. .. .. 30 — 52 Galvanised sheet .. .. 45 — 78 Tinplate .. .. .. 60 — 104 Rails and fish-plates, medium and heavy .. .. .. 14 — 30 Rails and fish-plates, light .. 40 — 75 FABRICATED IRON AND STEEL MISCELLANEOUS Fabricated structures .. .. 25% *ad valorem.* — 25% *ad valorem.* *plus* Rs. 60 per ton. Coal tubs, etc., and built up tubs .. 25 „ „ — 25% *ad valorem.* *plus* Rs. 47 per ton. Fabricated steel beams, channels, angles, etc. .. .. 25 „ „ — 25% *ad valorem.* *plus* Rs. 54 per ton. Fabricated iron, angles, etc. .. 16 „ „ — 15% *ad valorem.* *plus* Rs. 44 per ton. Fabricated plates .. .. 25 „ „ — 25% *ad valorem.* *plus* Rs. 41 per ton. Fabricated sheets .. .. 15 „ „ — 15% *ad valorem.* *plus* Rs. 40 per ton. Spikes and tie bars .. Rs. 40 per ton — Rs. 75 per ton. Switches and crossings .. .. 25 *ad valorem.* — 25% *ad valorem.* *plus* Rs. 35 per ton. Wire nails .. .. Rs. 60 per ton — Rs. 90 per ton.	on the consumer out of proportion to the benefit derived by the industry, they thought that a bounty of Rs. 20 per ton on 70 per cent. of the total weight of steel ingot subject to a maximum of Rs. 50 lakhs would meet the needs of the case. The bounty was given from 1st October, 1924 to 30th September, 1925. The proposal of Government to grant bounties was warmly approved by the Board.
June 18, 1925.	*President*: G. Rainy. *Members*: J. Matthai.	Steel Industry.	The main recommendations of the Board were as follows:— (1) Payment of a bountry at the rate of Rs. 18 per ton on 70 per cent. of the weight of steel ingots produced in India between 1st October, 1925, and 31st March, 1927, subject to a limit of Rs. 90 lakhs. (2) Grant of rebate to the Tinplate Company of the Customs duty paid by them on tin imported for the manufacture of tinplate. (3) Raising of protective duty on imported tinplate from Rs. 60 to Rs. 89 per ton. (4) Protective duty on fabricated steel other than the kinds specfied under other heads from 25 to 32½ per cent. *ad valorem.* (5) Protective duty on such component parts of steamers, launches and other vessels for harbour and inland navigation as are made of fabricated steel to remain at 25 per cent. *ad valorem.* (6) Imposition of a duty of 40 per cent. *ad valorem* on tipping wagons, coal tubs, and switches and crossings. (7) Amendment of the Steel Industry (Protection) Act to empower the Government of India to sanction the payment of bounties on railway wagons and carriage underframes subject to a maximum limit of Rs. 24 1926-27. (8) Cessation of payment under section 4 of the Steel Industry (Protection) Act of bounties on railway wagons with effect from 1st April, 1926. (9) A public announcement to be made of all bounties sanctioned on wagons and underframes.	A Resolution was adopted in the Legislative Assembly in September which provided: (1) a bounty of Rs. 12 per ton on 70 per cent. of the total weight of ingots made in each month: the total amount for the 6 months ending 31st March, 1926, to be Rs. 18½ lakhs and for the year ending 31st March, 1927, Rs. 41½ lakhs. (2) Bill No. 29 of 1926 amended the Steel Industry (Protection) Act of 1924 and provided for (*a*) bounties to the extent of Rs. 13,60,000 on iron or steel wagons ordered during the financial year commencing on 1st April 1924: (*b*) bounties to the extent of Rs. 19,40,000 on iron or steel wagons and on railway carriage underframes ordered after 31st March, 1925 and before the 1st April, 1937. Resolution adopted in the Legislative Assembly, 17th February, 1926, was to the effect that supplementary assistance should be given to the tinplate industry in India (*a*) by increasing from Rs. 60 to Rs. 85 per ton the specific protective duty on all steel tinplates and tinned sheets including tin taggers and (*b*) by reducing the duty on tin, block, from 15 per cent. *ad valorem* to a specific duty of Rs. 250 a ton.
March 28, 1925.	*President*: G. Rainy. *Members*: P. P. Ginwala, J. Matthai.	SHIPBUILDING INDUSTRY.	The Board recommended that the duty on the fabricated steel parts of ships and other inland vessels should be fixed at 10 per cent. but subject to the proviso that the duty was in no case less than Rs. 35 a ton.	Government accepted this finding of the Tariff Board but postponed legislation in regard to import duty on ships and other vessels for inland and harbour navigation till the results of the Statutory enquiry into iron and steel industry were known. In the meanwhile Government gave exemption to iron and steel in ships and other vessels imported for inland and harbour navigation from so much of the protective duties as was in excess of 10 per cent. *ad valorem* or Rs. 35 per ton whichever was higher. By the Steel Industry (Protection) Act, 1927, this compensation was reduced to Rs. 23 per ton.

Date of reference.	Personnel.	Subject of Enquiry.	Recommendations by Tariff Board	Action taken by Government.
1	2	3	4	5
March 23, 1925.	*President*: G. Rainy. *Member*: J. Matthai.	Removal of import duty on spelter and enhancement of duty on imported galvanized hardware.	No recommendation was made for the imposition of a protective duty on imported galvanized that the revenue duty on imported zinc and spelter of all kinds should be removed.	On 3rd July, 1926 Government issued a resolution that the recommendation for removing import duty on spelter should be considered at the time of the next budget and in connection with further protection for Steel industry in 1927. Government accepted the Board's finding in regard to the non-imposition of a protective duty on imported galvanized iron ware.
June 13, 1925.	*President*: G. Rainy. *Member*: P. P. Ginwala, J. Matthai.	Wire and Wire Nail Industry.	The Board had no proposals to make for the grant of supplementary protection, but thought that the handicap under which the industry suffered should be removed. Therefore they suggested that the Wire Company should be permitted to import wire rod subject only to a duty of 10 per cent. until 31st March, 1927. No case was made out for protecting the manufacture of nails as a separate industry using imported materials. Nor should any special concession be given to Messrs. Halley Brothers in respect of their manufacture of hackles.	Government accepted the findings of the Tariff Board.
Sept. 30, 1925.	*President*: G. Rainy. *Member*: J. Matthai.	Coal Industry.	Majority and Minority Reports—both held that the case for a protective duty on all imported coal was not established. The Minority report, however, was for the imposition of a countervailing duty on South African coal, which the majority did not support.	The Government of India accepted the unanimous finding of the Board that the case for a protective duty on all imported coal had not been established. They also accepted the finding of the majority report that the imposition of a countervailing duty on South African coal was not advisable though justified on facts, reported by the Board.
April 3, 1926.	*President*: P. P. Ginwala, *Members*: J. Matthai. A. E. Mathias.	Steel Industry (Statutory enquiry).	ROLLED STEEL INDUSTRY After reviewing the policy of protection, the Board expressed the view that the payment of bounties should no longer form part of the scheme of protection. As competition in certain products came almost entirely from U. K. and in others from U. K. and the Continent and as it was probable that the future prices would be fairly stable in the former and not in the latter, two scales of duties were proposd (*i*) basic duties fixed with reference to the price of British steel and applicable to all countries and (*ii*) additional duties based on the margin between British and Continental prices and applicable to non-British steel on the ground that they would best serve the interests of the country from all points of view. Anti-dumping duties were considered to be impracticable. By 1933-34, it was felt that the Indian industry should be able to meet British competition without assistance but not the competition from the Continent. The basic duties should remain in force for the whole period of seven years, whereas the additional duties might be altered according to the needs and requirements of the situation. The scheme of protection was not only adequate for the existing industry but also afforded scope for expansion. The scales of duties recommended involved a distinctly smaller amount of protection, but the low level of duties was justifiable only if the Government arranged to purchase the whole of their requirements of rails so far as they could be purchased in India. The Board were strongly of the opinion that power should be taken by the Governor-General-in Council to ensure that proper provision for depreciation was made from time to time. FABRICATED STEEL. The Board considered it essential in the interest of the Indian industry that railway should encourage the use of Indian structural steel by revising the designs for bridges and other structures so as to permit the utilization of the maximum amount of steel manufactured in India. As a result of the recommendations to a certain extent regarding the duties	The Steel Industry (Protection) Act, 1927, was passed extending protection to the industry till 1933-34 and giving power to the Governor-General in Council to increase the duties if protection was rendered ineffective by any change in the price of imported steel. All the Board's recommendations were accepted by Government.

Date of reference.	Personnel.	Subject of Enquiry.	Recommendations by Tariff Board	Action taken by Government
1	2	3	4	5
			required on rolled steel, it was proposed that in place of the 25 per cent. *ad valorem* duty on fabricated steel, the basic duty should be 17 per cent. *ad valorem* and that an additional duty of Rs. 13 per ton should be imposed on fabricated steel imported from elsewhere than the United Kingdom. The duties proposed were as follows:—	

Product.	Basic Duty.	Additional Duty.
	Rs. per ton.	Rs. per ton.
Rails 30 lbs per yd. and over	13	
Fishplates for above. Revenue duty (minimum Rs. 6 per ton)		
Structural sections (including wrought iron)	19	11

Product.	Basic Duty.	Additional Duty.
	Rs. per ton.	Rs. per ton.
Bar and rod (including wrought iron) spikes and tiebars, rails under 30 lbs. per yard and fishplates for same	26	11
Plates	20	16
Ordinary sheets	35	24
Galvanized sheets	38	..
Steel sleepers	10	..
Fabricated steel structure	17% *ad valorem* (minimum Rs. 22 per ton.)	13
Coal tubs and tipping wagons	Ditto.	13

TINPLATE INDUSTRY.

The Board recommended a reduction of the duty from Rs. 85 to Rs. 48 per ton.

They were unable to support the claim that varieties of tinplate not manufactured in India should be exempt from the protective duty. From the economic point of view, discrimination in favour of Wales could not be made since it was with Welsh tinplate that the Indian product had mainly to compete.

The period of protection was fixed at seven years.

AGRICULTURE IMPLEMENTS.

No recommendation was made because the application for protection was withdrawn.

April 3, 1926.	*President*: A. E. Mathias. *Member*: J. Matthai.	Wagon Industry.	WAGONS AND UNDERFRAMES. Under the stimulus of the bounty scheme which had been in force, the Wagon industry had made great progress and was now in a position to meet a large proportion of the normal demand. As a consequence of the reduction in the cost of raw material but largely of the decrease in costs resulting from large orders for a few standard types of wagons, the wagon manufacturers were able to meet foreign competition with the help of revenue duty only. The restriction in the demand for wagons had put the industry in a difficult position. Until demand reached a total of 5,000 in terms of C—2 wagons, all orders should be placed in India by competitive tender from Indian manufacturers. COMPONENT PARTS: FORGINGS, STEEL CASTINGS AND SPRING STEEL, BOLTS AND NUTS. (*i*) *Forgings.* The manufacture of forgings should be regarded at present as merely a process incidental to the construction of wagons and not as a separate industry. When the demand became normal the same duty should be imposed on imported forgings as on wagons and underframes. During the next few years, orders for forgings should continue to be placed in India as far as possible and in	Government accepted the findings of the Board.

Date of reference. 1	Personnel. 2	Subject of Enquiry. 3	Recommendations by Tariff Board 4	Action taken by Government 5
			comparing Indian with foreign prices an allowance of 2½ per cent. above the revenue duty should be made.	
			(ii) *Steel Castings and Spring Steel.*	
			The annual demand for steel castings was efficient to permit an economic output. Therefore the Board considered that a good case had been made out.	
			The best and most economical method of extending help to the industry being by means of a bounty, the Board recommended the payment of a bounty of Rs. 2-8-0 per cwt. to the Hukumchand Electric Steel Works on all steel castings for railway wagons, underframes and locomotives, subject to a maximum of Rs. 1,80,000 during the period October 1st, 1927, to September 30th, 1930, no restriction being placed upon the amount to be paid in any one year.	
			The Board had no recommendations to make in respect of spring steel.	
			(iii) *Bolts and Nuts.*	
			The Board recommended a specific duty of Rs. 2 per cwt. on all bolts and nuts falling under Article 61 of the Statutory Tariff Schedule.	
			WIRE AND WIRE NAIL.	
			As wire rod for the manufacture of wire and wire nails would not be produced for another three years, the industry failed to qualify for protection. Therefore, the protective duty on wire and wire nails should be discontinued.	
Oct. 2,	*President*: P. P. Ginwala. *Members*: A. E. Mathias. J. Matthai.	Match Industry.	Tariff Board recommended the continuance of the duty of Rs. 1-8-0 per gross without limit to the period of duration and that the duty should be made protective. The conditions laid down by the Fiscal Commission were fulfilled.	Government of India accepted the findings of the Board that the Match Industry fulfilled the conditions laid down by the Fiscal Commission. Government agreed with the recommendation of the Tariff Board and imposed by the Match Industry (Protection) Act, 1928, a protective duty of Rs. 1-8-0 per gross on imported matches without any time limit. Government also accepted the finding that in the circumstances no action was called for against the Swedish Match Company on the ground of unfair competition. Government noted the Board's recommendation that, should developments indicate that the Company was acquiring undue control to the detriment of Indian industry, they should take steps to safeguard the industry.
May 26, 1927.	*President*: P. P. Ginwala. *Member*: J. Matthai.	Plywood and Tea Chest Industry.	The findings and proposals of the Board were as follows:—	Government accepted the findings of the Board, but they were unable to approve that protection should be given by an export duty. They decided to impose a duty of 3% on all forms of plywood and on the battens and corner pieces of plywood chests, and abolish the drawback.
			All the raw materials for the manufacture of plywood and of tea chests were available in India. The other conditions of the Fiscal Commission were also satisfied. It did not however appear that the manufacture of plywood products other than tea chests required any assistance.	
			Owing to severe competition from imported tea chests, there was a danger of the local factories being forced to suspend manufacture unless assistance was given.	
			The measure of protection considered necessary was 9 annas 10.6 pies which would be subject to slight further adjustment.	
			The present import duty on all plywood articles other than tea chests and rubber boxes should remain unchanged.	
			The duty on fittings of tea chests and rubber boxes and the linings of tea chests should remain unchanged.	
			The import duty on plywood panels and battens of tea chests should be abolished.	
			A specific export duty of 6 annas 6 pies per 100 lbs. of tea exported in foreign chests should be imposed.	
			Of this sum 4½ annas per 100 lbs. of tea might be made over to the Indian Cess Committee and the Cess leviable be reduced by 3 annas per 100 lbs. of tea. The period of protection should be fixed at 5 years.	

Date of reference. 1	Personnel. 2	Subject of Enquiry. 3	Recommendations by Tariff Board 4	Action taken by Government. 5
March 26, 1928.	*President*: P. P. Ginwala. *Members*: J. Matthai.	Oil Industry.	Both the majority and minority reports held that no case for the protection of oil industry was established, and therefore no action was called for.	Government of India agreed with the Board that no action need be taken for the time being.
March 28, 1925.	*President*: *Member*: J. Matthai.	Manufacture of electric wires and cables.	The tariff proposals of the Board were that the duty on electrolytic copper rod known as "black rod" be removed and that a duty of 5 per cent. be imposed on rubber insulated electrical wires and cables other than those specified in Article 90A.	Government accepted only the proposal regarding the duty on rubber insulated wires and cables.
			COTTON BELTING.	
Do.	*President*: A. E. Mathias, *Member*: J. Matthai,	Tariff equality in respect of the manufacture of camel hair, cotton and canvas ply belting.	The 15 per cent. *ad valorem* duty on imported black proofing should be abolished and a duty of 5 per cent. *ad valorem* should be imposed on imported cotton belting.	Government did not accept the Board's proposal to remove the duty on black proofing, but they agreed that the duty on cotton, camel hair and canvas ply belting should be increased. They also decided that the duty on imported camel hair yarn should be reduced from 15 per cent. to 5 per cent.
			HAIR BELTING.	
			The 15 per cent. *ad valorem* duty on imported black proofing should be abolished and the duty on imported camel hair yarn should be reduced from 15 per cent. to 6 per cent. *ad valorem* and a duty of 5 per cent. *ad valorem* should be imposed on imported hair belting.	
			CANVAS PLY BELTING.	
			A duty of 5 per cent. *ad valorem should* be imposed on imported ply belting.	Government accepted the proposal and made the necessary alterations in the Act.
Do.	*President*: A. E. Mathias. *Member*: J. Matthai.	Tariff equality in respect of the manufacture of printing type.	The Board recommended that a specific duty of one anna per doz. should be levied on printing type in place of the existing duty of 2½% *ad valorem*.	
March 28, 1925.	*President*: P. P. Ginwala. *Member*: J. Matthai.	Tariff equality in respect of the manufacture of Manila Rope.	On grounds of principle as well as of administrative convenience, the Board thought that there was a good case for removing the duty on Manila hemp.	On 8th June, 1929, Government issued a resolution accepting the principle but proposed to give effect to it when financial conditions permitted. In July 1930, a duty of 15% on a Tariff Valuation of Rs. 30 per cwt. on raw hemp was imposed.
May 19, 1927.	*President*: A. E. Mathias. *Member*: J. Matthai.	Changes in the Tariff entries regarding printing paper.	The Board's view was that the percentage of mechanical wood pulp should be calculated on the fibre content of the paper Newsprint and not on the total weight.	Government adopted the Board's view.
Dec. 1, 1930.	Do.	Steel rails.	The Board considered that a price of Rs. 130 per ton of 90 lb. rails was not too high and that an addition of Rs. 7 should be made to the price of Rs. 130 for 115 lb. rails.	Government accepted the recommendations about 90 lb. rails and as regards 115 lb. rails an addition of Rs. 10 over and above the price of 90 lb. rails.
May 15, 1930.	Do.	Tariff equality and protection for railway materials of 8 in number.	The recommendations were that a specific duty of Rs. 2-4-0 should be levied on fishbolts and nuts, ordinary bolts and nuts and dogspikes and a duty of Rs. 2 on rivets and gibs, cotters and keys per cwt. As regards chrome steel switches and crossings and stretcher bars, the exemption provided for in the Statutory Schedule should be removed and they should be made liable to the protective duty. But in regard to bearing plates, no action was called for.	Government accepted the recommendations.
Sept. 30, 1925.	*President*: A. E. Mathias. *Member*: J. Matthai.	Additional protection for galvanized.	It was the opinion of the Board that the Tata Company had made genuine effort to secure the results which were considered feasible. Lack of progress was due to causes beyond the control of the Company, *viz.*, strike and fall in rail orders on which hinged the scheme of protection. Thus the whole balance of the scheme was destroyed and it was of the utmost importance to find a fresh outlet for the ingot steel. From that point of view the maintenance of or even an increase in the output of galvanized sheets became a pressing necessity and the Board recommended that the industry should be assisted by the imposition of an additional duty of Rs. 37 per ton under section 2 (1) of the Steel Industry (Protection) Act III of 1927 for the remainder of the protective period.	Government accepted the Board's finding and in January 1931, the Assembly passed a resolution recommending the continuance of the duties mentioned in Government resolution up to 31st March, 1930.
March 28, 1925.	*President*: P. P. Ginwala. *Members*: A. E. Mathias. J. Matthai.	Removal of the revenue duty on pig iron.	The Board's conclusion was that no case had been made but upon which they could base any recommendations for the removal of the revenue duty on pig iron. In their opinion, no serious harm would be done to any consumer if the duty was retained until the statutory enquiry in 1933-34.	In their resolution dated 13th June, 1930, Government accepted the Board's finding.

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June 10. 1926.	*President:* F. Noyce. Rai Bahadur Harikissen Kaul, N. S. Subba Rao.	Cotton Textile Industry.	The main conclusions of both the majority and the minority reports were as follows:— The most striking feature in the history of the industry from 1899 to 1922 was the expansion in every direction, especially in weaving. Other important features to be noted are the loss of the export trade to Japan, decreasing dominance of Bombay and increasing share of Japan in the import trade. The depression was felt more in Bombay than elsewhere and therefore the dmand for protection was more insistent in that centre. The altered relation between agrarian and general prices since 1920 contributed greatly to the depression. The course of American prices was also equally a contributory factor. The competition of Japanese yarn affected adversely the prices of Indian yarn. In cloths of lower counts, on the other hand, the Indian mills were able to hold their own. The same thing could not be said of cloths of counts of 30s. and above. The depreciation of the Japanese exchange stimulated exports from Japan to Indian and double-shift working gave the Japanese industry an advantage of 4 per cent. Conditions of labour in Japan were inferior to those in India ; and, therefore, it was held there was unfair competition between Japan and India. The stabilisation of the rupee at 1s. 6d. at this time rendered the problem presented by the disparity between prices and wages more pronounced. Over-capitalisation accentuated the depression. Difficulties of finance were not a negligible factor. Bombay was under substantial disadvantages as compared with other centres in regard to cost of fuel, power, water, labour, etc., but these appeared to be rather more than off-set by advantages in regard to cost of stores, insurance, office expenses, etc. It was impossible to express a definite opinion as to how far foreign competition was a permanent cause of the depression. Mills with only spinning departments were hit by the prevailing depression more than others. The Board as a whole made many recommendations for improvement in organisation, management and control. The most important unanimous recommendation was that Government should contribute towards the establishment of a combined bleaching, dyeing and printing works in Bombay. In the opinion of the majority though no justification existed for a differential duty against Japan on the ground of depreciated exchange, a moderate amount of protection both for yarn and cloth was necessitated by the labour conditions in Japan. Any additional duty on yarn was undesirable from the point of view of the handloom industry. The fact of unfair competition from Japan having been established, the best way of granting protection to the industry was by the imposition of an additional duty of 4% on all cotton manufactures. The question of a differential duty against Japan was considered undesirable. There was no justification for an export duty on cotton. The concession of free entry enjoyed by cotton mill machinery and mill stores prior to 1921 should again be granted. A stimulus to the production of goods of higher quality should be provided in the form of a bounty on the spinning of higher counts, 32s. and over, to the extent of 15 per cent. of the total working spindleage in a mill in British India.	On 7th June, 1927, the Government of India issued a Resolution disagreeing with the recommendation of both the majority and the minority reports about the additional duty. They also rejected the proposal for a bounty on the spinning of finer counts 32s. and higher. And they said they were unable to express any opinion until they had ascertained the views of the local Government and of the Cotton Mill Industry in Bombay on the proposed establishment of combined bleaching, dyeing and printing works. The removal of the import duty on machinery and raw materials of industry having been in accord with the policy of Government, they agreed with the recommendation of the Board that the import duty on cotton textile machinery and mill stores should be remitted for a period of three years. The publication of the above resolution led to strong protests and deputations to the Viceroy and the Government modified their decision. The result was the Indian Tariff (Cotton Yarn Amendment) Act, 1927, under which a duty of 5% *ad valorem* or 1½ annas a pound, whichever was higher, was levied on all imported cotton yarn. The industry continued to decline and as a result of Mr. G. S. Hardy's report and Conference with Millowners the Cotton Textile Industry (Protection) Act, 1930, was passed, under which protective duties on a differential basis were imposed on cotton piecegoods for a period of three years.

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			The appointment of Trade Commissioners in Basra and Mombasa was pressed. Before the appointment of a Trade Commissioner, a commercial mission should make a survey of the potentialities of export markets. No case had been made out for a special treatment of the hosiery industry. While agreeing with most of the recommendations of the majority, the President (Mr. Noyce) was of the opinion that there should be no bounty on the spinning of higher counts. He also was of the opinion that the fact of unfair competition having been proved against Japan, the additional duty of 4 per cent. which was what was required in the shape of protection should be imposed only on cotton piecegoods coming from Japan.	
July, 25, 1932.	*President:* Dr. J. Matthai. *Members:* F. I. Rahimtoola, G. T. Boag.		The Board recommended that Government should immediately examine the possibility of using their powers under Section 3 (2) of the Tariff Act in the case of piecegoods imported from a country with a depreciated exchange to raise the value of the goods for Customs purposes in such proportion as to secure the continuance of the protection intended for the Indian Industry. If this was not accepted, then the necessary additional assistance should be provided by raising the *ad valorem* duty on all cotton piecegoods of non-British origin from 31¼ per cent. to 50 per cent. in view of the Indo-Japanese Trade Convention in existence. No proposal was made regarding the specific duty on plain grey goods because it was thought that Section 3 (5) of the Tariff Act restricted the power of the Governor-General.	Government accepted the Board's recommendation in respect of the *ad valorem* duty on cotton piecegoods not of British manufacture. As regards the specific duty, Government decided that the Governor-General-in-Council had power to alter the duty and raised accordingly the duty from 3½ annas to 5¼ annas per lb.
April 9, 1932.	*President:* J. Matthai. *Members:* F. I. Rahimtoola, G. T. Boag.	Cotton Industry.	The Tariff Board found an increase in the number of mills at work in India as also in the production of both yarn and piecegoods. The decline in the imports of yarn and piecegoods of all description was also noticeable. There was a serious falling off in the export trade in coloured goods since 1926-27. The claim to substantive protection of an industry must be judged both by the conditions laid down by the Fiscal Commission and by the national importance of the industry. India had a virtual monopoly of short staple cotton and also produced enough long staple cotton to meet the country's requirements. Majority of mills in India would find it impossible, without protection, to realise any return on capital or to find adequate sums for depreciation and in many cases even to meet the whole of their out-of-pocket expenses. Continued depression of the industry in Bombay was bound to deprss prices throughout the country. The introduction of protective duties on piecegoods in 1930 prevented a greater fall in their prices than the fall in the prices of raw cotton. The reduction of purchasing power diverted the demand from high-priced to low-priced goods. The withdrawal of protection would cause a serious set back to the industry. The only practicable method of fixing the measure of protection was to base it on the difference between th fair-selling price and the price actually realised by the Indian mill. Effective protection could only be given by specific duties. Any system of specific duties should be based on as broad a classification as possible. It would be unnecessary to have more classes than four, (1) plain grey, (2) bordered grey, (3) bleached, (4) printed, dyed and coloured woven with duties of 5 annas, 5 annas 3 pies, 6 annas and 6 annas 4 pies per lb.,	On February 10, 1934, a Bill for amending the Cotton Textile Industry (Protection) Act, 1930, was introduced. The Government of India agreed with the Board's conclusion that the Cotton Textile Industry had established a claim to substantive protection ; but they found it necessary to review the measures of protection in the light of events subsequent to the submission of the report by the Board. The denunciation of the Indo-Japanese Trade Convention and the subsequent conclusion of a new trade agreement with Japan together with the unofficial agreement between representatives of the Indian and United Kingdom Textile Industry had introduced entirely new factors into the situation. The Bill was intended to give statutory effect to the aforementioned agreements. Opportunity was also taken by Government to incorporate into the Bill their decisions on the recommendations of the Board on the Sericultural industry.

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			respectively, or the *ad valorem* rate of revenue duty whichever was higher. The *ad valorem* duty was intended to protect the revenue of Government. The specific duties proposed would be applicable to cotton goods of British and non-British manufacture. A reduction of the specific duty on yarn to one anna a pound and its restriction to counts 50s. and below was recommended. The claim to protection of subsidiary industries such as hosiery industry and braid-making industry was analogous with that of the engineering and other industries whose raw material is rolled steel. The Board recommended that protection be given by (1) a specific duty of Re. 1-8-0 a dozen on underwear including knitted garments of all descriptions and underwear made from woven fabrics; (2) by a specific duty of 3 annas a dozen pairs of socks and stockings; (3) by a specific duty of 6 annas a pound on knitted fabrics in the piece and (4) by a specific duty of 6½ annas a pound on braids known as "Ghoonsis" or "Muktakesis." Piecegoods made entirely or in part of artificial silk should be subject to a specific duty of Re. 1-8-0 a lb. But if the proportion of artificial silk in the mixture did not exceed 15 per cent. of the total weight, the goods should be assessed as coloured cotton piecegoods or woolen manufactures. A duty of 15 per cent. should be imposed on all imported starch. It was considered desirable that the Merchandise Marks Act should be amended without delay so as to penalise dishonest practices. Legislation was desirable in order to define the extent and nature of the control and supervision to be exercised by the directors and shareholders over managing agents. A Committee should be appointed to report on the manner in which the Company Law should be amended.	
Dec. 3, 1932.	*President*: F. I. Rahimtoola. *Members*: G. T. Boag. H. R. Batheja.	Sericultural Industry.	The Board recommended an *ad valorem* duty of 80 per cent on silk goods and 60 per cent on silk mixture. They also recommended that all silk yarns including thrown silk and spun silk be liable to the duty recommended for raw silk, and that a specific duty of Re. 1 a pound be levied on artificial silk yarn.	Government action was embodied in the Textile Industry (Protection) Act, 1934.
May 20, 1930.	*President*: A. E. Mathias. *Members*: J. Matthai. F. I. Rahimtoola.	Sugar Industry.	The Board was satisfied that the three conditions laid down by the Fiscal Commission were fulfilled by the Sugar Industry and that a case for protection had been established. The agricultural aspect of the case for protection was the most important. In the national interests, the area under sugarcane should not diminish and a fresh outlet should be provided for cane by encouraging the expansion of the white sugar industry. Unless steps were taken to develop the white sugar industry, the Board was of opinion a disastrous slump in the gur market was probable which would seriously affect the agricultural classes, disorganise the agricultural system and involve the abandonment of better cane cultivation in large areas. The khandsari system of sugar manufacture was of great importance in the Rohilkhand tract. Both from the point of view of outlet for cane and from the point of view of the position of cultivators in Rohilkhand, the continuance of this branch of industry must be secured. The area under cane in India over a series of years had remained very steady. The main product of sugarcane in India was gur, of which between 2½ and 3 million tons were consumed annually. There were as many as 29 factories capable of manufacturing white sugar	The Government of India accepted the recommendation of the Board that a single rate of duty should apply to all classes of sugar. As the period of 15 years was considered to be unduly long, it was decided to propose that a protective duty of Rs. 7-4-0 per cwt. be imposed on all classes of sugar until 31st of March, 1938, and that provision be made in the statute for a further enquiry before the end of that period. The Government did not propose to accept the Board's recommendation that power should be taken to impose an additional duty in the event of the price of imported sugar falling below a certain level. The Board's recommendation regarding the duty on molasses was accepted. A resolution embodying the above decisions of Government was issued on 30th January, 1932, and the Sugar Industry (Protection) Act received the assent of the Governor-General on 8th April, 1932.

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			direct from cane and there were also 14 refineries which manufactured white sugar mainly from gur. There was a remarkable increase in the efficiency of extraction of Indian factories since 1920. Much progress was made in the last ten years at the Sugar Research Station at Coimbatore and a number of varieties had been evolvd which were particularly suitable for Northern India. Steps should be taken to reduce the cost of production of gur particularly in Bombay and Madras by the improvement of methods of cultivation and by the introduction of improved varieties of cane after investigation at the Research Station at Coimbatore. Sugarcane was the only important agricultural product, the price of which was not determined by world conditions and Government had it in their power at this time of severe agricultural depression to afford substantial assistance to the agricultural classes by protecting the sugar industry. Any scheme of bounties was on administrative grounds impracticable. The Board therefore proposed that assistance should be by way of duty. In order to enable the industry to face initial difficulties and to safeguard the position of the manufacturer of indigenous sugar by the bel method, the Board recommended that for the first seven years the duty should be fixed at Rs. 7-4-0 per cwt. and that for the next eight years at Rs. 6-4-0 per cwt., the period of protection being for 15 years. The Board also proposed that a single rate of duty should be applied to all classes of sugar including sugarcandy. They had no recommendation to make regarding the application of Messrs. Carew & Co., for the removal of tariff inequality on methylated spirit. Protection was unlikely to affect seriously the industries using sugar. Increased sums should be allotted to development and research work since without such measures the whole purpose of the protective scheme was likely to be delayed, if not defeated. They recommended a grant of not less than Rs. 10 lakhs annually to the Imperial Council of Agricultural Research. The Tariff Board considered the scale for cane payment recommended by the Indian Sugar Committee, *viz.*, a sliding scale based on price for cane equal to half the price of sugar subject to a minimum of 6 annas per maund as generally suitable, but they thought that it should be increased by one anna per maund in the first years of protection. Tariff Board held that it would be necessary to increase the duty from Re. 1-4-0 to Re. 1-6-0 per maund to bring the import price of Rs. 53 to the level of the fair selling price of Rs. 66 for the Indian industry. This would involve an additional burden of nearly Rs. 20 lakhs on the Bengal consumer. Considering the limited extent to which the national interests would be served by the establishment of salt industry at Okha or Karachi, to expect the Bengal consumer to shoulder a burden of this magnitude would be entirely unreasonable, but a different conclusion might be reached if there was a reasonable prospect of securing stability of price. On economic grounds the case for the imposition of a protective duty could not be sustained. Nor could the proposal for any remission of the excise duty be justified. Maintenance of quality could not be guaranteed either by the imposition of duty or by the grant of bounty. Their conclusion was that it was not in the national interest to encourage the production of Indian seaborne salt at	
July 25, 1929.	*President*: Sir P. P. Ginwala up to 26-3-30. A. E. Mathias from 27th March, 1930. *Members*: A. E. Mathias up to 26-3-30. Dr. J. Matthai.	Salt Industry.		The Government of India accepted the finding of the Board and appointed a Salt Survey Committee. After considering that report the Salt (Additional Import Duty) Act, 1931 was passed and it received the assent of the Governor-General on 5th April 1931. An additional duty of 4 annas 6 pies per maund was imposed under that Act on all salt imported into British India but produced outside India.

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			anything more than a price of Rs. 66 per 100 maunds and the only method of encouragement which could be recommended was stabilization of prices over long period by some form of organized control. The Board held that India could be made self-supporting in respect of salt. Khewra and Sambher provided sources of supply of white crushed salt for the Bengal market. Therefore, they recommended that a detailed survey should be made of these possible sources. As in the case of seaborne salt, so in the case of rail-borne salt, they thought, if the manufacture of white crushed salt was to be encouraged in India, the only ultimate solution was the introduction of some form of organised control. The advantages of such a control were many. In the first place the Indian manufacturer would get a reasonable price which would also be fair to the consumer. In the second place, exploitation by combines of foreign manufacturers could be stopped. In the third place, Government would have an additional source of supply to make good shortages in Upper India. The control must ultimately be in the hands of a Marketing Board constituted on the lines of a public utility company. But Government should at once assume control of imported salt in the interests of the industry as well as the consumer and standardise the qualities of common crushed and super fine salt.	
July 16, 1928.	*President*: Sir P. P. Ginwala. *Members*: A. E. Mathias, J. Matthai.	Heavy Chemical Industry.	The Tariff Board took the sulphuric (Chamber) acid as the basis of the whole group of chemicals considered in their report. The heavy sea freight on acids afforded a high natural protection to the manufacture of sulphuric, hydrochloric and nitric acids locally, but as there was no freight advantage in respect of salts, their manufacture in competition with other highly developed countries was difficult. The market in the country was sufficiently big to warrant production on an economic scale. The Machinery required was simple and easily handled by Indian labour. In respect of raw materials, though India possessed several of those required, sulphur which was the most important raw material was lacking, but its absence was not considered a bar to the grant of protection. The chemical industry was a key industry and one of national importance and therefore the Board considered that the industry should be protected. At the moment, the production being on a small scale, the costs were high and could not be accepted as a suitable basis for protection. The industry should reorganise itself and attain bigger production so as to bring down the cost of production. The protection required should be given in the form of specific duties which represented substantially the present level of revenue duties. The inter-connection of the various duties suggested was emphasised. No limit was fixed to the period of protection, but another enquiry should be made after 7 years. Realising the close connection between the chemical industry and the manufacture of artificial fertilisers, the Board held that the manufacture of superphosphate was a suitable industry for the grant of protection, which should take the form of a bounty. On a careful examination of the question the Board found that a policy of reduction of railway freights with a view to facilitate the formation of a combine interests but also in the interests of railways themselves. The Board recommended the imposition of a specific duty of 7 annas a cwt. for 7 years.	In a resolution issued on 5th September, 1931, the Government of India proposed to give effect to the protective duties recommended by the Board for the period up to 31st March, 1933. They did not agree with the Board in the matter of railway rating policy. They also thought that the question of assisting an industry not yet in existence by means of a bounty required further consideration. In the same resolution the Government of India said that they were prepared to discuss with representatives of the Chemical industry the question of Again in a resolution issued on the 1st April, 1933, summarising the position of the industry, the Government of India said that there was no indication of any intention on the part of chemical manufacturers to work for more economic production by a combination of interests; that the great majority of opinions were unfavourable to any scheme of State assistance for the manufacture of superphosphate and that there was no chance at any time of the superphosphate industry, if started, being able to stand competition from other countries unassisted. The Government of India, therefore, finally decided the Legislature for the continuance of protection of the Heavy Chemical Industry. The protective duty on magnesium chloride, however, would remain unaffected till March, 1939.
July 16, 1928.	*President*: Sir P. P. Ginwala. *Members*: A. E. Mathias. J. Matthai.	Magnesium Chloride Industry.	The Board recommended the imposition of a specific duty of 7 annas a cwt. for 7 years.	The Government of India accepted the recommendation and imposed the duty in 1931.

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March, 26, 1931.	*President*: J. Matthai. *Members*: F. I. Rahimtoola. G. T. Boag.	Paper and Paper-Pulp Industry.	The main recommendations made by the Board were as follows: (1) Protection to the bamboo paper and pulp industry should be continued by means of a duty. (2) The duty on imported paper should be imposed at the same rate and on the same articles as at present. (3) A duty should be imposed on imported wood pulp at the rate of Rs. 45 per ton. (4) The protective duties on paper and pulp should remain in force for a period of seven years from the 1st April, 1932. (5) A conference should be held with representatives of the different intrests to decide the proper definition of the classes of paper to be subject to the protective duty. (6) Compliance by the paper-making companies with the principles stated in para. 292 of the Fiscal Commission's report should be made a condition precedent to the grant of concessions for the exploitation of forests and to purchases of paper by Government. (7) The Paper Pulp Section of the Forest Research Institute should be developed and should undertake co-ordination of experimental work on bamboo.	Government accepted the proposals of the Board regarding the duties to be imposed on various kinds of paper and also on pulp. The period of protection fixed by the Board was also approved. The Conference proposal made by the Board for the definition of articles chargeable with protective duty did not receive the assent of Government. The conditions laid down in paragraph 292 of the Fiscal Commission's report would, it was explained by Government, apply only to new companies and not to companies already in existence at the time of the consideration of the question of granting assistance. The Bamboo Paper Industry (Protection) Act was passed in 1932.
May 15, 1930.	*President*: A. E. Mathias, *Members*: J. Matthai,	Gold Thread Industry.	The Board considered that a case had been made out for the protection of the gold thread industry and recommended that the duty should be fixed at 59 per cent. *ad valorem* applying alike to real gold thread, lametta, manufacturers from silver wire such as spirals, spangles, etc., and all colourable imitations. They also recommended the period of protection to be fixed at 10 years.	The Government accepted the findings of the Board and the Gold Thread Industry (Protection) Act came into force in 1931. The duty applicable to the various articles mentioned by the Board was 62½ per cent. *ad valorem*.
May 7, 1931.	*President*: J. Matthai. *Members*: F. I. Rahimtoola. G. T. Boag.	Wire and Wire Nail Industry.	The Board recommended a specific duty of Rs. 45 per ton on wire as well as wire nails. They also considered that the existing arrangements for exempting wire rod from duty should be continued.	Government accepted the findings of the Tariff Board and imposed a duty of Rs. 45 per ton by the Wire and Wire Nail Industry (Protection) Act, 1932.
May 11, 1931.	Do.	Electric wires and cables industry.	The Board found that the industry did not satisfy the conditions laid down by the Fiscal Commission and, therefore, had no recommendations to make, regarding the application for protection submitted by the Indian Cable Company.	Government accepted the finding of the Board.
Aug. 26, 1933.	*President*: J. Matthai. *Members*: G. Wiles. G. A. Natesan.	Steel Industry.	The main conclusion of the Board was that the 1926 Scheme of protection had proved successful and that the expected reduction in past had been effected and that the stage has arrived when "on all articles sold by the Steel Company in competition with Britain imports either more protection duty is required at all, or if any one required the rates are lowered than the normal rates of revenue duty." The Board also added that, if continental steel products were sold at fair prices the Indian industry could well stand the competition and that the duties on Continental goods which were needed were more in the nature of anti-dumping than protecting duties. The Board recommended a duty of Rs. 43 per ton on the imports of untested structurals from the continent; Rs. 10 per ton on British bars (tested); Rs. 39 per ton on continental untested bars; Rs. 25 per ton on untested plates from the continent. On rails, fish plates, structurals and tested plates from United Kingdom, the Board recommended no duties. On Blacksheets (tested) from U. K. the Board recommended Rs. 11 per ton and Rs. 32 per ton on untested Blacksheets from the Continent. Galvanised sheets were recommended for an import duty of Rs. 10 per ton	The Government of India accepted the conclusion of the Tariff Board but preferred equalising duties to the removal of the revenue duties on the imports.

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			irrespective of the country of origin. On imports of fabricated steel from countries other than Great Britain, a duty of Rs. 40 per ton was recommended. As regards tin plates, the Board favoured a duty of Rs. 38 per ton on the British product and Rs. 57 per ton on the continental. On imports of wire nails Rs. 25 on the British goods and Rs. 60 on the foreign. A duty of Rs. 57-8 per ton is recommended on imports of cast iron pipes from foreign countries, duty free.	
May 11, 1931.	*President:* J. Matthai. *Members:* F. I. Rahimtoola. G. T. Boag.	Glass Industry.	The more important part of the Tariff Board Report is the recommendation that even the revenue duties on rails and tested structurals and plates should be removed or in the alternative counterveiling excise duties should be levied on internal production. (i) Sheet and Plate glass including figured and ribbed glass—Rs. 4 per 100 sq. ft. or 25 per cent. *ad valorem* whichever is higher. (ii) Bangles, beads and false pearls —50 per cent. *ad valorem*. (iii) Glass and glassware of the kinds specified below—50 per cent. *ad valorem*. (*a*) Containers other than those containing merchandise packed according to ordinary trade usage—bottles and phials of all descriptions including soda and other aerated water bottles ; jars of all kinds including stopped jars. (*b*) Illuminating ware—Chimneys ; globes; shades; chandeliers; domes; lamps wholly or partly made of glass. (*c*) Table and domestic ware—Tumblers and jugs ; dishes ; bowls ; plates, decanters ; stands ; vases ; wine glasses ; ink stands ; paper weights ; ash trays ; pepper, salt and vinegar bottles. (*d*) Miscellaneous Tables roofing and floor.	The report submitted in 1932 was released for publication only in 1934. The Government rejected the recommendations of the Board and have only allowed a rebate of duty on important soda-ash used by the glass industry if the same is imported by a British country.
			Carbon Brushes The Board concluded that as carbon blocks are subject to a duty of 25% *ad .valorem*, carbon brushes are *charged* only at the rate of 10%. Tariff inequality exists and that the duty should be reduced to 19% in order to remove such inequality. The Board recommended an even lower rate of 15% to make up for other handicap.	The Government accepted the conclusion of the Board and proposed to effect a reduction in duty by notification under section 23 of Sea Customs Act after discussion in the Assembly.
			Healds and Reeds The Board concluded that Tariff inequality exists also in the case of Healds and Reeds and recomended that the duty on healds and reeds should be raised from 10% to 15%.	The Government of India declined to accept the conclusions of the Board on the ground that the use of imported yarn for the manufacturing of healds and reeds can make up for the higher cost of other raw material.
May 25, 1935.	F. I. Rahimtoola. H. R. Batheja.	Classification of paper.	Hard-sized duplicator, hard-sized white and Buff or Badami mechanical paper, suitable for writing, to be classed as Writings. Cover paper, whether white or coloured, in any furnish ; Machine Glazed Pressings, and Machine Glazed Wrappings (suitable for use as Cover paper), substance above 85.2 grammes per square metre ; Cartridge Paper, whether white or coloured, substance below 85.2 grammes per square metre ; Soft-sized Duplicator paper ; Soft-sized White and Buff or Badami Mechanical paper above 26.6 grammes per square metre, to be treated as Printing papers. Envelopes made of writing paper to be assessed under Item 44 (3) (a) of the Tariff Schedule.	The Government of India accepted the recommendation of the Board in general, but considered that such of them as required to be given effect to by legislation, viz., the recommendations in respect of envelopes and coated papers, were not so important as to justify the introduction of a bill specially for that purpose. Government, therfore, have proposed to place proposals to implement them before the Legislature. Regarding other recommendations of the Board, executive instructions have been issued to the Customs Department. Government also decided to hold a departmental enquiry as to whether the continuance of the surcharge on the Paper Protective duties is any longer justifiable.
June 25, 1936.	*President:* Sir Alexander Murray. *Members:* Mr. F. I. Rahimtoola. Dewan Bahadur A. Ramasami Mudaliar.	Cotton Textile Tariff. To review and recommend the level of the duties necessary to afford adequate protection to the Indian cotton textile industry against imports for the U.K.	The report recommended the reduction of the duty on grey goods from 25 per cent. to 20 per cent. *ad valorem* and the duty on bordered grey bleached and coloured goods to 20 per cent. The duty on yarn was reduced similarly to 5 per cent. *ad valorem*.	Given effect to immediately by a notification under Sec. 4 of the Indian Tariff Act.

Date of reference. 1	Personnel. 2	Subject of Enquiry. 3	Recommendations by Tariff Board. 4	Action taken by Government. 5
March 1937.	*President:* Sir G. T. H. Bracken. *Members:* Mr. F. I. Rahimtoola and Dr. L. C. Jain.	Sugar Protection.	To report upon the renewal of the protective duties to lapse in 1938.	The Tariff Board's report was published in 1939. The report favoured the stabilization of the import duty at Rs. 9-4 per cwt. The Government of India decided that a further inquiry should be instituted after two years and reduced the import duty by As. 8 per cwt. having regard to the threatened shortage of domestic supplies.
October 1937	*President:* Sir G. T. H. Bracken. *Member:* F. I. Rahimtoola.	Import Duties on Paper.	The interim report recommended the abolition of the surcharges on the import duties and the revision of the duties on newsprint and mechanical pulp. Final Report to be submitted later.	The Tariff Board reported in favour of the continuance of protection for a further term of 7 years, with the import duty at 11 pies per lb. instead of 15 pies per lb. inclusive of the surcharge. The reduction of the duty was accepted by the Government but the Legislative Assembly pronounced in favour of a longer term, the duty being fixed at 10 pies per lb. The import duty on mechanical pulp has been retained though not at the rate of Rs. 35 per ton or 25 per cent. *ad valorem* as desired by the Tariff Board.
June 1938.	*President:* N. J. Roughton. *Members:* F. I. Rahimtoola and N. N. Anklesaria.	Sericultural Industry.	Inquiry concluded. Report issued in 1940. Renewal of protection recommended by two members.	Action on the Report postponed. Temporary renewal of duties provided for by notification.
Dec. 1937.	Sir Geoffrey Bracken. *Member:* F. I. Rahimtoolah.	Magnesium Chloride Industry.	The Tariff Board's report recommended the grant of protection for a further term, but the duty was to be reduced to 15 annas per cwt. instead of Re. 1-5-0 as before. Provision to be made for the imposition of an additional duty should the c.i.f. price of imported magnesium chloride fall below Re. 1-8-0 per cwt.	Renewal of Protection after lapse of duty in March, 1939.

STATISTICAL TABLES

TRADE

Summary Table showing the value of Imports and Exports of Foreign Merchandise, of Exports of Indian Merchandise, and of Total Exports for each month in the two previous years and for the completed months of the years 1939-42.

	Imports			Exports, Foreign Merchandise		
	1939-40	1940-41	1941-42	1939-40	1940-41	1941-42
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
April	13,43,31,332	17,32,90,926	16,96,39,492	67,77,737	81,27,757	68,89,059
May	14,62,67,647	16,50,32,850	17,79,49,098	88,30,803	60,98,727	1,31,83,728
June	14,91,19,195	11,24,78,760	17,60,46,504	64,61,305	74,82,788	75,42,157
July	13,65,65,571	11,39,66,116	18,41,64,791	80,52,044	67,81,963	1,19,63,318
August	13,89,24,615	10,11,86,493	14,28,42,000	49,39,435	41,26,420	1,38,61,277
September	11,28,90,197	12,76,25,397	15,75,29,651	32,49,069	83,63,581	2,17,48,979
October	10,32,86,796	12,79,74,438	17,05,93,276	59,44,282	95,53,102	1,86,84,753
November	12,51,07,977	12,78,20,478	13,48,43,301	1,11,23,470	1,22,16,632	1,32,02,660
December	13,64,69,481	11,32,89,359	10,95,20,888	1,17,32,902	1,15,69,795	1,23,84,112
January	16,42,87,365	14,76,99,916	11,55,32,661	1,16,45,581	1,73,33,218	1,17,65,415
February	15,80,75,852	11,27,08,271	9,51,49,893	99,38,421	72,99,196	68,74,036
March	14,76,14,099	14,66,48,162	9,91,56,968	78,33,545	1,91,74,932	1,51,64,231
Total ...	165,29,21,417	156,97,21,166	173,29,68,523	9,65,31,594	11,81,28,111	15,32,63,725

	Exports, Indian Merchandise			Total Exports		
	1939-40	1940-41	1941-42	1939-40	1940-41	1941-42
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
April	12,57,72,581	18,70,53,626	11,42,10,664	13,25,50,318	19,51,81,383	12,10,99,723
May	14,45,97,708	19,14,07,616	13,83,66,540	15,34,28,511	19,75,06,343	15,15,50,268
June	14,77,50,610	16,95,61,083	15,71,64,559	15,42,14,915	17,70,43,871	16,47,06,716
July	15,90,50,285	13,32,89,951	20,39,87,325	16,71,02,329	14,00,71,914	21,59,50,643
August	15,90,27,517	14,21,51,683	21,78,87,634	16,39,66,952	14,62,78,103	23,17,48,911
September	15,28,55,122	16,22,04,915	22,77,36,911	15,61,04,191	17,05,68,496	24,94,85,890
October ..	14,16,01,461	14,46,43,809	26,54,62,170	14,75,45,743	15,41,96,911	28,41,46,923
November	16,42,72,490	15,08,24,107	24,39,99,797	17,53,95,960	16,30,40,739	25,72,02,457
December	19,83,39,051	15,81,85,840	19,72,69,606	21,00,71,953	16,97,55,635	20,96,53,718
January ..	23,25,42,209	19,70,73,259	20,70,05,084	24,41,87,790	21,44,06,477	21,87,70,499
February	21,48,49,792	11,85,45,529	20,68,75,756	22,47,88,213	12,58,44,725	21,37,49,792
March	19,85,53,571	11,40,53,002	19,22,62,342	20,63,87,116	13,32,27,934	20,74,26,573
Total ..	203,92,12,397	186,89,94,420	237,22,28,388	213,57,43,991	198,71,22,531	252,54,92,113

Imports of Foreign Merchandise for 1939-42

	Twelve Months, 1st April to 31st March		
	1939-40	1940-41	1941-42
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco—			
A. Fish (*excluding*) canned fish)	7,29,511	6,61,030	6,24,242
B. Fruits and Vegetables	1,21,27,789	1,02,15,888	1,12,10,973
C. Grain, Pulse and Flour	21,80,54,101	14,34,85,286	15,02,02,992
D. Liquors ..	1,71,36,894	1,59,59,106	2,13,51,345
E. Provisions and Oilman's stores ..	2,63,48,061	2,26,01,344	2,55,71,101
F. Spices ..	2,54,50,497	2,19,29,883	2,21,86,828
G. Sugar ..	3,31,57,767	36,01,089	1,07,54,498
H. Tea ..	15,95,704	12,59,316	11,98,434
I. Other Food and Drink	63,18,115	50,20,667	1,01,15,009
J. Tobacco	1,16,96,634	1,33,95,193	2,51,64,276
Total Class I	35,29,15,136	23,81,37,802	27,84,09,689
II—Raw Materials and Produce and articles mainly unmanufactured			
A. Coal ..	1,96,129	1,11,253	2,66,054
B. Other non-metallic mining and quarry products and the like ..	1,48,38,503	1,12,27,177	1,12,09,567
C. Fodder, Bran and Pollards	3,21,224	1,14,430	58,379
D. Gums, Resins and Lac ..	52,76,683	37,66,694	51,12,324
E. Hides and Skins raw or undressed	19,48,893	16,77,695	31,64,254
F. Metallic ores and scrap iron or steel for re-manufacture	7,12,413	6,80,247	13,62,171
G. Oils-Vegetable Mineral and Animal ..	18,64,40,431	21,03,33,104	21,84,98,729
H. Oilcakes of all kinds	8,252	22,252	20,442
I. Paper-making materials	23,63,947	12,69,227	11,28,677
J. Rubber, raw or crude ..	19,45,950	31,88,942	80,13,900
K. Seeds, *including* nuts for oils	88,01,595	1,53,72,824	1,98,17,573
L. Tallow, Stearne and Wax	37,67,132	30,69,345	58,01,071
M. Cotton, raw and waste ..	8,05,46,308	9,43,33,314	51,34,42,565
N. Jute, raw ..	54,910	2,28,324	45,295
O. Silk, raw and cocoons ..	62,72,190	75,76,436	80,87,485
P. Wool, raw	74,98,739	2,78,84,047	2,77,18,194
Q. Other textile materials	10,07,576	29,81,095	32,34,699
R. Wood and Timber ..	2,43,00,429	2,60,67,475	2,74,50,079
x. Miscellaneous	1,50,29,467	1,09,81,543	60,48,108
Total Class II	36,13,11,030	42,09,85,364	50,05,40,561
III—Articles wholly or mainly manufactured—			
A. Apparel	48,30,276	37,40,877	32,23,319
B. Arms, Ammunition and Military Stores ..	48,99,304	48,44,058	48,60,111
C. Chemicals, Drugs and Medicines	7,50,60,114	8,06,77,256	8,75,61,077
D. Cutlery, hardware, Implements and instruments (*excluding* Electric instruments and Apparatus)	5,57,32,846	5,05,24,869	5,43,85,187
E. Dyes and Colours ..	4,66,76,658	6,37,55,398	6,96,22,295
F. Electrical Goods and Apparatus (*other than* Machinery)	2,87,43,404	2,48,95,443	2,40,08,924
G. Furniture, Cabinetware and Manufactures of wood and Timber	39,44,082	41,34,348	17,86,625
H. Glassware and Earthen ware ..	1,37,80,716	1,16,83,766	1,00,91,461
I. Hides and Skins, tanned or dressed, and Leather	53,79,066	47,65,027	60,90,497
J. Machinery of all kinds *including* belting for Machinery	15,36,72,900	11,82,50,624	13,72,91,863
K. Metals—Iron and Steel and manufactures thereof ..	6,06,52,525	6,81,40,500	6,29,53,421
L. Metals *other than* Iron and Steel and manufactures thereof ..	4,73,36,034	5,00,80,446	6,33,91,594
M. Paper, Paste board and Stationery	4,10,62,438	4,51,34,088	4,06,64,757
N. Rubbber manufactures	1,48,42,154	1,56,00,480	1,55,31,324
O. Vehicle (*excluding* Locomotives, etc., for Railways)	6,86,53,968	6,81,60,957	13,03,56,343
P. Cotton yarns and manufactures	14,05,92,860	11,35,33,803	6,79,11,384
Q. Jute ..	6,22,999	7,64,573	6,10,445
R. Silk ..	1,19,48,749	95,98,710	68,20,706
S. Woollen ..	1,41,41,209	1,49,53,174	1,92,79,592
T. Other yarns and textile fabrics ..	6,08,24,924	7,31,64,235	4,96,83,820
U. Miscellaneous	6,46,75,308	6,86,90,881	8,04,32,901
Total Class III	91,80,62,834	89,50,92,713	93,67,57,646
IV—LivingAnimals—			
A. Horse ..	14,12,103	5,34,937	2,25,426
B. Other living animals	1,56,230	34,321	16,387
Total ClassIV	15,68,333	5,69,258	2,41,813
V—Postal Articles and baggage not specified—			
A. Postal Articles	1,76,44,090	1,35,31,324	1,60,76,109
B. Articles imported as baggage	14,19,994	14,04,454	9,78,705
Total Class V	1,90,64,084	1,49,36,029	1,70,54,814
Grand Total	165,29,21,417	156,97,21,166	173,29,68,523

Exports of Foreign Merchandise

	Twelve Months, 1st April to 31st March		
	1939-40	1940-41	1941-42
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco—			
A. Fish (*excluding* canned fish) ..	38,766	5,461	3,959
B. Fruits and Vegetables ..	9,06,520	9,42,807	23,63,676
C. Grain, Pulse and Flour ...	5,14,795	11,32,114	26,92,734
D. Liquors ..	75,056	2,47,341	3,64,521
E. Provisions and Oilmans' stores	2,27,168	5,33,129	7,55,925
F. Spices ..	6,84,249	7,41,993	10,68,190
G. Sugar ..	55,45,502	16,19,520	70,93,629
H. Tea ..	75	4,739	2,45,317
I. Other Food and Drink ..	..	39,934	50,300
J Tobacco ..	1,79,618	2,81,627	37,15,25
Total Class I	81,71,749	55,48,665	1,83,53,510
II—Raw materials and produce and articles mainly unmanufactured—			
A Coal and Coke	4,811	765	225
B Other non-metallic mining and quarry products and the like ..	73,065	60,597	44,049
C Fodder, Bran and Pollards ..	..	--	--
D Gums, Resins and Lac ...	4,75,560	4,08,415	9,68,978
E. Hides and Skins, raw or undressed	4,50,54,695	5,16,84,309	6,18,86,378
F. Metallic ores and scrap iron or steel for re-manufactures	12,67,065	13,01,132	10,599
G. Oils—Vegetable, Mineral andAnimal	5,18,350	6,28,948	4,17,425
H. Oilcakes of all kinds ..	..	..	..
I.Paper-making materials	..	..	..
J. Rubber, raw or crude ..	5,059	--	35,396
K. Seeds (*including* nuts for oils) ..	1,25,113	1,18,898	6,29,324
L. Tallow, Stearine and Wax ..	2,706	2,149	1,00,045
M. Cotton, raw and waste ..	13,09,214	14,53,087	36,31,675
N Jute ..	..	..	..
O Silk, ..	83,625	2,04,364	1,00,997
P Wood ..	57,99,463	79,00,498	87,42,814
Q Other textile materials ..	..	..	4,30,131
R. Wood and Timber	66,562	83,045	1,05,623
S. Miscellaneous ..	6,14,919	8,28,411	6,28,770
Total Class II ..	5,54,00,213	6,46,74,618	7,77,32,329
III—Articles wholly or mainly manufactured—			
A. Apparel	6,26,540	2,82,326	6,54,857
B. Arms, Ammunition and Military stores	1,12,125	5,48,708	72,141
C. Chemicals, Drugs and Medicines	8,96,307	13,53,493	14,61,012
D. Cutlery, Hardware, Implements, and instruments (*excluding* Electrical Instruments and Apparatus)	45,41,693	54,76,748	46,40,163
E. Dyes and Colours	6,66,971	10,80,236	12,39,529
F. Electrical Goods and Apparatus (*other than*) Machinery	8,20,658	13,19,939	8,78,528
G. Furniture, Cabinetware and Manufactures of Wood and Timber	2,15,214	2,87,138	1,83,912
H. Glassware and Earthenware	2,75,385	2,54,570	4,29,742
I. Hides and skins tanned or dressed and Leather ..	2,30,437	48,527	54,715
J. Machinery of all kinds *including* belting for Machinery) ..	17,35,881	31,99,522	16,81,389
K. Metals—Iron and Steel and manufactures thereof ..	7,49,219	21,87,532	8,18,704
L. Metals *other than* Iron and steel and manufacture thereof ..	13,32,596	8,46,325	5,37,666
M. Paper, Paste board and Stationery	4,30,726	7,03,932	4,14,932
N. Rubber manufactures	3,24,494	4,17,795	4,67,142
O. Vehicles(*excluding* Locomotives, etc, for Railways	49,25,953	73,82,770	57,13,470
P. Cotton yarns and manufactures ..	40,11,918	1,03,13,722	1,92,21,425
Q. Jute ..	..	..	..
R. Silk ..	14,25,997	9,93,442	9,21,099
S. Woollen	12,87,848	11,56,816	22,08,507
T. Other yarns and textiles fabrics ..	65,20,738	86,19,279	1,35,36,959
U. Miscellaneous articles ..	14,13,872	11,63,709	18,43,083
Total Class III	3,25,44,572	4,76,36,529	5,69,98,975
IV—Living animals—			
A. Horses ..	2,48,900	1,16,600	9,400
B. Cattle ..	..	..	..
C. Sheep andGoats			..
D. Other living animals	13,224	1,668	450
Total Class IV	2,62,124	1,18,268	9,850
V—Postal Articles	1,52,936	1,50,031	1,69,061
Grand Total	9,65,31,594	11,81,28,11	15,32,63,725

Exports of Indian Merchandise

	Twelve Months, 1st April to 31st March		
	1939-40	1940-41	1941-42
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco—			
A. Fish (*excluding* canned fish)	69,70,734	63,14,852	60,24,656
B. Fruits and Vegetables ..	2,36,93,978	2,44,02,665	3,09,43,852
C. Grain, Pulse and Flour ..	5,08,82,988	5,91,47,381	10,42,41,143
D. Liquors ..	1,27,253	1,24,187	2,29,502
E. Provisions and Oilman's stores	70,84,763	73,09,030	79,45,814
F. Spices ..	1,26,56,880	88,53,090	1,12,80,811
G. Sugar	7,95,718	27,19,964	31,78,448
H. Tea ..	26,30,59,976	27,78,61,225	39,27,65,175
I. Other Food and Drink ..	78,32,334	28,64,871	43,80,333
J. Tobacco ..	2,52,80,790	2,87,64,561	2,19,88,701
Total, Class I	39,83,85,414	41,83,61,826	58,29,78,435
II—Raw Materials and Produce and articles mainly unmanufactured—			
A. Coal ...	1,89,25,619	1,84,63,548	1,46,42,143
B. Other non-metallic mining and quarry products and the like ..	1,87,89,137	1,60,87,133	2,95,01,770
C. Fodder, Bran and Pollards	4,79,788	5,52,523	5,43,222
D. Gums, Resins and Lac ..	2,22,46,866	2,50,61,591	5,43,98,695
E. Hides and skins raw or undressed	4,11,39,301	3,13,65,204	4,77,17,331
F. Metallic ores and scrap iron or steel for remanufactures ..	2,28,17,883	1,83,21,826	2,92,11,298
G. Oils—Vegetables, Mineral and Animal ..	1,37,46,780	2,40,11,595	2,63,71,830
H. Oilcakes of all kinds ..	2,02,91,618	84,15,772	37,11,398
I. Paper-making materials ..	5,24,465	7,00,749	7,85,533
J. Rubber, raw or crude ..	93,76,330	91,89,408	72,75,185
K. Seeds (*including* nuts for oils)	11,89,52,554	10,04,91,594	10,50,28,394
L. Tallow Stearine and wax ..	3,21,808	4,91,571	7,16,291
M. Cotton, raw and waste ..	31,04,15,123	24,45,56,249	17,54,71,713
N. Jute ..	19,83,33,405	7,84,59,918	10,47,30,980
O. Silk ..	4,50,039	2,65,001	9,44,735
P. Wool ..	3,22,48,606	1,64,18,626	2,60,33,554
Q. Other textile materials ..	87,21,061	76,28,742	96,41,532
R. Wood and Timber	17,02,555	23,86,113	19,97,571
S. Miscellaneous	2,03,73,664	1,57,78,510	1,45,50,995
Total Class II	85,98,56,602	61,86,45,673	65,33,37,167
III—Articles wholly or mainly manufactured—			
A. Apparel ..	43,48,291	68,09,301	74,70,423
B. Arms, Ammunition and Military Stores ..	935	143	11,001
C. Chemicals, Drugs and Medicines	55,96,784	65,16,301	95, 2,828
D. Cutlery, Hardware Implements, and Instruments (*excluding* Electrical Instruments and Apparatus)	47,02,454	64,02,965	72,73,259
E. Dyes and Colours	70,11,261	62,57,157	59,18,985
F. Electrical Goods and Apparatus *other than* Machinery ..	..	..	..
G. Furniture, Cabinet ware and manufactures of Wood and Timber	7,45,936	2,60,732	2,87,574
H. Glassware and Earthenware	2,81,557	7,28,636	12,84,693
I. Hides and skins tanned or dressed and Leather	7,69,50,376	5,98,53,876	6,02,58,551
J. Machinery of all kinds (*including* belting for Machinery) ..	3,53,776	5,05,116	6,53,242
K. Metals—iron and Steel and manufactures thereof	3,99,40,316	5,04,98,115	3,54,45,690
L. Metals, *other than* Iron and Steel and manufactures thereof ..	19,16,473	24,98,569	55,18,494
M. Paper, Pasteboard and Stationery	17,65,558	41,10,412	39,89,492
N. Rubber manufactures ..	9,53,085	41,13,535	47,27,962
O. Vehicles (*excluding* Locomotives, etc. for Railways)	70,106	1,61,713	1,43,512
P. Cotton yarns and manufactures	8,57,58,245	16,49,31,137	36,06,99,541
Q. Jute ..	48,72,14,367	45,38,45,807	53,77,90,033
R. Silk ..	3,28,466	2,47,761	2,73,444
S. Woollen ..	80,98,863	73,23,961	78,83,285
T. Other yarns and textile fabrics	32,93,683	67,12,274	1,37,83,610
U. Miscellaneous articles ..	2,89,48,123	2,88,91,924	2,96,26,030
Total class III	75,82,78,655	81,06,99,434	109,25,81,652
IV—Living Animals—			
A. Horses ..	54,800	41,700	1,95,700
B. Cattle ..	1,56,674	1,01,226	1,42,775
C. Sheep and goats	5,07,790	5,09,868	4,35,547
D. Other living Animals ..	63,842	65,163	44,085
Total Class iv	7,83,106	7,17,957	8,18,107
V—Postal Articles	2,19,08,620	2,05,69,530	4,25,13,027
Grand Total	203,92,12,397	186,89,94,433	237,22,28,388

Statement showing the declared values per unit of principal articles imports and Exports during March 1940, 1941 & 1942

Imports.

	Unit of quantity	1940	1941	1942
	Per	Rs. A. P.	Rs. A. P.	Rs. A. P.
I—Food, Drink and Tobacco—				
Liquors—Ale, beer and Porter	gal.	2 5 7	2 12 2	3 3 1
Spirit—brandy	,,	17 13 4	12 2 8	11 14 6
,, whisky	,,	18 5 11	18 3 0	21 3 11
Spices—betel nuts	lb	0 1 5	0 1 6	0 1 10
Sugar, 16 D.S. and above (*including* beet)	cwt.	9 15 11	10 10 2	11 13 0
Tea	lb.	0 14 7	0 7 8	0 11 8
Salt ..	ton.	27 5 0	24 2 3	43 10 5
Tobacco—cigarettes	lb.	3 7 9	3 7 5	3 11 10
II—Raw Materials—				
Coal	ton	10 13 10	21 0 0	12 11 9
Kerosene oil	gall.	0 7 2	0 7 6	0 9 6
Cotton, raw ..	cwt.	52 0 5	53 12 8	52 14 9
Silk, raw ..	lb	3 5 11	5 10 1	..
III—Articles Wholly Or Mainly Manufactured				
Coaltar dyes—				
,, Alizarine ..	,,	1 4 4	1 11 1	1 15 6
,, Others ..	,,	1 14 3	4 4 6	4 1 0
Steel bars ..	ton	348 8 6	298 8 10	496 2 1
Iron or Steel—				
beams, channels, pillars etc, ..	,,	161 7 11	238 3 6	345 14 9
,, sheets galvanised ..	,,	360 1 7	356 3 8	..
,, tin plates	,,	438 15 4	621 14 9	504 6 8
Motor cars	number	2,115 15 5	2,218 6 0	...
Cotton yarn—				
Grey ..	lb.	0 12 10	1 6 9	1 8 7
White ..	,,	1 1 10	2 1 8	...
Coloured ..	,,	1 9 4	2 0 1	5 11 6
Cotton piecegoods, grey ..	yard	0 2 2	0 2 4	0 10 1
,, ,, white ..	,,	0 4 4	0 3 3	0 7 4
,, ,, coloured ..	,,	0 3 3	0 3 7	0 8 10
Silk piecegoods	,,	0 10 9	0 14 3	0 12 6
Woollen piecegoods ..	,,	2 1 7	2 14 6	5 9 1
Matches ..	gross	2 4 11	2 4 1	..
Soap ..	cwt.	67 2 4	74 10 8	65 6 4

Exports

	Unit of quantity	1940	1941	1942
	Per	Rs. A. P.	Rs. A. P.	Rs. A. P.
I—Food, Drink and Tobacco—				
Grain, pulse and flour—				
Rice, not in the husk ..	cwt.	6 1 5	6 11 11	8 4 10
Wheat ..	,,	6 12 7	5 6 9	7 9 1
Wheat flour ..	,,	7 14 10	7 3 4	8 15 7
Barley ..	,,	7 13 6	8 6 0	4 0 1
Tea, black ..	lb.	0 13 3	0 14 0	1 0 5
Coffee ..	cwt.	48 7 7	41 7 2	48 8 9
II—Raw Materials—				
Coal ..	ton	9 11 6	9 11 10	10 5 11
Shellac .	cwt.	41 6 10	42 3 4	93 12 9
Hides, raw ..	,,	39 7 7	42 2 10	48 2 11
Skins, raw ..	,,	87 9 2	57 1 2	87 3 1
Manganese ore ..	ton	26 4 8	28 14 4	35 12 7
Seeds—Castor ..	cwt.	9 8 0	6 0 7	6 14 8
Groundnuts	,,	6 14 9	4 12 2	6 12 7
Linseeds	,,	9 2 5	6 6 6	8 1 5
Rapeseed	,,	7 8 1	10 2 6	6 4 8
Cotton, raw ..	,,	33 11 9	29 1 2	31 2 5
Jute, raw ...	ton	473 5 0	284 0 10	398 2 2
Wool, raw ..	lb.	0 9 9	0 9 7	0 10 2
Teak wood ..	c.ton	128 15 0	124 2 4	117 10 3
Rubber, raw ..	cwt	44 13 6	50 2 6	56 14 6
III—Articles wholly or mainly manufactured—				
Cotton, twist and yarn	lb.	0 9 10	0 7 11	1 3 2
,, piecegoods ..	yard	0 4 10	0 4 1	0 6 2
Jute—gunny bags	number	0 3 0	0 5 10	0 5 5
,, gunny cloth	yard	0 3 0	0 2 6	0 3 5
Hides, tanned ..	cwt.	108 4 6	133 10 9	117 2 1
Skins ..	,,	233 14 1	191 4 8	232 8 5
Paraffin wax ..	,,	17 14 9	24 8 0	24 8 0

Value of Merchandise imported from each principal country by-sea into British India during the twelve months 1st April to 31st March, 1940-41 and 1941-42.

	Twelve months 1st April to 31st March. 1940-41 Rs.	1941-42. Rs.
British Empire:		
United Kingdom	35,93,97,374	36,64,89,173
Aden and Dependencies ..	40,16,196	47,96,316
Ceylon	2,18,93,518	3,39,43,328
Burma	28,61,88,389	29,47,12,872
Straits Settlements	5,32,56,924	5,35,95,085
Borneo (British)	37,56,727	36,13,136
Hongkong	55,67,263	81,89,458
Union of South Africa ..	77,64,765	1,24,11,260
Maritius and Dependencies (including Seychellus) ..	9,24,998	5,80,835
Zanzibar and Pemba	29,29,580	53,59,009
Kenya Colony	3,36,53,101	6,79,37,454
Canada	2,96,68,455	6,69,08,719
Australia	2,48,07,790	4,95,91,772
New Zealand	1,17,58,277	40,93,213
Other British Pensions ..	5,35,29,746	8,42,66,699
Total British Empire ..	89,91,13,103	105,64,88,329
Foreign Countries:		
U. S. S. R.	8,079	...
Sweden	41,46,576	23,42,440
Norway	18,91,165	1,320
Germany	9,34,729	2,872
Netherlands	48,96,574	2,874
Belgium	93,96,492	44,487
France	61,31,929	18,927
Spain	5,15,337	5,34,180
Switzerland	1,23,68,387	1,72,78,083
Italy	54,43,654	13,065
Austria	26,787	...
Hungary	5,31,634	1,521
Czechoslovakia	8,69,510	3,53,809
Arabia	36,68,658	32,28,535
Iraq	48,82,490	1,02,83,923
Iran	3,40,45,638	6,03,90,408
Java	74,32,821	1,95,88,915
Borneo Dutch	54,27,952	45,46,745
Thailand	27,19,150	7,52,643
China	2,35,32,904	2,82,60,323
Japan	21,54,07,662	11,78,58,746
Egypt	2,74,64,601	4,69,20,735
Portugese East Africa ..	48,87,173	1,05,31,704
Italian East Africa	3,05,356	6,604
United States of America ..	27,00,73,654	34,60,08,971
Other Foreign Countries ..	1,85,49,480	75,05,391
Total Foreign Countries ..	67,06,03,063	67,64,80,194
Grand Total ..	156,97,21,166	173,29,68,523

Value of Indian Merchandise exported to each principal country by-sea from British India during the twelve months 1st April to 31st March, 1940-41 and 1941-42.

	Twelve months 1st April to 31st March. 1940-41 Rs.	1941-42. Rs.
British Empire:		
United Kingdom	64,92,51,088	77,01,10,164
Aden and Dependencies ..	61,45,950	2,95,84,114
Ceylon	7,30,56,111	9,76,74,422
Burma	16,22,81,127	11,73,42,202
Straits Settlements	3,29,64,433	4,29,61,899
Hongkong	1,29,62,410	1,00,72,773
Union of South Africa ..	3,02,81,087	6,65,92,981
Maritius and Dependencies (including Seychellus) ..	98,05,164	1,19,04,686
Zanzibar and Pemba ..	12,31,503	25,54,237
Kenya Colony	1,99,70,356	3,47,29,487
Canada	3,17,23,736	6,47,51,325
British West Indies Islands ..	37,60,731	79,38,910
Australia	7,33,95,398	11,45,12,712
New Zealand	1,30,47,358	1,00,17,112
Other British Possessions ..	4,62,40,628	10,76,80,050
Total British Empire ..	116,61,17,078	148,84,77,074
Foreign Countries:		
U. S. S. R.	12,42,767	71,12,065
Sweden	3,22,143	4,74,115
Norway	...	...
Germany	32,21,637	...
Netherlands	32,39,091	...
Belgium	45,93,973	...
France	4,54,85,135	8,97,770
Spain	10,12,082	10,05,847
Switzerland	36,90,132	...
Italy	...	...
Austria	...	...
Czechoslovakia	...	...
Turkey European	13,10,737	20,45,570
Turkey Asiatic	4,90,789	27,19,014
Arabia	1,03,93,282	2,15,83,013
Iraq	92,53,396	3,25,39,287
Iran	57,15,116	1,33,92,590
Sumatra	13,53,002	17,00,468
Borneo and Java	1,09,82,616	4,86,84,163
Thailand	87,42,446	40,63,114
French Indo-China	63,16,465	2,79,959
China (excluding Hongkong Macao)	9,95,79,097	2,14,98,045
Japan	9,00,27,155	4,59,24,528
Egypt	2,86,91,820	5,96,96,481
Portugese-East Africa ..	58,18,021	34,98,754
Italian East Africa	26,800	71,82,224
Other East African Forts ..	7,22,079	13,24,686
U. S. A.	25,89,92,411	46,39,73,606
West Indies	1,12,47,212	1,87,19,278
South America	5,41,94,896	8,49,94,306
Other Foreign Countries ..	3,62,13,039	4,04,42,501
Total Foreign Countries ..	70,28,77,342	88,37,51,314
Grand Total ..	186,89,94,420	237,22,28,388

Revenue—Government of North-West Frontier Province.

(In Thousands of Rupees)

	Accounts. 1939-40	Revised. 1940-41	Budget. 1941-42
Income-Tax	2,79	4,10	4,35
Land Revenue	18,59	19,03	19,69
Excise	8,87	9,26	9,26
Stamps	7,06	7,43	7,43
Forest	5,22	9,69	9,72
Registration	69	67	67
Scheduled Taxes	3,51	5,45	4,67
Total	46,73	55,62	55,79
Railways	..	..	..
Irrigation	13,81	16,30	14,21
Interest Receipts	63	46	44
Civil Administration	8,08	9,37	8,24
Civil Works	8,23	6,29	6,74
Miscellaneous	5,12	5,18	5,83
Contribution to the Central Governments by Provincial Governments	..	..	..
Miscellaneous Adjustments between Central and Provincial Governments	1,00,01	1,00,00	1,00,00
Extraordinary Receipts ..	..	..	..
Transfers from Reserve Fund ..	..	..	..
Revenue in England with Exchange	..	..	..
TOTAL REVENUE	1,82,61	1,93,52	1,91,25

Revenue—Government of Sind

(In Thousands of Rupees)

	Accounts. 1940-41	Revised. 1941-42	Budget. 1942-43
Taxes on Income	8,32	14,54	17,10
Land Revenue	47,54	42,46	39,14
Excise	37,70	39,72	37,28
Stamps	16,87	17,00	16,56
Forest	7,31	8,01	7,30
Registration	2,19	2,25	2,13
Scheduled Taxes	1,389	13,76	11,78
Total	1,34,22	1,39,44	1,31,29
Forest and other capital outlay charged to Revenue	..	..	..
Railways	..	..	..
Irrigation	1,51,93	1,30,01	1,17,65
Debt Services	4,85	5,64	5,60
Civil Administration	13,69	16,01	14,95
Civil Works	22,44	37,69	11,45
Miscellaneous	4,39	4,43	4,22
Provincial, contribution Miscellaneous adjustments between Central and Provincial Governments ..	1,05,04	1,05,06	1,05,05
Extraordinary Items	83,14	1,06,82	90,53
Total Revenue in India ..	5,19,68	5,43,40	4,80,74
Revenue in England with Exchange	..	..	..
Total Revenue ..	5,19,68	5,43,40	4,80,74

Revenue—Government of Madras

(In Thousands of Rupees)

	Accounts. 1940-41	Revised 1941-42	Budget 1942-43
Taxes in Income	62,40	1 09,05	1 25,25
Land Revenue	5,00,12	5,35,26	5,33,40
Excise	3,39,65	3,70,02	3 40,94
Stamps	1,80,14	1,80,49	1 80,91
Forest	48 48	46,67	45,83
Registration	37,14	38,72	38,42
Scheduled Taxes	2,09,89	1,93,72	2,88,67
Total	37,77,82	14,73,93	14 55,92
Railways			
Irrigation	2,03,37	1,94,17	1,98 63
Interest Receipts	24,40	25,08	25,09
Civil Administration ...	1,09,61	1,07,08	1,03,84
Civil Works	65,51	1,02,18	76,53
Miscellaneous	35,54	39,24	37,64
Contribution to the Central Government by Provincial Governments	...	...	...
Miscellaneous Adjustments between Central and Provincial Goveynments	26	22	22
Extraordinary Receipts			
Transfer from Reserve Reserve ...			
Total Revenue	18,07,51	19,41,90	18,97,78

Expenditure—Government of North-West Frontier Province.

(In Thousands of Rupees)

	Accounts. 1939-40	Revised. 1940-41	Budget. 1941-42
Income-Tax	..	..	..
Land Revenue	3,34	3,76	5,02
Excise	78	85	75
Stamps	30	28	28
Forest	3,52	5,06	5,18
Registration	12	14	15
Scheduled Taxes	45	66	62
Total ..	8,51	10,75	12,00
Forest and other capital outlay charged to Revenue	..	..	..
Railways	..	..	..
Irrigation	4,74	4,21	4,49
Debt Services	1,81	1,48	67
Civil Administration	1,17,91	1,17,76	1,21,72
Civil Works	36,01	31,16	30,51
Miscellaneous ..	18,13	19,42	21,54
Extraordinary Items	..	..	..
Total Expenditure in India ..	1,87,11	1,84,78	1,90,93
Expenditure in England with Exchange			
TOTAL EXPENDITURE	1,87,11	1,84,78	1,90,93

Expenditure—Government of Sind

(In Thousands of Rupees)

	Accounts. 1940-41	Revised. 1941-42	Budget. 1942-43
Income Tax	..	..	..
Land Revenue	19,93	22,32	25,12
Excise	5,00	5,38	5,14
Stamps	39	43	42
Forest	3,74	3,96	4,07
Registration	87	88	91
Scheduled Taxes	38	57	60
Total	30,231	34,04	32,10
Forest and other capital outlay charged to Revenue	..	..	..
Railways	..	..	..
Irrigation	2,46,04	2,51,59	2,11,47
Debt Services	4,92	4,37	3,78
Civil Administration	1,48,41	1,59,74	1,65,52
Civil Works	42,72	67,25	35,47
Miscellaneous	32,80	39,80	43,51
Provincial contribution, Miscellaneous adjustments between Central and Provincial Governments ..	..	..	..
Extraordinary Items	..	..	..
Total Expenditure in India ..	6,05,20	5,56,79	4,96,01
Expenditure in England with Exchange	..	..	..
Total Expenditure	5,05,20	5,56,79	4,96,01

Expenditure—Government of Madras

(In Thousands of Rupees)

	Accounts. 1940-41	Revised. 1941-42	Budget. 1942-43
Income Tax	..	..	..
Land Revenue	22,85	22,39	22,17
Excise	28,13	28,32	28,96
Stamps	5,41	5,5	5,53
Forest	37,52	36,26	37,56
Registration	28,70	28,83	28,94
Scheduled Taxts	85,07	32,86	84,08
Total	2,07,68	20,6,17	2,07,24
For est and other capital outlay chirge to Revenue			
Railways	1,25,68	1,25,40	1,27,35
Irrigation			
Debt Services	24,69	13	20,96
Civil Administration	10,80,74	11,08,10	11,28,78
Civil Works	1,55,89	2,61,01	1,26,36
Miscellaneous	1,50,63	1,77,65	1,96,50
Extraordinarr Items	59,27	45,74	60,01
Total Expenditure in India ..	17,54,75	19,24,29	18,94,28
Expenditure in England with Exchange ..	..	..	..
Total Expenditure	17,54,75	19,24,29	18,94,28

Provincial Government Budgets

(In Lakhs of Rupees)

PROVINCES	1941-42. Revenue	1941-42. Expenditure	1941-42. Surplus (+) or Deficit (−)	Revised Estimates—1941-42. Revenue	Revised Estimates—1941-42. Expenditure	Revised Estimates—1941-42. Surplus (+) or Deficit (−)	Budget Estimates—1942-43. Revenue	Budget Estimates—1942-43. Expenditure	Budget Estimates—1942-43. Surplus (+) or Deficit (−)
Madras	18,08	17,55	+53	19,42	12,24	+18	18,98	18,19	+4
Bombay	14,18	13,61	+87	15,66	15,28	+38	15,18	15,17	+1
Bengal	13,54	14,15	+91	15,29	16,32	−1,03	15,70	16,75	−1,05
United Provinces	14,65	14,64	+1	16,50	16,32	+18	17,12	17,08	+4
Punjab	12,89	12,20	−69	14,20	13,95	+25	13,51	13,64	−10
Bihar	6,18	5,88	+30	6,51	6,04	+47	6,43	5,80	+63
Central Provinces and Berar ..	5,26	4,96	+30	5,18	5,12	+5	5,26	5,23	+3
Assam	3,29	3,13	+16	3,21	3,32	−11	3,19	3,17	+2
N. W. F. Province	1,92	1,83	−9	2,19	2,09	+10	1,97	1,96	+1
Orissa	1,99	1,88	+11	2,06	19,7	+9	1,97	1,97	..
Sind	5,20	5,05	+15	5,43	5,57	+14	4,96	4,96	+15
TOTAL ..	97,43	95,18	+2,30	105,65	105,23	−42	104,15	104,67	−52

Consolidated Debt Position of Provinces At the end of

(Rs. Lakhs)

	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42
I. Public Debt						
(a) Permanent Debt	8,72	12,64	15,07	19,60	23,33	23,02
(b) Floating Debt	..	..	1,50	1,80	50	1,00
(c) Loans from Central Government	1,43, 0	1,21,67	1,23,24	1,21,77	1,20,54	1,19,02
II. Unfunded Debt	15,03	22,39	23,39	24,44	25,51	26,63
III. Gross Total Rupee Debt	1,67,55	1,59,70	1,63,20	1,67,61	1,69,91	1,69,67
IV Net Debt (Deduct Outstanding loans and advances made by Provincial Governments) ..	1,04,63	1,00,32	1,02,48	1,35,65	1,38,98	1,38,11
V. Provisions for the reduction of Debt during the year ..	2,31	1,60	1,06	1,51	2,81	3,39
I. Closing Cash balance	10,10	10,07	7,31	9,59	10,64	8,14

Subventions and other Payments made by the Centre to the Provinces under the Niemeyer award.

(In Lakhs of Rupees)

PAID TO	Income Tax 1940-41 Accounts	Income Tax 1941-42 Accounts	Income Tax 1942-43 Budget Estimates	Jute Duty 1940-41 Accounts	Jute Duty 1941-42 Accounts	Jute Duty 1942-43 Budget Estimates	Subventions 1940-41 Accounts	Subventions 1941-42 Accounts	Subventions 1942-43 Budget Estimates
Bengal	83,20	1,17,80	1,67,50	1,59,17	1,65,55	1,18,654	..	..	..
Bombay	83,20	1,17,80	1,67,50	..	..	..	..	..	..
Madras	62,40	1,10,85	1,25,55	..	..	..	..	..	..
United Provinces	62,40	1,10,85	1,25,55	..	..	..	25,00	25,00	...
Punjab	33,28	59,12	66,96	..	..	..	..	..	..
Central Provinces and Berar	20,80	36,95	41,85	..	..	..	..	..	..
Bihar	41,60	73,90	83,70	14,18	16,14	13,62	..	..	..
Assam	8,32	14,78	16,74	10,59	12,48	12,04	30,00	30,00	30,00
Orissa	8,32	14,78	16,74	0,88	1,06	0,98	43,00	43,00	40,00
N. W. F. Province	4,16	7,39	8,37	..	..	..	1,00,00	1,00,00	1,00,00
Sind	8,32	14,08	16,74	..	..	..	1,02,00	1,05,00	1,05,00
TOTAL	4,16,00	7,39,00	8,37,00	1,85,12	1,95,17	1,75,00	3,03,00	3,03,00	2,75,00

REGISTERED NO. C1646

KASSIM & ISMAEL
FOR
SALT, FLOUR, PAPER, CLOTH-BAGS, AND FREIGHT ENGAGEMENTS
20, ROYD STREET
CALCUTTA
Gram, ALMIRZA. Phone: P.K. 2011.

Indian Finance
ANNUAL 1943
INCORPORATING YEAR BOOK 1943

The Vegetable Product Stores
FOR
Vegetable Products
(VANASPATI)
Substitute for GHEE & BUTTER
Office: 20, ROYD STREET
Stores: 402, Upper Chitpore Road, Calcutte
Gram: ALMIRZA. Phone: P.K. 2011. B.B. 2940.

INDIA AND WORLD ECONOMY

TRENDS OF POST-WAR DEVELOPMENT

NEED FOR INTEGRATION

Throughout history, India has been a great trading nation. And even in modern times, when she is indubitably poor and her poverty is in sharp contrast to the wealth and resources of Western Europe, America or Japan, she takes the tenth rank among the leadng industrial nations of the world. But the place of India in world economy, as it has been in the recent past or as it can be in the period of post war reconstruction, has attracted little attention from those who will in the post-war period shape economic policies of international significance. Western economists and statesmen have always assumed that the Indian economic problem is a problem of inducing India or, in the alternative, coercing her, to fall into line with the policies laid down by international economic conferences. These have in the past favoured the removal of trade barriers in the economic sphere and in the financial sphere, economy in the use of gold. But little or no attempt has been made to see how these policies will affect the economic life, not to speak of the aspirations, of India. India's co-operation in international financial policies, it is true, has presented little or no difficulties. But the era of frequent international economic conferences coincided with the period in which India endeavoured to develop large scale industries behind the wall of protective import duties. The British Government was committed to the principle of fiscal autonomy; and the Indian public, which had only recently learned to evince interest in economic problems, had fastened on protection as the only available instrument of industrial development and amelioration of the material conditions of life of the masses. The policy of discriminating protection, as the special brand of protectionism in India was called, had, no doubt, its defects. But it has had tangible results such as the average Indian can readily recognise, when he finds more and more of the articles of personal use to be "made in India" instead of some foreign country as was the case a decade and a half ago. National sentiment is thus placated; and the public has often been told that scientific arguments against protection are a snare and a delusion. It is thus on guard against any reversal of the protectionist trend whether it be under British or under international auspices.

India and Trade Barriers

The adoption of protectionism by a country which for half a century before the war of 1914-18 had been regarded as the best market for the manufactures of European countries, has naturally loomed large in the eyes of those economists, statesmen and big businessmen in Europe and America who have exercised their minds on the problem of enabling international trade to resume its progress of the pre-war period. It is no matter for surprise that, when the progress of world economy is equated to the recovery of international trade, India should be regarded among other countries as a chief offender against economic progress. But what is surprising is that no attempt has been made to examine the Indian economic problem by itself or together with world economy.

Perhaps, one should not be surprised at this. No nation, can concern itself in another's economic problem except to further its own interests; and such concern has not been lacking. As for India's place in world economy the concept of world economy as something far more than international trade has been painfully slow in its emergence in the consciousness of Western economists. Even today the problems of world economy are thought of only as problems of international trade. And the only cure for the ills of international trade, it is assumed without question, is the restoration of freedom of trade. The fact that most of the progressive nations of the world have bidden goodbye to laissez-faire in internal economic policy, which is the basis of freedom in international trade relations, seems to have made no difference to economic statesmanship. The receipes of international economic conferences have, therefore, little relation either to the conditions of the patient or to the availability of the drugs prescribed. When the nations find that no relief is to be had from the international economic conferences, they feel strengthened in their belief that economic nationalism is both just and expedient and persist in their isolationist policies. The gulf between respectable economic thought and the economic policies of the various nations thus grows ever wider and the one remedy which "scientific" economics has to offer becomes increasingly difficult to apply. Those who recognise the fact that the era of free trade and laissez-faire has been left behind can engage themselves in the search for new links between national economies. It is possible to hold that determination of each national state to make the most of its internal national resources need not necessarily cut up world economy into a number of disparate national economies without any unifying principle whatsoever. While the pursuit of national economic policies naturally brings about a redistribution of productive activity, and occasions serious unsettlement, it is impossible that all links between the economic life of one nation and that of the rest of the world will be broken for ever. The internal economic development which has taken place in every country since the great depression, and also of the standard of living in some countries, cannot be said to hold the threat of universal impoverishment. On the other hand, it does hold out to unprejudiced minds the prospect that the less progressive nations will make up the leeway, and that economic progress in the world will be less lop-sided. Whether this view of economic nationalism is acceptable or not, it cannot be denied that the integration of well-developed national economies can produce as rational a system of world economy as can be reasonably set down to the credit of international free trade.

To examine the impact of international free trade on the economic development of the various countries, either historically or theoretically, is outside the scope of this article. What is pertinent here is that the tendency to regard free trade as the only regulatory principle of economic relations

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and to deny the possibility of a substitute in any imaginable conditions has led to an exaggerated importance to international trade. Economists are strangers to the concept of a world economy, and no attempt is made to employ that concept, whether in the conditions of a common World State, or in those in which the earth's surface is scored all over with political frontiers. It is only when world economy is thought of as distinct from a mere resultant of all the forces prevalent in a regime of free international trade, that the economic needs and resources of each country and the need for exchange of goods and services between each country and the rest of the world can at all be examined. The theory of international trade as distinct from the general theory of exchange, arises from the special consideration given to the space factor on the ground that the mobility of labour and capital is far less between two or more countries than in one and the same country. But the distance that divides one country from another is not the only factor that affects the mobility of labour and capital. Wages do not find their level in the international sphere. And the large differences in the standards of living of the various countries are perpetuated by political forces operating in the economic sphere. The assumption behind the theory of international free trade, that, through the power of profit-motive and the mobility of capital, all areas of the world will tend towards maximum development, has been invalidated by facts. By far the greater part of the world's population and the greater part of the land area on the globe will have to remain steeped in want for centuries, if international free trade is to be the only lever of their economic uplift. It is not, of course, theoretically important that these peoples are convinced that, far from being a lever, free trade is but a deadweight which keeps them down. But the same thing cannot be said of the fact that they are resolved to take on hand the utilisation of their natural resources for the satisfaction of their wants and to do away with all obstacles in their way.

Economic Nationalism as a Social Phenomenon

Another important fact in this context is that the undeveloped and more or less primitive countries of the East are not the only, nor even the more important, offenders against freedom of international trade. In the period before the last war, France, Germany and the United States of America, were in the vanguard of the protectionist countries. While in the case of the U.S.A., the infant industry argument can be reasonably cited in its favour, in the case of France and Germany, the reason has to be sought in the lead which the United Kingdom had obtained through her industrial revolution and through her acquisition of a vast Empire. Faith in protection has not since then been on the wane. In the U.S.A., the protective tariff has never been reduced. And, on the Continent of Europe, the Peace of Versailles and the consequent increase in political frontiers have increased the number of political entities which have to meet directly their economic responsibilities to the people committed to their charge. The Depression forced on the nations a number of expedients in the financial and economic sphere, which make the return to free trade impossible except by sacrificing the economic well-being of large numbers of the people.

To the contention that in the present conditions a return to free trade involves a great deal of human suffering, it is no answer to say that these conditions were caused by the abandonment of free trade. Only those who will suffer by such return to free trade, can give the necessary sanction to the change in economic policy. To assume that such sanction will be forthcoming, or that the end of the present war will see one or two nations so powerful that the need for such sanction will be obviated, is only to invite bitter disappointment. Those who advocate a return to international free trade find themselves led on more or less imperceptibly to blame the politicians for not standing up to the prejudices of a purblind electorate. Such fault-finding only betrays the failure of economists to recognise the limits of their field of study and the limitations of the laws that they propound. That economic life is part of the life of human societies, where other laws besides the economic are in operation is a simple fact, for which economists affect a facile unconcern. The fact—and it is not quite indisputable—that, ideally, free trade is the best means of developing world economy and national economies can make no difference either to the actual shortcomings of free trade as it has been practised or to the dictates of sovereign electorates which refuse to await the tardy workings of the "unseen hand" for their economic security or economic amelioration. No principle, which the economist can discover as a result of his more or less purely hypothetical reasoning, can induce the people of any country to allow their government to shift the responsibility for economic well-being to impersonal and extraneous forces.

The place of the present war in increasing the direct responsibilities of each government in the economic sphere, must also be borne in mind. The nature of the war, the manner in which preparations for it were made by some of the belligerents and the extent of its ravages, all these will necessitate the concentration of attention on the economic problems of each area, and will preclude the offer of a standardised panacea for the economic ills of all the countries of the world. Every government, as soon as it is set on its feet, will have to take an inventory of the needs of its people and the resources at its command, draw up its schedule of annual production, and on the basis of such a schedule, determine the demands that it will have to make upon the rest of the world for the goods and services, of which the country is deficient. It must then attempt to clarify the means by which, and the terms on which, it will obtain such goods and services.

Planning and Security

Such an approach to the national economic problem is politically expedient for every national government; for the electorate enjoins it on the government as its primary duty. The fact that it is politically expedient is often thought to cast on it the stigma of being unscientific. Economic nationalism, it will be evident on a little reflection, need not necessarily make of each national economy a closed economy or cut the links that bind the nations together. The difference between planning in a regime of economic nationalism and the planning that may be expected to result from the operation of economic forces in a regime of international free trade, is, in the main, a difference in emphasis. While the advocates of free trade insist that the distribution of production must be determined by the differential advantages in international exchange of goods, the advocates of economic nationalism urge that the content and volume of international trade must be determined by the possibilities of national production. Economic nationalism is no more indifferent to the links between the nations than free trade is to national development.

This difference in emphasis, it can hardly be denied, has both a practical and theoretical import. On the theoretical side, it may be held that a large part of the criticism made against collectivist economic planning, will apply to economic planning on a national basis. A national plan, whether it is formed by a junta of Dictator's lieutenants or by the suffrage of a free and democratic electorate, is bound to be, to some extent subjective, in the sense in which values in a free economy are not and, for that reason, to lack the guidance which only the price mechanism of a free market can give.

National Planning and Chaos in World Trade

While the validity of this argument cannot be denied, it would be wrong to exaggerate its practical import. It is by no means certain whether in actual practice, the directors of a collectivist plan will be so bereft of light on the question of costs as to be obliged to grope in the way Von Mises predicted. However, the question whether a collectivist economy will not find other yardsticks of effort and satisfaction than prices in a free market is outside our scope. Here, it should suffice to say that, so long as the economic unit in which national economic policies are sought to be applied are reasonably big and so long as the individualist basis of economic life is retained, the price mechanism will continue to yield the necessary guidance in regard to costs.

Turning now to the practical aspect, the period since the last war generally and in particular, the years intervening between the great depression and the outbreak of the present war, have given the world a foretaste of the disorganisation in national economies which the advent of economic nationalism must cause. That this disorganisation is through the medium of international trade is too obvious to be mentioned. The great export trades of the world, namely, cotton textiles from Lancashire, wheat from the U.S.A., etc., suffered

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from the rise of new centres of production of the goods concerned in the countries which were formerly their best markets. Among the nations, which resorted to such a policy of encouraging indigenous production with a view to dispense with importation of certain commodities or articles, or to reduce the dependence on external sources, the distinction must be made between the countries which embarked on the development of international resources, and the countries which adopted apparently similar measures, not out of choice, but because of their inability in the altered conditions of their export trades, to pay for imports on the same scale as formerly.

Unsettlement in Great Trading Countries

A notable instance of the former group of countries is India, and among the latter, the U. K. is by far the most prominent and the most important. It can hardly be pretended that the effects of the change in policy are the same in both groups of countries. In the case of India, while the opponents of protection have tried to make out that the policy of discriminating protection has not brought any compensation for the higher prices of the products of protected industries, the spectacle of an increasing number of modern large scale factories, of diversification of industrial production and of freedom from external sources of supply, which is highly valued in a period like the present, have strengthened the bias of public opinion in favour of a national economic policy. In countries like Britain, the decline of export trades like cotton textiles affects their power to import raw materials and foodstuffs; and though many makeshifts are resorted to, there is a general feeling of nervousness and apprehension about the threatened reduction in the standard of living. One can by no means be certain that such reduction in the import of foodstuffs and other goods as may be necessitated by the adoption of economic nationalism in undeveloped countries can be made up in countries like Great Britain by the people turning their attention to the indigenous production of such goods. On the other hand, it is generally accepted as certain that Britain will not be able to produce sufficient foodstuffs to maintain her population, and that the redistribution of productive activity, which will follow the widespread adoption of economic nationalism, will cause a serious reduction in the standard of living.

"Levelling" of Standards of Living

It is argued from this that economic nationalism must be detrimental to standards of living, and to economic progress all the world over. But this can hardly be sufficient warrant for taking up such an extreme position. In the first place, British economists have not considered the programme of production which their country should adopt in the new regime that is slowly coming on the whole world. Secondly, a reduction in the standard of life in Britain does not necessarily denote a setback in world economy. Some degree of what may be called levelling is unavoidable when the backward countries try to remove the hiatus between their economic development and that of others. If the formulation of a national economic policy for Great Britain should show that Britain has to indent on the rest of the world for goods and services which she cannot get from the other nations on terms which they will be prepared to consider fair, it would only prove that Britain's standards of living had in the past been maintained only at the expense of the weaker and the poorer countries of the world. There is nothing inequitable or inimical to the progress of world economy, if a cut in such standards of living is necessitated by the economic policies of other nations. These standards cannot be held to be equitable or helpful to the progress of world economy merely by reason of Britain having been able to maintain a large export trade in certain conditions of international competition. The element of pure competition in international trade in the era of free trade is often exaggerated. But even if Britain's supremacy is to be attributed solely to her competitive power, it does not follow that the world can make no progress except on the basis that the benefits of her earlier start should be leased to her in perpetuity. There is nothing in the nature of the power of commercial competition, dependent as it is so largely on the accidents of history, to make its continued possession by one or two countries a force for permanent good to the world at large. Inequality of competitive power, like all forms of inequality, militate against the common good; and though equality is not to be blindly favoured, there can be no question that any form of inequality that holds up the progress of others must be done away with.

It is not to be supposed, however, that indifference to reduction in the standards of living in countries which are dependent on international trade is inspired by a sloppy sentimentality towards the backward peoples of the earth. Much as one might regret backwardness and poverty wherever they are found, one must recognise that no nation, not to speak of individuals or groups of individuals, can possibly play the Good Samaritan to the backward peoples. God himself hardly seems eager to play that role. If a better world economic order is envisaged with apparent indifference to its immediate repercussions on some countries, it is because economic security, which every individual and every nation desire for themselves, is unattainable unless there is some sort of order in world economy as a whole. What is even more important, such security will be unattainable on any other basis either for the classes or for the masses.

Planning is the Equal Need of All

It is often assumed that the demand for economic security, which is the main cause of the insistence on more careful regulation of economic life, whether with a view to secure greater freedom of trade or to pursue a planned national economic policy, comes solely from the poorer countries of the world and the poorer classes in the economically powerful countries. Big business in Europe or America is not less insistent on economic security than the working classes in those countries. Likewise, the great industrial nations are no more prepared for the blighting effects of a cyclical slump or for the depressing effects of new policies adopted abroad than the poor countries which have been living by the export of agricultural raw materials. The difference lies in the fact that, while big business and the richer countries expect to attain economic security through the removal of trade barriers, the poorer countries and the working classes in the richer countries are convinced that only regulation of economic life on a planned national basis can save them from the tremendous insecurity of former times. The pressure of democratic public opinion in countries like Britain and the U.S.A. has led the governments of those countries to adopt measures which have had the effect of increasing the restraints on freedom of trade. But for this pressure of public opinion, big business would, probably, have preferred to weather the storms of the slump and then to inaugurate a big drive for freedom of trade. For, in their case, freedom of trade may be expected to afford them not mere economic security, but also the affluence which is bound up with unequal economic conditions among the various countries and inequalities within each country. But the demand for freedom of trade is in its essence a demand for the restoration of order in world economy. It is legitimate, therefore, to ask whether freedom of trade, as it is understood in Great Britain, alone holds the key to a stable world economic order.

The advocates of greater freedom of trade, it must be noted, make a few concessions to the rival standpoint and, at the same time, make a few claims for the remedy they suggest. The concessions are, that freedom of trade will involve a degree of susceptibility to cyclical booms and depressions; that economic progress within each nation will be dependent on the general recovery of international trade; and that economic security from a national, as distinct from an individual point of view, will depend on the freedom from wars which are frequent and of the global kind. Each of these admissions, it must be realised, involves a question of value on which the taste, inclinations and choice of the people concerned and not the opinions of some of the countries should be the deciding factor. The grand ideal of progress may have a special appeal, despite the certain risk of frequent setbacks, to British and American politicians and economists. To them, their visions of progress might seem adequate compensation for the attendant evils. Likewise, dependence on the rest of the world for every forward step that they may make, or the threat of having to go without certain commodities in the event of war, may have no terrors for them, either because they have the means of overcoming these difficulties or otherwise.

No Planning, no Progress

But, as a rule, it is largely true that one's attitude to risks of any kind is determined by one's confidence or ability to meet those risks. A country, placed as India is, cannot possibly regard with equanimity these dangers which are inherent in a regime of international free trade. No Indian can con-

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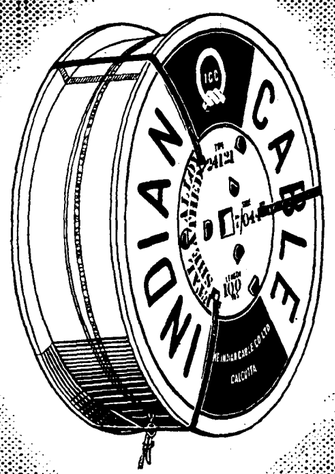
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template without a shudder the possibility of India being forced to look for an increasing national income only to a vast increase in her exports of jute, raw cotton, groundnuts, hides and skins, most of which have already had the benumbing effect of satiety in the export markets. If to house, clothe and feed the 400 millions of our vast and growing population, we have to await developments in a number of foreign countries which will lead to their asking for many times the groundnuts and hides and skins and jute which we had been sending to them before the war, then surely gas bombs would be mercy, indeed, compared to international free trade! If every time, there is a war in this disgustingly war-mongering world, we are to go without essential articles like sugar as in the last war or rice in this, and on the ground that certain economic theories held by some foreigners suggest that we should not produce them in the only way we can produce them, then India might as well be told in plain language, that world economy is being ordered for the benefit of others. India realises that, if her population is to be fed, clothed and housed adequately, she has to apply herself to economic problems directly and make her progress dependent upon the growth of productive activity within her borders to ensure its diversification within the limits set by her natural resources and care for the rest of the world only to the extent of satisfying the legitimate claims of foreign countries on herself and ensuring satisfactory reciprocity of treatment. The argument that, just because she is an exporter of, say, groundnuts, her prosperity must be bound up with groundnuts and that her progress must be dependent upon the increased consumption of groundnuts in foreign markets and the consequent increase in her capacity to import manufactured articles from abroad has no appeal for her. In other words, the claims which the free traders make for their remedy seem to India to be wholly unjustified.

These claims are closely related to the concessions mentioned at an earlier stage. The free traders claim that, if a regime of international free trade involves the susceptibility of world economy to cyclical booms and depressions, the freedom of trade and economic life is itself a potent and natural remedy for the evil of cyclical fluctuations. They point out that the severity of the depression is due to the extent of the departure from the principles of free trade and may even be considered to be a function of interference with trade. Likewise, they argue that, if national economies, as they are shaped in a regime of free trade, are exposed to the risks of shortage or absolute lack of essential things during times of war, a regime of free trade also minimises international friction and very nearly sterilises one of the more important sources of international ill-will and rivalry. These claims, however strong they may seem in a priori reasoning, must be tested in the light of history and in the light of the modifications which the principles of free trade have to undergo before they come into operation as practical policies. It is futile and even dangerous to assume that adoption of free trade ensures freedom of trade and of economic life. Import duties and subsidies are by no means the only form of interference with trade. When business corporations have as much resources at their command as any Government outside the circle of the great powers, and when business can well repay the initial outlay on the important job of cutting out rivals, what passes for free trade in the eyes of politicians and economists may well be the very negation of it. The power of free trade to set right natural cyclical fluctuations and to minimise the risks of war appears far more valid in theory than it will be seen to be in cold examination in the light of history.

No more Differentials!

There is, then, the third claim made on behalf of free trade that it is a more potent instrument of all-round progress in world economy than economic nationalism. This claim, was to some extent, examined from the standpoint of India when it was observed that a regime of international free trade would make the adequacy of food and clothing for



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India's population dependent upon an enormous increase in the world demand for staples of India's export trade. But it is only on the line of larger and larger production of specialities that economic development of all areas of the world is envisaged by the free traders. For they believe that capital must flow into the various channels according to their productivity; and they argue that, if the natural resources of the backward areas warrant the establishment of modern industries therein, then capital will flow towards those areas and a redistribution of productive activity is bound to take place. This line of argument asserts that the inefficiency of labour in the backward areas is a *disadvantage*, which far outweighs all the natural advantages which they may be deemed to possess, and assumes that, if the lower wage levels prevalent in these countries denotes real economies, capital would have flowed into these countries for the development of these potentialities. It has only to be recalled in this context that it was hardly twenty or thirty years ago that western economists and businessmen said the same thing of Japanese labour and enjoyed a smug complacency about the threat of Japanese competition. And yet the outstanding feature of the early thirties of this century, is the universality of Japanese dumping and the provision in almost all countries of safeguards against it. "The effectiveness of labour" theory was exploded; and it began to be argued that safeguards against the competition of countries with lower standards of living would be no sin against the Holy Ghost of Free Trade. The development of Japan's economic life to the point of Japan becoming a menace to western industry provides ample proof of the importance of organisation in industrial development. It is proof also of the fallacy of assuming that what is, is also what ought to be. The question, whether organisation and experience can be provided by other means than protectionist aids to industry or other productive activity, is not a theoretical question, but a practical problem which can be solved only in reference to the conditions of each country and of each period.

Free Trade is no War Aim

It is necessary, therefore, for public opinion in India and abroad to be on guard against the attempt to get the resumption of free trade accepted along with high-sounding democratic principles, as one of the chief war aims and, as such, as an ideal which the nations must follow automatically without any further question. The cry for the resumption of free trade is in part due to habits of thought which are not recognised to be out moded, though they are in fact so—they have become palpably inapplicable to present conditions—and partly to the fact that certain sections of big business see in it a degree of security for their own economic interests. For our part, we are convinced that the resumption of free trade is no more to the interests of the advanced industrial nations of Europe and America than of the backward countries in Asia. If in the East, the economic problem is to make the soil yield more sustenance for the vast populations which inhabit these areas and provide them with the minimum of comforts of life, in Europe and America, the problem is to incorporate the latest scientific inventions and developments in technique into the industrial structure and the normal economic life of the various nations. It is hardly necessary to go in detail into the pre-war developments in plastics or the discoveries made in the course of the present war to show that no nation can reap the full benefits of these developments unless it is able to concentrate its attention on its own development without intrusion from abroad on the strength of high-sounding economic principles. To state only the most significant aspect of these developments, the advancement of science and of industrial technique during the last one decade has been such as to whittle down the importance of the international division of labour on which the whole case for international free trade rests. When industrial technique enables the majority of nations to meet by far the larger part of their material needs from their own internal resources, there is little meaning in insisting that they should all be bound together by what is, the present position can be reasonably called the chains of international free trade. Both the position of world economy and international trade on the one hand, and that of each national economy, as it was at the time of the outbreak of the war, and as it can be seen to be at the end of it, suggest that the wisdom and expediency alike of national planning should be recognised and that the attempt should be directed rather to the co-ordination of well-planned parts than to bring about an amorphous unity in the face of discordant diversity. Such an attempt to formulate a national plan is bound to be made in each country, though leading statesmen may be exhorting the world to hitch the wagon of their national economy to the dead star of international free trade. And State policy in each country is certain to follow the requirements of such a plan rather than the promptings of international protocols

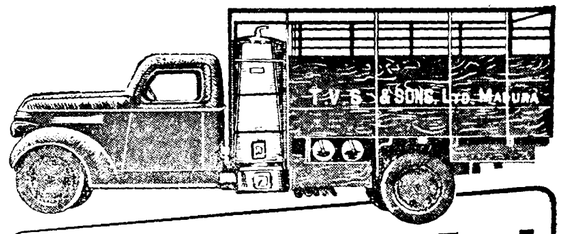
Planning, a Necessity for India

But there is an essential difference in this respect between India and the majority of nations. While other nations have an economic structure which has fairly met the needs of the people, the economic structure in India has catered to the needs of only a fraction of the whole population leaving by far the larger part of it in want. It is only to be expected that a people, of whom the larger part is outside the scope of active economic life, should be ill-fitted to take part in it and make their contribution as efficient productive agents. The economic problem in India, then, has a large and multi-faced social problem, the solution of which is a condition precedent to any reasonably hopeful attempt to solve the economic problem. While that social problem cannot be examined here, the economic aspects of that social problem may be indicated. If illiteracy and disease can be held to account for the ineffectiveness of Indian labour, then it is a strictly economic problem to find the means of making the necessary outlay on education of the masses, on public health, on the conduct of the propaganda which can create in the minds of the people that zest for life and that will to betterment which have been till now so woefully lacking. The need, then, for a plan which can hold out a reasonable chance of the people of India coming into the pale of the progressive races is undeniable. To ask such a country to await in fatalistic faith for the bounties of the unseen hand can only indicate either complete ignorance of the Indian problem or an incredibly callous indifference to the fate of a fifth of the human race. The purpose of this supplement is not to draw the outlines of an economic plan for India, but to indicate the essential features of any plan that may be formulated in the future and, what is more important, to show that any such plan, while it precludes the adoption of free trade principles by India, does not involve any handicap on the progress of other countries. In other words, any economic plan for India will no have element of incompatibility with the legitimate objects of economic policy in other countries. On the other hand, India, in our opinion, will be in a better position to help in the common task of increasing the welfare of the human race as a whole.

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Those who argue that the interests of world economy in the postwar period lie in the promotion of greater freedom of trade and that therefore India must line up with the rest of the world have not apparently given thought to the basis of international economic obligations. It is not as widely appreciated as it should be that the nature of commercial and economic relations between the various nations is determined less by economic or political ideals than by the state of productive technique. Though trade between the nations looms so large in the economic history and commercial aspirations seem to have played so large a part in the fate of empires, it was only at a very late stage of human history that international trade assumed any considerable importance to the life of the bulk of the people in the various countries. It could hardly have been otherwise. The production of export surplus is a condition precedent to international trade. A surplus for export can be obtained either by a high productivity which progress of productive technique can achieve, or by a low consumption in the country of origin which economic inequality and political power can always bring about. Left to herself, Nature is never so liberal as to leave a surplus over the full requirements of the entire population. A genuine surplus available for export and exchange for a similar genuine surplus in some other country is so late a development, that during practically the whole of human history, trade among the nations was not exchange as the economist understands it, but had a large element of robbery in it. Trade in the sense of exchange of surplus of goods produced in excess of local needs is possible only at a certain stage in the development of productive technique. Even at that stage, the political background has to favour the appropriate division of labour. In and about the latter half of the 19th century there was the coincidence of that stage of development of productive technique with such political background. And the coincidence, rather than one or the other, was responsible for certain, distinctive features of world economy and international trade, which the contemporary world was prone to regard as permanent. Classical economists took their cue from such a geographical division of labour and built up the whole edifice of equilibrium economics. If they had grasped the simple truth that history, and not hypothetical reasoning, is the basis of the social sciences, they would have realised the importance of the development of productive technique. And the truth might have been realised that, if productive technique can develop to the point of raising or producing export surpluses, it can also develop to the point of enabling a far wider range of goods to be produced in each centre than before and thus cut at the very base of international division of labour. To identify division of labour with economy in production is a natural error in the conditions of a decade or two ago. And it is natural, too, that attempts to shake off that error should be resisted by ingenious and, to a point, impeccable reasoning. But the fact remains that at no period in history was international trade a fair exchange of genuine surpluses of goods produced in excess of local needs on the strength of differential natural advantages. When productive technique undergoes further development and the political background suffers important changes, all the distinctive features of world economy and international trade, which seem to give substance and validity to classical economics, are sure to vanish. Old familiar phrases such as "the workshop of the world," "producers of primary commodities" and "colonial economics" and the like will lose all meaning.

Of the three categories mentioned above, India is not a workshop of the world; nor is hers a colonial economy. Her position in world economy is best conveyed by the term, producer of primary commodities. Her national economy rests on the export of raw materials and semi-manufactured goods. By far the larger part of the consumer's goods was imported from foreign countries in exchange for her exports of raw materials. Conditions have changed appreciably during the last decade. It would no longer be accurate to say that the basis of India's national economy is that of an exporter of raw materials and an importer of finished manufactures. Before the outbreak of war she took the tenth rank among the world's industrial nations. And when the war will be over, India's ability to produce her needs of consumer's goods will be found to have increased vastly. Nevertheless, the relation of India to world economy is thought of in foreign countries only in terms of conditions that obtained in the first two decades of this century. The increase in indigenous industry, which was necessarily accomplished through a protectionist policy, is condemned as a departure from healthy economic principles and policies, as an instance of the readiness to sacrifice the interests of the masses for those of the classes and as an aberration of economic wisdom which should not be permitted to



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recur. Obviously, economic policy should be judged in relation either to the people of the country or in relation to the interests of world economy as a whole. Implicit in this alternative is the admission that what is good for the people of India may have such adverse effects on the rest of the world that the people of India may be rightly expected to reconsider such a policy. Our main contention is that neither the interests of the people of India nor the interests of world trade require that India should revert to the state in which she was a producer of preliminary commodities and obtained the consumer's goods only in exchange for such primary commodities.

A detailed examination of the relation between Indian and world economy as it was at various stages in history and as it may develop in the future is too big a task to be attempted in an article like this. It should suffice to point out here that close inter-dependence between the two was confined to no more than a half century in her long history. In ancient times, international trade was confined to luxuries for the rich and did not touch the life of the masses in either the exporting or the importing country; and we have explained how genuine international trade was not possible at that stage of productive technique.

By the time the East India Company established itself firmly in India, its political power here and industrial revolution at home had both progressed sufficiently to initiate the process of making India an exporter of raw materials and an importer of manufactured goods. The start was made with raw cotton and cotton manufactures. For nearly the whole of the second half of the 19th century, raw cotton and cotton goods formed by far the biggest item of our exports and imports respectively. But our foreign trade was not characterised for long by the simplicity which these two items readily suggest to us. Lancashire's consumption of Indian cotton was limited by its need for long staple varieties. And other commodities besides cotton began to figure in our export trade. Jute, oilseeds, foodgrains and tea gradually increased in importance, and among these, foodgrains deserve special notice as they can hardly be deemed to be the result of a genuine surplus. The other commodities only emphasised the growing status of India as a primary producer.

The export of primary commodities, which is undoubtedly the most arresting feature of India's trade relations with the rest of the world, both in the early stages of British rule, when indigenous industry was more or less non-existent and in the last two or three decades, when a number of industries have been established as a result of discriminating protection, has led to quite erroneous ideas being formed in foreign countries about the rationality of our trade relations. It is thought that India's productive efforts are directed to the field in which she has great natural advantages and that, since exports must be paid for with imports, she imports those goods which prima facie she is not able to produce more cheaply at home. But an examination of India's import trade in the past will show that it never met important needs of the country's population on the basis of lower costs and prices. Cotton manufactures, the imports of which are apparently the most plausible illustration of a rational division of labour, represent really an item which was transferred from the export side to the import side of our foreign trade by other forces besides differential advantages in production. Sugar, too, was in the later stages another such instance of transfer. But whatever that may be, the import trade of India, was in the pre-protection period made up largely of a wide variety of goods of foreign manufacture, is important.

The question how the national economy can be developed on the basis that the needs of a vast population for such a wide variety of goods should be met wholly or predominantly by imports has never suggested itself to many. Because, for one thing, neither the variety of these goods nor the small proportion of the total population which formed the consumers of these imported goods is ever fully appreciated. The following observation of Dr. Parimal Ray about India's import trade in the pre-protection period emphasises certain features of it, which are not as well known as they should be.

"Coming to imports, what strikes us most is the overwhelming flood of motley goods of European manufacture which from the commencement of the period under review began to pour into India. Quite apart from the increased penetration into formerly isolated markets of the few simple articles of imports, such as cotton manufactures and sugar which were already familiar objects of consumption among the masses, there was a gradually increasing supply from

abroad of a wide range of articles of comfort and luxury, and of a large variety of cheap goods of everyday use. Some of the articles were indeed quite new, being conspicuous by their absence in the former period. Some again, though not wholly unknown in previous days, existed merely in name, being imported in trifling quantities solely for European consumption. Such articles, however, were now in large demand as they had gradually filtered down through the successive strata of Indian society and in not a few cases had at last reached the masses. If, therefore, they were not literally new imports, they were new at least to the vast mass of the indigenous consuming population and the scale on which they had consequently to be imported was altogether new. Of such commodities, some were imported to satisfy newly created wants with which the generations, that had gone by, were totally unfamiliar; but mostly they were in substitution for similar but dearer and inferior homemade goods."

The principal features of this import trade then are firstly, that they displaced indigenous manufactures, secondly that they formed a wide variety of consumer's goods, thirdly that they were consumed by only a small fraction of the total population. All these features serve to make the import trade an obstacle to the development of the national economy. Since the imports involved a displacement of indigenous manufactures, they give rise to the need for alternative employment. If the increased production of raw materials is not economically or socially an adequate compensation then the import trade must be deemed uneconomic and unprogressive. The fact that the import trade comprises a number of small items and is not distinguishable into broad divisions, which it would be possible to say the country can or cannot produce, shows that the import trade is not the result of the unfettered operation of natural economic laws. The third feature, namely, that the import trade catered only to a small fraction of the total population, shows that to increase the consumption of these goods and raise the general standard of living is next to impossible with the existing division of productive activity, since the path to that goal lies along an increased export of primary products to well-nigh impossible levels.

India's national economic problem has been narrowed in the eyes of many into one of cheapness for the individual consumer. In these narrow terms, the import trade has a natural presumption of cheapness in its favour; and the enthusiastic protectionist often makes the mistake of arguing against the premises which must form the common ground of debate. To prove that an Indian product, which is sold at twice the price at which the competitive imported product had been available in the past, is a palpably impossible task. And if you begin to talk of the long run, many things may happen, which neither side can fully foresee or provide for. It would be both truthful and tactical to recognise that, so long as the problem is regarded as one of ensuring cheapness for the consumer, regardless of whether the term stands for a single individual or a small class or a large section of the population, the advocate of free imports has by far the better of the argument.

But that, indisputably, is not the economic problem as the whole nation ought to understand it and address itself to. The national economic problem, on the other hand, is to help the people to enjoy as high a standard of living as the natural resources of the country permit and not to find the cheapest wares for the individual consumer. The difference between these two approaches is both overlooked and oversimplified in the reasoning of free traders. The uneconomic nature of our import trade will not become clear, so long as we ask ourselves whether Indian industry will be able to market a product at lower prices than the importer. It will become clear only when we ask ourselves, whether a reasonably high standard of life for all sections of the country's population will be possible on the basis of the existing geographical division of labour; in other words, whether we can have an export trade which will enable us to buy all the additional cotton goods, sugar, foodgrains, paper, soap and what not, which we shall need if our standard of living is to rise to a decent level. There can be no two answers to this question. Even if we could—and we certainly cannot—multiply many times our production of all our export staples, the world will have no need for such excess production; and this attempt to improve our standard of living can only defeat itself, since its only result will be a disastrous fall in the prices of these export staples.

It may be asked whether higher standards of living are at all feasible, whether the obstacle in the way is the old division of productive activity. The fact that some of the most important items of our import trade like cotton and sugar figured at one time as exports and that recently India has been able to secure self-sufficiency in respect of such articles should suffice to show that India's needs of consumer's goods need not be met in exchange for the export of raw materials. The goods, which have been imported from abroad and which she cannot produce at home, are altogether exceptional. It would still remain a matter for doubt whether a change in the channels of productive activity would suffice by itself to secure for the people considerably higher standards of living. The three possible obstacles other than the dispensation of "free" international trade are firstly, excess of population, secondly, inadequacy of natural resources and thirdly, backwardness and shortcomings of productive technique. These three factors are more or less closely interconnected and they have to be considered relatively to one another. Overpopulation is necessarily related to the natural resources for the support of it; and the sufficiency or otherwise of natural resources is dependent to a greater extent than is generally believed on the state of productive technique and equipment. No country ever despairs of supporting its population. And if it may seem to foreign observers like Mr. Amery, for instance, that India has more numbers than her natural wealth can support, that may be a reason for our pitching our economic ambitions lower, and not for disabling curselves for any kind of progress by neglecting a great part of our natural resources.

The important fact about India's national economy is that the international division of labour, which in the past tied her to the production of primary products and the import of a wide variety of goods which she was in a position to produce for herself, sterilised all the forces of economic progress within the country. A beginning was made in the establishment of indigenous industries more in consideration of the needs of wartime, when imports are bound to be cut off, than for securing substantial additions and increase in the annual national income. It is easy to exaggerate the benefits of two decades of discriminating protection. But the fact remains that in most cases indigenous industry has only stepped in to provide what we had been forbidden to buy from abroad. The per capita consumption of various categories of consumer's goods has not shown any significant improvement even after making an allowance for the increase in population. Protected industries are yet to lead to industrialisation as such. India's economic life is yet to undergo the changes implied by the term "industrial revolution". Whatever the causes of this delay, it may be admitted that, so long as there is no industrialisation in the true sense of the term, the few industries that have been established cannot represent any real economy, but must be deemed to indicate, on the other hand, a serious privation for the consumers of the protected manufactures. In fact, the bigger the protected industries, the bigger must be deemed to be the loss on account of protection.

But this, however, is no argument against protection. For, in the conditions of two or three decades ago, that is, with the social ideology and economic thought of the time as they were, there was for developing India's industry no alternative to the crude expedient of protectionism. As we have been at pains to show, economic thought did not take into consideration the needs of the entire population in relation to the natural resources of the country. It is assumed with little or no question that the development depended upon the free play of economic forces. It did not recognise that economic forces, as they operate at a given time, may well stop at catering to the needs of the classes at the top according to differential costs, while natural resources, which, if developed, could meet the needs of the whole population, lie unheeded.

Even to-day, economic thought in India would have run in the same old grooves, if two decades of discriminating protection did not end in confronting us with a dangerous dilemma. To-day we know that, to change the metaphor, the path of discriminating protection is a blind alley. It would be useful at this stage to outline the position. Firstly, protection has led to loss of customs revenue which has to be made up by excise duties on the protected industries with countervailing import duties—truly a process of digging holes and filling them. Secondly, protection has led to a shrinkage of foreign markets for our export staples. The conflict between the export trades yclept agriculture and protected industry, which is often thought to be an impractical assumption of academic economists, was seen to be quite real in the early thirties. While Indian industry cannot consume all the raw

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materials produced in the country, its existence, not to speak of progress required in the country to go against the foreign consumers of our raw materials. Thirdly, the problem of costs of production in our protected industries was seen to depend as much on the costs of production of the raw material and on the general upkeep of labour, as on the efficiency of the industry itself. It is not easy within the scope of this article to illustrate in detail the above observations. It should suffice to say that the progress of the cotton mill industry has pushed to the fore the future of Indian cotton, that the cost of production of sugar rests to a large extent on the cost of production of sugarcane, that real economy of production is a matter of improving the physical and mental health and vigor of all classes of population and that twenty or more years of protection have left the national financial system less able, rather than more, to attempt the tasks of national reconstruction which are preliminary to economic reconstruction and economic progress.

We have seen that neither the foreign trade of the free trade era nor the industrial progress of the period of discriminating protection has served the people of India well and that the national economic problem, conceived as one of ensuring for the people the highest standard of living permitted by the natural resources of the country, is yet to be tackled as such. We may now proceed to take stock of the present position of national economy. We may consider it at first in terms of the per capita consumption of the necessaries of life. The food crisis we are now passing through obviates the need for any detailed consideration of the food production and consumption in India. The position in the world as a whole was summarised by the Conference at Hotsprings as one calling for a doubling of the production of foodgrains, trebling the production of milk and increasing to an even greater extent the production of vegetables and fruits. The position in India is, if anything, worse.

Ignoring the small changes that may be made by exports and imports of foodstuffs and on the assumption that our food supplies are what we produce within the country, it has been estimated we are in deficit to the extent of 110 billion calories. But the per capita requirement is taken at 2800 calories against 3500 calories of civilian consumption in the U.S.A. and 4500 calories allowed for American soldiers. It must also be remembered that there is the question of dietetic balance to consider. If we remember the conclusions of Dr. Aykroyd, it may be ventured that mal-nutrition obtains in all but the highest income groups and that the majority of the population has not enough to eat, even quantitatively.

A few figures will bring out the position more clearly. The position in regard to cereals and milk is thus described by Mr. Minoo Masani in his booklet, "Why this Starvation"? "We have according to the latest figures available, a production of 61 million tons of cereals and 8.5 million tons of pulses, making in all a total of 69.5 million tons. We have to deduct from this 7 million tons for purposes of seed and we have therefore a net available supply of 62.5 million tons. Nutrition experts tell us that our minimum average requirement is one pound per head per day of cereals and half a pound of pulses. This, for a total adult population of 300 million works out at 73 million tons. There is thus a deficit of 10.5 million tons in the way of cereals and pulses. So again, we may work out the figure for milk and arrive at the conclusion that there is available 4½ ozs. per head per day, of which 30 per cent is drunk as milk and about 60 per cent goes to the manufacture of ghee. As against this, we are told by experts that 30 ozs. per head per day is the optimum per capita consumption. If we were to work out the total figures we would arrive at a huge deficit". India's plight may also be considered relatively to that of other countries. The per capita consumption of important foods is given in the tables below :

(1) *Sugar:*	per head lbs.
Great Britain	112
U. S. A.	103
New Zealand	115
France	54
Australia	114
Denmark	128
Germany	59
Cuba	88
Java	11
Japan	29
India	20*

*Including gur.

(2) *Milk:*	oz.
India	6.6
Burma	1.8
Canada	56.8
Great Britain	40.7
Germany	35.0
Denmark	40.3
Australia	44.4

(3) *Eggs:*	per head oz.
U. K.	158
Canada	260
Irish Free State	283
Denmark	14.6*
Germany	114
U. S. A.	236
India	7.8
Burma	12

*lb.

It will be seen from the above that though India is the largest producer of sugarcane, her per capita consumption of sugar inclusive of gur is the lowest except Java. The position is hardly better even in the case of such a cheap beverage as tea. Housing is of the pocrest and most primitive type. If Western standards were applied, the amount of building material that would be required for a reasonably large-scale building programme would call for a staggering increase in the production of the industries concerned. Turning to clothing, the per capita consumption of cotton cloth in this country has been fluctuating between ten and fifteen yards during the last twenty or thirty years.

Among conventional necessaries, soap may be taken first as being on the border line. The consumption of soap in India is essential at 2 lbs. per year while considering the climatic conditions and the requirements of hygiene this figure should, according to the most conservative standards, ought to be, say, quadrupled. The figures in respect of footwear are not more heartening.

If the physical needs are so poorly met, mentally, India is even more famished. When it is said that an 85 per cent illiteracy in a population of 400 millions has to be overcome, the rest may be left to one's imagination. The educational plan drawn up by Mr. Sargent, the Educational Commissioner for the Government of India, points to an expenditure of Rs. 313 crores out of which Rs. 277 crores has to come from public funds. That, of course, represents the expenditure on the teaching staff, buildings and other equipment. But the amount of additional paper, books and other scholastic requirements which the plan will require has not been estimated; and expert statistical computations are, we understand, being made. But, whatever the figure, it will be prodigious compared to the present production of paper in India which may be put at 1,00,000 tons per annum. Similar large-scale demand for chemicals, drugs, surgical instruments etc. will also flow from an adequate programme for public health on which a special committee is now expending its labour. The inadequacy of doctors will be seen from the fact that Britain with a population of 50 millions has 35 medical institutions and 61,420 doctors; the U.S.A., with a population of 130 millions, has 77 institutions and 150,000 doctors. The 180 million people of Russia have 72 institutions and 120,000 doctors while India with a population of 388 millions has 37 institutions and 42,000 doctors. The appalling state of public health in this country and the main lines on which progress should be attempted are examined in a special article in this Supplement. Here we must be content with emphasising that the per capita expenditure of public funds (Central, Provincial & Local) in India on the health of the people is now less than Rs. 4 per annum against Rs. 30 in England and Rs. 33 in the U.S.A. It is idle to think that the additional material which the educational and public health programmes will require can be secured by other methods than by organising its production within the country.

The consumer needs of the people of the country have been set out in their broad outline. And from this one can easily imagine the leeway that has to be made up in respect of capital not available in full, it is too much to ask for a computation of the total capital equipment. In America, technological enquiries are both accurate and comprehensive. Here in India a similar enquiry is virtually impossible. We have to be content for our present purpose with making note of a few significant facts. There is first of all, the fact that in a vast agricultural country like India, the total length of class I roads is only 85,792 miles. Railway development, often supposed to be overdone, has only provided 41,000 miles. Motor transport was only in its infancy when the war broke out and gave it a great setback. As for other means of transport, the country cart is not only inefficient in itself but constitutes a serious handicap to any adequate road policy. Power resources in India are woefully inadequate for the scale of productive activity required to maintain the people in a reasonably comfortable and progressive state. The total amount of electrical energy consumed in India comes to only 1.5 million horse power. If India's consumption is I, the figure for U.S.A. is 77, for Germany 37, for Russia 24, for U. K. 20, for France 13 and for Italy 10. Potentially hydro-electric power is estimated at 50 times the present level. Our coal production today stands at 26 million tons; but our coal resources are limited and high quality coal calls for careful conservation. Our forests, which are the chief source of domestic fuel for by far the greater part of the coun-

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try, have been neglected in the past: and heedless deforestation has done great harm to irrigation and agriculture. When we think in terms of machinery almost the whole of the equipment of our leading industries has been imported from abroad. Our imports of machinery, which have been naturally sensitive to changes in implementing the policy of discriminating protection, have never been higher than Rs. 10 crores per year. Whatever may be the exact computation of our capital equipment, it is certain that, considered in terms of ability to produce capital goods, it must be reckoned at a lamentably low level.

In these circumstances, India's economic problem is insoluble except by planned development. The other alternative of leaving progress to the motive of private profit will be acceptable only to those who think of the problem not as one of securing the well-being of the people as a whole, but as one of enabling the higher income groups to secure bigger incomes. If one overcomes the bias in favour of a few classes and turns his thought to the economic future of the millions in the country, and pay due consideration to paramount national needs like defence and security, then it will be readily conceded that the old methods of economic progress cannot serve the country at all. Foreign observers are mostly ignorant of the depths of poverty in which the masses in this country have to dwell. They seize a few relatively unimportant facts such as the expansion of this industry or that, point out the cost at which such expansion has been secured and hold forth on the virtues of greater freedom of trade. But the problem in India is to increase the annual production of goods available for consumption by the people. Whether the whole of the production is consumed at home or whether only a part of it, with the other part exchanged for imports, there can be no increase in the annual national income unless more is produced. And more cannot be produced unless the productive effort is increased. Even that will hardly suffice. Every field of productive activity has to be made more fertile.

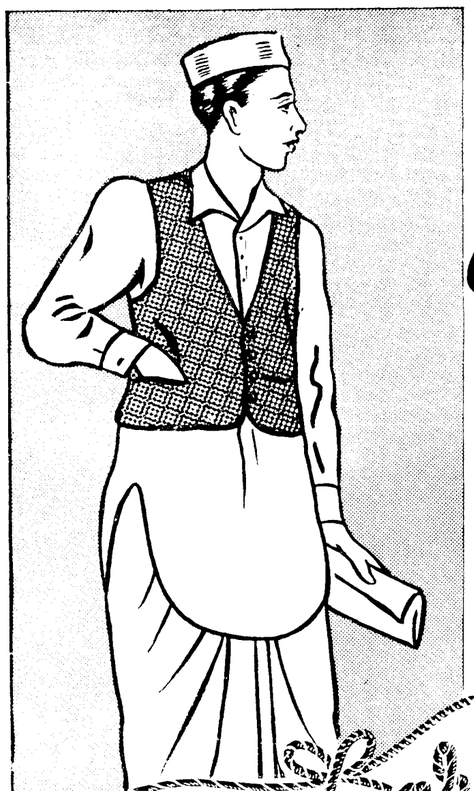
The problem in practical terms is, what are the fields of productive activity which ought to be made more fertile than they have been? And what are the kinds of the total volume which ought to be increased? Respect for the freedom of trade would require that our progress lies in the direction of reducing the cost of production of our export staples and increasing the volume of their output, the presumption being that the decline in the cost of production will improve our competitive position, enable us to export more of these and get in return more of the consumers goods which other countries are in a position to produce. These assupmtions of theoretical economists can hardly stand us in good stead. The question is how much more of our export staples can the rest of the world take from us, no matter how cheap we may be able to sell them?

We refrain at this stage from a detailed examination of the world markets for our export staples and the possibilities of their expansion. An arithmetical computation of the volume of goods we need to keep our people in comfort and of the volume of jute and cotton and groundnuts which the world will need to take from us will show the ridiculousness of all hopes of adequate economic progress on the basis of the existing division of labour.

This, however, is not the only practical objection. The existing division of labour, while it makes for a sufficiency of consumers goods for the people through imports more or less impossible, also weakens the very foundations of a cheap export trade. To take one illuminating example, the export of oilseeds in their raw state has meant and still means the denial to Indian agriculture of one of the important sources of fertilisers. Artificial fertilisers are simply impossible to secure on the scale needed by India except as a result of the establishment of a suitably big chemical industry within the country. An agrarian revolution, without which India cannot overcome the present threat of food shortage, is itself impossible in the absence of a general spread of the scientific spirit which is inseparable from industrialisation. The peasant will continue to scrape the soil and raise pest-ridden crops of but poor yield, so long as he and all his kith and kin are utter strangers to machinery and its manipulations. Those who think that India can be better served by agriculture than by industry do not realise that the choice is, not between efficient agriculture and efficient industry, but between an economy comprising largely of a primitive system of agriculture and an economy which being progressive will be as efficient in agriculture as in industry. The former choice is unreal and, in the present conditions of India, does not exist. The latter is no choice, because no one can possibly choose a primitive agricultural economy in preference to a progressive one which wil make agriculture and industry help each other and take the country to levels of prosperity yet unknown to the people.

To plan such a progressive economic system is always a highly technical matter, particularly in the conditions of the post-war period. In the special Planning Supplement which we brought out at the time of the National Planning Committee, we suggested measures calculated to bring about a new economic consciousness in the people and prepare the ground for an expansion of production in every little locality in the country. Those measures have not become less suitable, because of the conditions of the war period. But there is one new factor which is the direct result of the conditions. And that is the existence of large foreign assets which may amount to £1000 millions at the end of the war, and the large expansion of internal currency four times the pre-war level. The former enables the future government of India to plan the import of capital equipment on a large scale without fear of upsetting the equilibrium of our foreign trade; while the increase in internal circulation may create a climate of opinion essential to nation-building. Expenditure on education and public health can be incurred with fiat money instead of taxation that may have a regressive effect on the tempo of economic activity. The first step in the planning of India's economic progress is to remove or weaken those factors which make our problem more and more difficult as time goes on. Such factors are illiteracy and disease. So, too is poverty in so far as it can be neutralised temporarily by public works expenditure which will cause a wide distribution and augmentation of purchasing power. But the basis of all planned effort is freedom from outside interference. Our purpose in this long leading article is to show that the Indian economic problem cannot be solved if India's obligations to a world economic order are misconceived or are exaggerated. For our part, we are certain that in seeking her economic salvation India, far from having to do harm to other nations, will only lay down a surer basis for prosperity for all peoples and, for that reason, of peace too.





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PUBLIC FINANCE & POST-WAR PLANNING

The people may still lack power to impose their will. But their weakness may well be made up by a quickening of governmental conscience. In any case, the need for expanding public revenue will be so irresistible that problems of public finance will have to be taken out of the ruts of old controversies and discussed in the widest possible setting of economic principles and considerations.

All over the world, the scope and scale of public expenditure have in modern times been consistently on the increase. This trend is the direct result of the enlargement of the functions of government, which the quicker social conscience of the present day has brought about. The idea of the State being no more than an agency for the protection of life and property has been discarded in favour of the idea of government being the supreme social agency for the satisfaction of effective social demands. The result is that public expenditure and the taxation necessary therefor have been on the uptrend. Where the basic economic conditions permit the realisation of larger amounts of public revenue through various forms of direct and veiled taxation, finance ministers have felt little need to depart from the customary ways of raising public revenue.

In India, the position has been, and will be, far different. In the first place, the Government has never accepted the positive functions of government and has continued its role of mere policeman to the community. Secondly, the country is so poor and the national economy so unprogressive that public revenues have never left any considerable surplus over the basic requirements for the maintenance of law and order. Public finance and social progress, including economic progress, have been caught up in a deadlock; and ponderous problems have as a result been laid up. The Government have till now staved off every demand on the plea of inadequate finances or of transfer of responsibilities. But in the post-war world the pressure for development may well develop as much from without the country as from within.

It is necessary, therefore, to consider post-war problems of public finance in the light not only of what has happened in the past, but also of the demand for large-scale social development. The war forms an intriguing interim period between pre-war and post-war finance. To some extent, it is legitimate to regard it as a transition from the former to the latter. Though public finance during the war period has indisputably a few features which are of an emergent and temporary character, it is impossible that war finance does not leave a few marks behind. The question that occurs to one in this context is, whether war finance may not smooth the transition from the restricted accountant's budgets of the pre-war period to the larger and more imaginative budgets suggested by what may be called far-seeing economic statesmanship.

The question cannot be answered if the present war finance is regarded as a whole without any attempt to divide the emergent measures from those which may conceivably come to stay. The distinction between the two will become plainer, if we remember that what interests us is not the financial jugglery which enables huge sums to figure in the budget statements, but the expansion of genuine public revenue effected during the war period. In this view, the great increase in taxed income, the large amounts of Excess Profits Tax, the huge Railway contributions and other incidents of inflated war finance have to be separated from such measures as the tobacco tax in the Centre or the sales tax in the Provinces. The main feature of war finance in India is that the large-scale expenditure is sustained to some extent by the revenues which the war expenditure has made possible. A simple analysis of the finances of the Central Government during the war years will show that the rise in revenue from Rs. 85 crores in the budget for 1940-41 to Rs. 199 crores in that of 1943-44, is accounted for almost wholly by the increase in those heads of revenue which are directly affected by Government expenditure. The E. P. T. is the most notable of such items of revenue and yields the Exchequer as much as Rs. 40 crores. Railway contribution which at the outbreak of war was a negligible amount is now in the vicinity of Rs. 30 crores. Even income-tax owes a great deal of its increased yield to wartime expenditure, while, thanks to inflation, Reserve Bank and small coin profits are also on the increase. It may be said, therefore, that only the increased yield of Central excises from Rs. 6.52 crores in 1939-40 to Rs. 25.42 crores in the budget for 1943-44 constitutes a genuine increase in public revenue. But this is more an increased exaction than an expansion of the sources of public revenue. The only advantage, therefore, from war finance is that the machinery for the collection of certain potentially fruitful taxes like the excise on vegetable ghee and tobacco has been built up.

The position in the Provinces hardly calls for detailed scrutiny. The general trend of provincial finances has been significantly unfavourable. While in 1941-42 all the provinces, excepting Bengal and the C. P., realised considerable surpluses, in the revised estimates for 1942-43, only Punjab and Bombay and the U. P. with its appropriations to revenue reserve have a surplus to speak of. In the case of Madras, revenue and expenditure are expected to balance; and the smaller provinces may well fail to realise the small surpluses they anticipated in March last. Bengal has budgetted for a deficit equal to nearly half the revenue of peace-time. Bombay has on paper balanced her budget. Madras, characteristically, plans for a small surplus of Rs. 10 lakhs. Only the Punjab and Bihar have an appreciable budgetted surplus. The unfavourable trend is thus unmistakable. In the second place, the war has not failed to make a larger draft on provincial finances. As against the total provincial expenditure of about Rs. 103 crores in 1941-42, the budgets for 1943-44 may be put at over Rs. 120 crores. The increase in revenue is to be attributed in the main to the increase in the divisible pool of income-tax, which has gone up from Rs. 283 lakhs in 1939-40 to Rs. 446 lakhs in 1941-42 and to Rs. 12.10 lakhs for 1943-1944. That this increase is largely dependent on railway earnings, which are so inflated by the conditions of the war period, should be sufficient to induce and keep alive a most uncomfortable feeling of insecurity of provincial finances during the post-war period.

It will thus be seen that neither in the Provinces nor in the Centre has any change occurred which is important for solving the problems of public finance so far as they concern the needs of social development in the post-war period. The sources of public revenue have not changed, nor have they been expanded. Heavier levies have been made as in the case of excise duties, income-tax and railway rates and fares. And these have gone to the general pool of created income flowing from the large-scale expenditure of created money.

It is useful now to consider the scale of expenditure on what are called nation-building objects.

For a country so vast as India and a population numbering 400 millions the total amount of money spent by public authorities hardly comes to Rs. 290 crores a year. The Central Budget in peace-time is about Rs. 125 crores while the budgets of the eleven provinces put together come to about Rs. 104 crores. District board and municipalities collect and spend about Rs. 60 crores a year. Of this amount of Rs. 290 crores nearly Rs. 50 crores is absorbed in military expenditure. On an important item of public expenditure like education, the governments and local bodies spend no more than Rs. 23 crores which hardly suffices to provide us a 15 per cent literacy in the whole country.

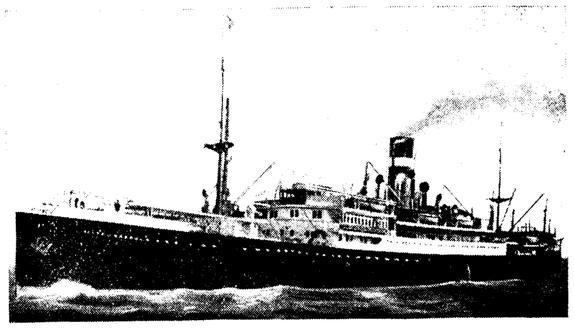
The problem of public finance is, in the last resort, a problem of distribution of the national income, so as to leave enough in the hands of government and government agencies for expenditure on common tasks. This simple form of the problem is, hopelessly distorted by innumerable complications. In the first place, the distribution of this burden on an equitable basis among all classes and individuals raises endless complications. Secondly, the Government is not a mere drain on the total national income—it adds to the pool by the services it renders, which are also economic values. Thirdly, the Government is not a passive recipient of contributions from the citizens—by its activities, it enriches some, while it deprives others and it is thus an agent of redistribution, instead of having a mere title to a share in the national income. Fourthly, the Government, by reason of the concentration of social powers in its hands, is in a position to restrict or enlarge the scope of the common tasks it will set out to accomplish.

Theories of public finance, which have been developed as part of the framework of classical economics, pay heed to the dynamics of a free economics, but ignore altogether the larger dynamic of social development which tends to make the Govern-

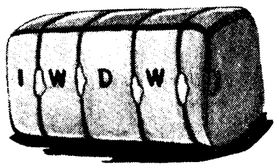
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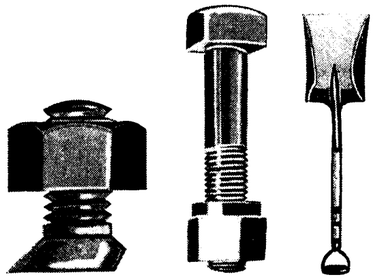
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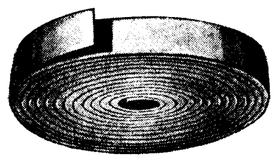
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ment the supreme social organisation for the realisation of effective social demands. The difference between the two is easily understood. For, while equilibrium economics insists that money is best left to fructify in the pockets of the taxpayer, the dynamic of social development enlarges the volume and channels of public expenditure, compels the Government to provide an increasing number of amenities and makes the average citizen, not only a mere payer of taxes, but also the recipient of a number of concrete benefits conferred by the State.

In India, this idea of the King acting like the sun which draws water from sea, lake and field, only to give it back in fresh rains all over the land, finds expression in the old epics. But in modern times, public finance in India has followed the narrow path chalked out by classical economics. The taxpayer has so little money that, whether it is taken by the State or left in his pockets, it evaporates in no time. Today, the problem of public finance in India as we have understood it till recently is the problem of deriving from this poor country an amount of public revenue which is not far behind that of France or Britain. Put in these bald terms, it, no doubt, seems ludicrous. But that is the simple truth of it. While public expenditure in India was limited for more than a century and a half to the payment of an "army of occupation", a police force and a large crowd of clerks, ordinary and glorified, public finance in Britain and other progressive countries had found ways of lengthening the tether by which it was tied to the peg of classical economics. The social dynamic would not allow the demand for compulsory education, old-age pensions and other social services to be denied. Taxation was made progressive. The borderline between progressive and predatory taxation was extended and constantly redrawn at the expense of the latter. Behind the individual facade, the main structure was being made increasingly socialistic.

No such changes were possible in this country. The support of the wealthy classes could not be risked for the sake of progressive system of taxation. And there was little or no elastic source of revenue which could enable the Government to increase the outlay of public finance were, therefore, given a sterile academic touch; and discussion has been centred on the allocation of taxheads between the Centre and the Provinces. This enabled the Government to transfer the more costly responsibilities to the provincial governments and institute enquiries into how the revenue of the provinces could be expanded. The financial basis of political reforms became a favourite theme. And the last decade or two, which is probably the most sterile period in point of political progress, is also the period which is most prolific of such enquiries. The Meston Award and its endless revision and modifications, the Layton Enquiry, the Niemeyer Award, the Peel Committee, all these form but an elaborate way of stressing the obvious, that where the national income is low public expenditure has also to be on a low level. Neither repeated official enquiries nor any philippic against army expenditure in this war-ridden world will suffice as a solution. It is only today after the two major catastrophies of the present generations, the Great Depression and the Great World War, that there is general recognition that in India the problem of increasing the public revenue and the problem of increasing the national income are inextricably bound up. If you want to solve either, you must tackle both.

This, however, is not a matter for mere armchair analysis or reflection. There has to be the impulsion of major social developments. India's poverty in this respect, at any rate, has been made up to a large extent, by the impact of the world war. It is not necessary, even were it easy, to trace every link in this chain of consequences. Suffice it that the fifth year of the war sees not only new activity, but a new conscience and consciousness in the sub-committees of our Post-war Reconstruction Committee. There has also been put forward the Bombay Plan which has stirred the imagination of the Government and people alike. People have caught the idea that, all our handicaps notwithstanding, it is not impossible to enable them to live as decent human beings; that there is some way of accomplishing tasks which formerly had been totally neglected. The people will demand that that way shall be trodden and risks shall not count.

We may now compare the expenditure of the pre-war period and the increase in revenue of the war period with the amounts needed for reconstruction on a scale worth speaking of. The estimates of the Bombay Plan, which is published in extenso elsewhere in this Supplement, show the vast gulf that there is between our resources as they are and our needs. Against an actual expenditure of Rs. 25 crores a year till now on education, we have need in the future for nearly Rs. 227 crores. The authors of the Bombay Plan consider that an appropriation of Rs. 200 crores is necessary to enable Indian agriculture to effect a substantial increase in output. Public Health will likewise show a manifold increase over the present figure.

The question is, how is such public expenditure to be defrayed? The experience of the present war has cured many people of their fright for big figures. "If money can be found on this scale for war, why should it not be found for peace as well?" The argument is indeed very plausible. And even those who advance it are apt to recoil from it when it is a question of acting on its validity. For the analogy is extremely superficial. For one thing, if money is found for war, it is not without paying the price for it. That price is paid in terms of suffering and privations of various kinds, in shortages of goods and services for all classes of the population, in heavy taxation and in large additions to the national debt, the propriety of which is not questioned even mentally by any one. All this is borne because the compulsions of war are obvious to the poorest intelligence and acceptedly even the meanest mind. But in peace, conditions are far different. All classes look forward to living comfortably, once peace is signed. Every one has a feeling of having strained oneself during the war and being entitled, on the advent of peace, to relax in every way. Equality of sacrifice in every little detail comes to the fore front. The background of individual and group psychology does not favour the finding of money for peace in the same way as for war.

This line of reasoning is not applicable to India to the same extent as to other belligerent countries, if only because public feeling towards the war is not the same. Secondly, the incidence of war expenditure on national economy is also different. Reference was made at an earlier stage to the fact that a great part of the increase in public revenue during the war period is made possible by the Government incurring war expenditure on a large scale. The surplus in the Railways and the commercial departments and the increase in income-

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tax, super-tax and excess profits-tax can be put at nearly Rs. 120 crores. This revenue is made possible by the larger turnover on the Railways, telephone and telegraphs and the large orders for supplies on war account. It may be a case of turning into practical terms the joke that "Frenchmen live by tipping one another." But it points to an economic truth which hitherto none but a few cranks have given thought to. For it shows that, if money is made to go round, it certainly adds in its course to the total sum of economic values produced and consumed, and enable the State to raise a larger revenue thereon.

It is this simple truth that provides the key to the deadlock in the economic sphere. On the one hand, past history has shown us that, if we are to cling to old principles and wait for an increase in public revenue before we attempt to develop the country, we shall either wait for ever or, at best, we shall have to be content with a snail's pace of progress which is worse than even stagnation. Now, on the other, we have learned directly from the experience of the war that large scale State expenditure has a way of financing itself, though only in part and with certain obvious risks.

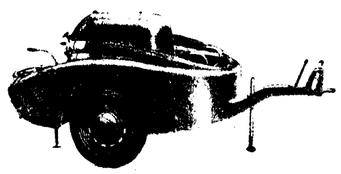
If this is to be applied to the problem of public finance in the post-war period, and with special reference to nation-building, all that the financial purists can insist on is that the risks shall be provided against and that that part of the expenditure which, as we have said, finances itself should not be a small part of the total. The risks in this connection are almost wholly summed up by the term, inflation. And here it is necessary to see the vast difference between the expenditure of created money on war during the war, and the expenditure of created money on peaceful projects during peace time. In the case of the latter, no one will contend that the additions to circulation will for ever hang like a deadweight on the national economy. The worst that can be said is that between the increase in circulation and the increase in production, there is bound to be a time lag, which may be very big and which, even if it were small, might prove dangerous. Whether the time lag will be long or short will depend in the main on the way the money is spent and on the measures taken to ensure that the increased demand for goods and services will be met. There is such a low level of production and consumption and such a large volume of unutilised resources over wide areas of the country. In a country in which people are half fed and yields per acre are the meagrest that man has ever raised anywhere, at any time, it shows lack alike of imagination and understanding to suggest that expenditure on education, sanitation road-making and housing will not lead to a substantial increase in the production of consumer's goods.

The question as it concerns sound public finance, however, is whether this increase in production will be such as to increase public revenue and finance the original expenditure to any considerable extent. It may be conceded that expenditure on nation-building cannot possibly lead to the fabulous profits of the war period which enable the Central Government to raise more than a hundred crores in direct taxation. Surely, there will be no taxable profits on the scale of war profits made at the present time. But, since the total national income will have been very considerably added to, indirect taxation, particularly excises, will prove to be far more fruitful than they have been till now. It is possible to suggest at this stage that in India indirect taxation will for a long time have to be the backbone of public finance. And it is in this view that the machinery that has been devised by Sir Jeremy Raisman for the collection of excises on such widely produced goods as tobacco and vegetable ghee will be found to be invaluable. The expenditure of created money on nation-building does not exhaust the whole of planned economic development. When industrial development is taken up against a background of more prosperous conditions throughout the country, direct taxation will doubtless begin to yield its quota to national revenues. There is no reason, therefore, to shake one's head gravely at the huge figures involved in planned development. Technically regarded, the objective facts seem to suggest that the trend towards devolution in the financial sphere will suffer a strong reaction; and it will be long before decentralisation could be thought of. Provinces may well be reduced to the state of glorified District Boards.

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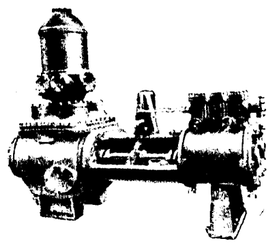
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INDIA AND INTERNATIONAL FINANCIAL REGULATION

By S. T. SADASIVAN

General Manager, Indian Overseas Bank Limited

The publication of the British and American plans for the regulation of international monetary relations is the first step taken to grapple with this problem since the failure of the Monetary and Economic Conference of July 1933.

To understand these plans it would be advantageous to review the trends in the world's monetary systems since the breakdown of the gold standard in 1931 to be able to view the latest proposals in their proper perspective. The 1931 breakdown was caused by financial factors exemplified by the uncontrolled transfer from centre to centre of short-term liquid funds. It is not a collapse due to purely economic or trade disequilibrium. That breakdown led to the adoption of such devices as exchange clearing, exchange control, transfer moratoria and multiple currency practices; and trade, in the last resort, was reduced to the basis of either bilateral dealings or mere barter. It also led to the creation of two distinct currency blocs, the sterling bloc and the dollar bloc. The Ottawa conference and the decisions taken thereat were a contributory factor to the evolution of the sterling bloc, while Canada, U.S.A., and the Latin American republics formed themselves into a natural dollar bloc. Germany's domination in Central Europe gradually resulted in a Central European Bloc with Germany as the dominating power. Notwithstanding the war, these blocs have maintained their distinct status, while Japan's entry into the war has resulted in the "Greater East Asia bloc" being formed with the Yen as the leading currency. The problem to be faced on the termination of the war is how to liquidate these blocs and how to start international trade going once again.

The Keynes plan and the White plan are ostensibly designed to achieve these ends. The Keynes plan is based on certain fundamental assumptions. Firstly, that the gold standard is a complete failure and that, even if it is reinstated and worked in accordance with recognised rules, it exercises a powerful restrictive effect on trade. Secondly, that considerations of social justice, which implies full employment, should be the guiding principle of any new economic set-up. In Keynes' view, mass unemployment and sound money are contradictions in terms. The American plan lays greater stress on the role of gold in any international monetary scheme, but it also recognises that the restoration of the gold standard is impracticable and therefore proposes a modified scheme which has much in common with the Keynes scheme.

Both the British and American plans have the same objective, namely, the provision of a method by which the nations, after the war, can settle the balances arising from their trade with each other. Both the plans rule out settlement of balances in gold. That is to say: they rule out the possibility of a general return to the gold standard, and, at the same time they aim at preventing a return to the system of bilateral trade agreements, which in the inter-war period has been shown to be a contractionist force in trade. Both the plans aim at achieving a state of equilibrium in international balance of payments over relatively short periods by providing temporary financial facilities to needy countries to surmount critical periods or embarassments caused by transient factors.

The British plan seeks to establish an International Clearing Union to keep account of the balance of payments due to various countries. It creates a new unit of international bank money, provisionally called the Bancor, the theoretical gold content of which is to be fixed later; and the values of national currencies are to be fixed in terms of Bancor, and, thereby, in terms of each other. Member states are to agree to accept payment of balances arising from international trade in the form of Bancor credit in the books of the Union. Countries having unfavourable balance of payments with the rest of the world find themselves with a debit balance in the books of the Clearing Union, while those having a favourable balance would have a credit balance. The Union will not participate or interfere in the day-to-day operations of merchants and bankers in the exchange markets of the world, but will only clear the ultimate outstanding balances between Central Banks. The Union will, however, only draw up the clearing statement to keep an account of the balance owed to and by the various institutions but not settle the clearing debts by collecting debtors and paying to the creditors such as could be done in a gold standard regime by shipment of gold or ear-marking of gold. As no transactions in Bancor will take place except when a Member state or its Central Bank is exercising the right to pay in it, it would be obvious that debit balances are created first and credit balances are merely a counterpart of the debits. Every country will be assigned a quota or a credit line equivalent to 75% of the total of its exports and imports and will be allowed to overdraw its account with the Union to the extent of 1/4 of its quota per year for two years, and after half the quota is reached, further overdrafts will be allowed only subject to the consent and advice of the Union. Bancors will be given in exchange for gold, but not gold for Bancors except in certain cases. Bancor is not a currency which can be withdrawn by member states but can only be kept as a balance with the Union.

Broadly speaking, the implications of this scheme are that the various countries will allow their international balance of payments to be carried forward in the books of the Clearing Union without any settlement as happens in the case of commercial banks who are members of a Clearing House and without any kind of security from the countries who have adverse balance of payments and who have created these credit balances. The scheme proceeds on the assumption that such debit balances will only be temporary and that the countries who are running debit balances in their international account will pull themselves together and rectify the position over a relatively short period, though not from year to year, but past experience does not lend any justification to this view.

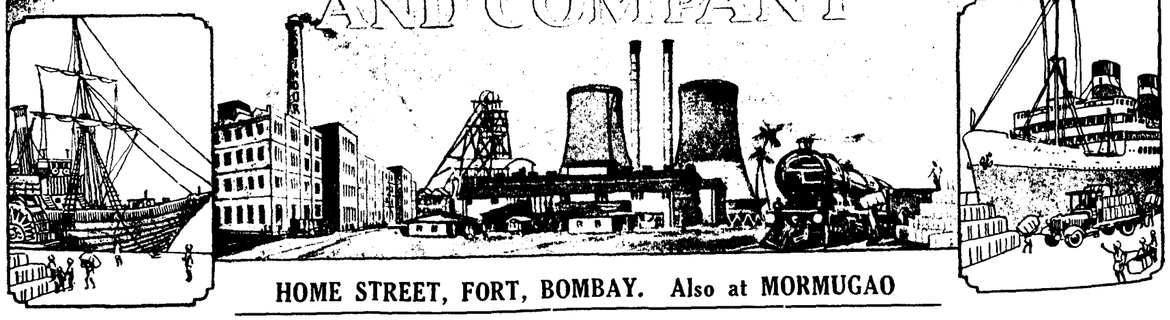
The Keynes plan breaks new ground in throwing responsibility for monetary disequilibrium on creditor countries equally with debtor countries and seeks to discourage creditor countries from accumulating large Bancor balances. It goes even to the length of suggesting that a proper provision might be to require the eventual cancellation or compulsory investment of persistent Bancor credit balances, but hesitates to recommend such a provision only on the ground that it would be unfair to impose on creditor countries such a heavy burden before having experience of the benefits of the clearing plan. To run up a surplus on current trading account might, therefore, not be a blessing, and it is possible that, in contrast with pre-war years, the scramble might be to secure imports rather than to strive for export markets.

There is no obligation on any country to become a member of this Union except of its own free will; and once a country becomes a member, there is provision for it to leave the union subject to notice and to the discharge of obligations incurred. There is also provision for non-members to make use of the facilities afforded by the Union. The difference is that members get overdraft limits while non-members can only run credit Bancor accounts with the Union.

The American scheme, on the other hand, visualizes the establishment of a Stabilization Fund, which, in effect, is an international Bank. The capital of this bank is to be provided by participating nations according to a quota based on national income and the magnitude of fluctuation of balance of international payments. The resources of the Bank will consist of gold, an aggregation of deposits in various currencies held in the Central Banks of the different countries and a portfolio of treasury bills eligible for discount with the Central Banks. There is one important restriction in the American plan regarding the use to which the stock of gold can be put, namely, that the gold contributed by any country can be used only to buy the currency of that country. This provision prevents the redistribution of the present monetary stock of gold as a result of operations of the Bank, although the Central Banks, on their own initiative, can part with gold to or acquire gold from other Central Banks and the bullion markets. The American plan creates a new unit of account known as the Unitas, equivalent to 137-1/7 grains of fine gold, i.e., 10 U.S. Dollars of the present gold value. The value of the currency of each member country is to be fixed by the Fund in terms of gold or Unitas and, therefore, in terms of each other. It is important to note that while in the British scheme the member countries fix the exchange rates, under the American scheme it is the Fund which fixes the exchange rates.

The international Bank will buy and sell the currencies of the various countries and provide those countries which require foreign exchange for settlement of their international balances with the particular foreign currencies required in exchange of local currency. An increase in the international Bank's holding of any particular currency over the initial contribution by a member country means that that country is incurring a deficit in its balance of payments, corresponding to a Bancor overdraft in the British scheme and a reduction in

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the Bank's holding of a currency implies that the country in question is acquiring a favourable balance. The countries having adverse balances are allowed to run their debit balance up to twice their quotas over a period of three years, but as soon as the overdraft limit reaches the quota, i.e., half the permissible limit, remedial measures will be suggested by the international bank, which the member country agrees to carry into effect.

In effect, the American plan restores gold standard in a modified form. It collects in advance gold from prospective deficit countries. Any default by a deficit country of its obligations to the Bank or its withdrawal from the scheme would, no doubt involve the bank in loss, but the loss would be borne by all the members in proportion to their subscription, and, therefore, in proportion to their ability to bear the loss, whereas in the British plan the loss is not distributed, and the country which has the misfortune to hold the largest Bancor balance would suffer most.

On two subjects the British and American schemes are in direct conflict. On the question of the continuation of exchange control after the war, the American plan explicitly lays down that member countries are to abandon, as soon as they decide that conditions permit, all restrictions and controls over foreign exchange transactions other than those involving capital transfers. How capital and non-capital transactions can be differentiated without a system of exchange control is not clear. The British plan is very vague on this subject. It lays down that blocked balances are to go and that members should not impose any restrictions on the disposal of receipts arising out of current trading or invisible income; at the same time, it visualizes the continuance of exchange control now operating in the British Empire and would urge the adoption of a similar system in other countries where such are not already in force. The other point of difference is the continuance of the sterling bloc. The British plan thinks that such a reservation is consistent with an international agreement while the American plan specifically forbids such an arrangement.

Lastly, there is the question of the so-called abnormal war balances. For practical purposes then, this really is a problem of the sterling balances held in London by Empire countries, South American Republics, and a few neutral countries. These balances are estimated at £1200 million, of which approximately £600 million is owned by India as part of the assets of the Issue and Banking Departments of the Reserve Bank. It is not known whether the dollar balances of Latin American countries in New York are included in this category; but as the amount involved is only of the order of £200 millions, it would be surprising if the United States government tries to block them or treat them as abnormal balances. There is also the question of the blocked balances in European Central Banks, notably in the German Reich Bank, where, as a result of pre-war clearing agreements and of war-time finance, very large balances have piled up which the Germans owe to various occupied countries in Europe. The British plan states that the problem is one of special difficulty because, on the one hand, the United Kingdom cannot afford to run the risk of having to redeem them in international currency on a substantial scale. But at the same time, it is recognized that the countries owning the balances should be able to regard them as liquid, at any rate over and above the amounts which they can afford to lock up under an agreed programme of funding or long-term expenditure. The American plan outlines a complicated scheme for the liquidation of these balances over a period of 20 to 25 years. This part of the scheme is anything but lucid, but the effect of the relevant clauses is that the balances are, to start with, regarded as blocked and the creditor country is given liberty to offer on the foreign exchange markets of the world as small percentage of these balances every year as free sterling, while the United Kingdom is asked to redeem an equal amount in foreign currencies or gold. It is doubtful whether it would be possible to withdraw the foreign balances resulting from the sale of sterling unless the creditor country is able to work up an adverse balance on current trade account.

There is growing opposition in England to the American plan on the ground that it amounts to a reversion to the gold standard and England is not likely to agree to any scheme which does not suit her peculiar post-war economic position. She might try to encourage the continuance of the sterling bloc but in the long run it must be realised that it would not be possible for her to maintain full employment and enjoy a high standard of life if the economic condition of the rest of the world is vastly different.

Assuming that a compromise plan is evolved as a result of the Monetary Conference to be held in Washington, India will have to decide whether she should accede to the scheme. Any agreed plan will not depart very much from the basic principles of either scheme and it would appear that the modifications, if any, would place less emphasis on the role of gold and impose a check on the inflationary tendencies of the Keynes plan. To start with, however, the rates of exchange to be fixed for the principal currencies, excepting of course, enemy currencies, are the controlled rates now prevailing. There has been a greater degree of inflation of our currency and a higher rise in the price level than is the case in the United Kingdom or the United States; and it would be impossible at this stage to hold that the controlled rupee-dollar and rupee-sterling rates are a true measure of the purchasing power parities of the three currencies. The same would apply to the rate of exchange between the sterling and the dollar. To bind ourselves to maintain the present rates of exchange might prove an onerous undertaking in the immediate post-war years and might involve a degree of deflation which would be at variance with the declared policies of the international plans. It would be better, therefore, to watch how the rates of exchange fluctuate as a result of gradual decontrol before finally agreeing to fix rates of exchange.

The Reserve Bank's attitude to the proposals is one of agreement with the broad objectives and of critical watchfulness regarding the details. To suggest that we should wait before acceding to the scheme is not to deny the value of operations in the international domain. In the modern world, economic isolation is impossible. But at the same time we have to realise that in the present stage of political development it would be idle to think of the world as a single economic unit. There have, therefore, to be partly closed, partly interdependent national economic systems linked in a state of shifting equilibrium, the changes in equilibrium corresponding to alterations in the rates of exchange of national currencies. To link the systems rigidly would at some stage or other demand excessive adjustment of domestic economy which might involve intolerable strain.

The question in the last resort is one of maintaining a suitable national price system with a slight rising tendency so that full production and full employment might be encouraged. Such a stable price system could not, of course, be held unless the price systems of other countries are similarly controlled and in proper alignment. As long as the gold standard was functioning properly, adjustments were automatic and it was possible by means of monetary devices to bring about the necessary changes in price levels.

The present tendency is, however, to decry gold standard as too rigid. Having regard to the fact that the failure of the gold standard was largely due to financial causes, it would appear that strict control of movements of long and short term capital and of transfers of funds from one centre to another are called for, coupled with a policy of controlled international investment. If this could be made to work satisfactorily and to facilitate international trade. A tentative stabilisation of the rupee in terms of gold, having regard to the appreciation, which as taken place in the value of gold in terms of commodities and of the ultimate price level which it is intended to establish in this country, would be a correct interim monetary policy for this country and this policy could be reviewed when more stable conditions prevail in the international sphere.

Another question that will have to be settled is the composition of the paper currency reserve. We had in the past set too much premium on sterling and attached too little value to rupee securities as backing to our fiduciary issue. It is this which has been responsible for the unlimited expansion which has taken place in our currency system during war time against sterling securities and given rise to the problem of disposal of sterling balances. In any new scheme of currency reform a strict maximum limit should be fixed for the holding of sterling or other foreign securities in the paper currency reserve and expansion of currency should take place against gold or gold and silver in times of active trade and against rupee securities in times of slack trade when the alternative would be slump and deflation. If the war has taught one lesson it is that it would be safe to expand currency against the nation's credit as represented by the obligations of the national government.

Lastly, there is the problem of sterling balances. As stated by the Governor of the Reserve Bank of India at the last annual general meeting, international currency schemes "will be viewed in this country from the point of assistance thereunder in utilising our large overseas balances for the maximum improvement of Indian standards of life." After careful examination of the schemes it might be found that we can best utilise our position as a creditor country by not acceding to the schemes but by relating freedom of action to conclude trade treaties on favourable terms and thereby ensure advantageous liquidation of our sterling balances.

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FUTURE OF HANDLOOM WEAVING INDUSTRY IN INDIA

By M. P. GANDHI

The importance of the handloom weaving industry, which is our "largest small scale industry" in the national economy of India has neither been properly assessed nor appreciated. I propose therefore to set out briefly some of its salient features here.

It is well known that India has been a producer of cotton cloth from times immemorial and is generally regarded as the birth-place of cotton manufacture. It is not necessary for our purpose here to enter into any elaborate discussion of the causes which led to the collapse of this industry before and after the 19th century. It would be relevant to observe, however, that this decline was not due entirely to the competition of cheap mill-made goods imported into the country. In most of its noted centres the industry flourished under court patronage and when this patronage declined the industry also followed suit. Apart from this, a drastic change in the dressing habits of the upper classes, inability of the industry to adapt itself to modern requirements and the prevalence of a demoralising system of middlemen contributed in a large measure to the decline of this ancient Indian industry.

Inspite of this, it is remarkable that the industry still exists and is spread all over the country.

Size of Industry: Number of Handlooms

Let us take a rapid view of the size of the industry. The total number of handlooms in India, excluding Burma, according to the information available to the Fact-Finding Committee, whose report was published in 1943 and to which we have made a reference elsewhere, is about 2 million. The number of active looms is about 17,00,000, more than 2,65,000 being reported to be idle. The percentage of idle looms thus works out to about 13 per cent. Classified according to textiles in the weaving of which they are engaged, it is found that a great majority of the looms are engaged in cotton weaving. Over 14,00,000 looms were engaged in cotton (72 per cent), 99,000 looms in wool (5 per cent), 3,71,000 looms in silk weaving (16 per cent), 25,000 looms in artificial silk (1 per cent), and 1,00,000 looms in other textile mixtures (6 per cent).

Types of Handlooms

In regard to the types of handlooms, we find that today out of a total of 2 million handlooms in India, about 64 per cent are throw-shuttle looms, 35 per cent fly-shuttle looms and 1 per cent of other categories. It is certain that 20 years ago the number of fly-shuttle looms was far less and credit for the increase in the number of this type of loom must go to the endeavours of various Provincial Governments who have popularized them. It will be noted that the proportion of fly-shuttle looms is largest in Travancore (89 per cent), Madras (81 per cent), Mysore (78 per cent), Cochin (73 per cent), Bengal (67 per cent), Bombay (55 per cent), and it is low in the Punjab (5 per cent), Orissa (15 per cent), and in the United Provinces (19 per cent). While in Bengal the total number of looms has fallen with the increase of fly-shuttle sleys, the total has only risen in Madras, indicating that production has advanced more in the one than in the other.

Number of Workers Employed

Obviously, there are serious difficulties in counting workers in the hand-weaving industry as it is functioning to-day. Formerly each weaver was an independent worker. But to-day a great majority of them work for a wage under a master-weaver, mahajan or karkhanadar. The condition of the industry is, however, still unorganized, most of the weavers still working in their own homes, and there is no facility for collecting periodical returns as in the case of mills. According to the Fact-Finding Committee, however, the number of weavers is 14,34,000 whole-time, and 7,47,000 part-time, the total being about 24,00,000 (including 1,75,000 estimated for smaller States). The number of paid assistants was 2,53,000, and unpaid 25,73,000. Thus, the total number of weavers for All India is 24,00,000, while with the addition of auxiliary workers who assist them, some paid and others unpaid, estimated at about 36,00,000 by the Fact-Finding Committee, the total number of workers is about 60,00,000 for the 20,00,000 looms working in India. In addition to these, there are the dependents whose number cannot be less than 40,00,000.

Assuming that each of the 24,00,000 weavers has to support besides himself, 3 persons on average, it can be assessed, observes the report of the Fact-Finding Committee, that the total population depending on the industry must be round about 10 millions.

Small-scale Powerlooms

It has been difficult to estimate with any exactitude the number of powerlooms operating in the country. According to the information which the Fact-Finding Committee was able to gather in 1941, there are about 11,640 powerlooms in the Provinces and States of which 6,350 or more than half (55 per cent) are in Bombay Presidency. Next to Bombay come the Indian States, of which Mysore has 1,300 and Kolhapur State also 1,300. The rest are scattered in the Punjab, C. P. & Berar, Madras, Hyderabad, Baroda and Bihar. 58 per cent of these powerlooms are engaged in cotton weaving, 10 per cent in artificial silk, 14 per cent in silk, 8 per cent in mixture and 3 per cent in wool.

Statistics of Handloom Production

An estimate of the total production of cloth on handloom would perhaps give a better index of the progress of the handloom weaving industry than the number of handloom weavers. Besides, it is an integral part of the national dividend of the country and a measurement of it is essential from many points of view. It is unfortunate, however, that accurate statistical computation is not possible in the case of a non-organized industry like hand-weaving, pursued in small units and scattered all over the country. The Fact-Finding Committee, however, went into the question very closely and arrived at the conclusion that the quantity of handloom cloth (cotton) on the basis of the number of handlooms and the average normal pre-war output per handloom may be estimated at 1,617 million yards, assuming a rough average working season of 200 working days of 9 hours each. The estimate made by the Fact-Finding Committee of the total value of hand-woven cloth in India (in 1939) works out to Rs. 72.80 crores, value of cotton cloth being Rs. 47 crores, silk Rs. 15 crores, artificial silk Rs. 4 crores, and wool Rs. 3 crores. This was the position immediately before the World War II, that is, in 1939.

Structure of Handloom Industry: Weaving-largely a fulltime occupation

Although essentially hand-weaving is a cottage industry, there are elements in it which are somewhat allied to the factory system and for which intervention of financiers is greatly responsible. Enquiries made by the Fact-Finding Committee have shown that hand-weaving at present is a fulltime occupation.

Handloom Industry—Urban or Rural?

According to the popular view, handloom weaving is essentially a village industry and is carried on mostly by independent weavers. This is still largely the case in backward tracts of the country, but it is no longer true of the more important hand-weaving tracts. With the development of communications, markets were extended and trade grew between distant parts. From early days, speciality fabrics from India always found growing markets in certain distant lands. In this state of things the ordinary weaver found himself helpless in his village without credit from a financier or advantage from a merchant in the town, and this induced him to migrate to the towns. As a result of this tendency operating during the last eighty years, hand-weavers are now largely in towns, especially in those areas of the country where production is for distant markets. In many of the towns the weavers occupy prominent positions in civil life.

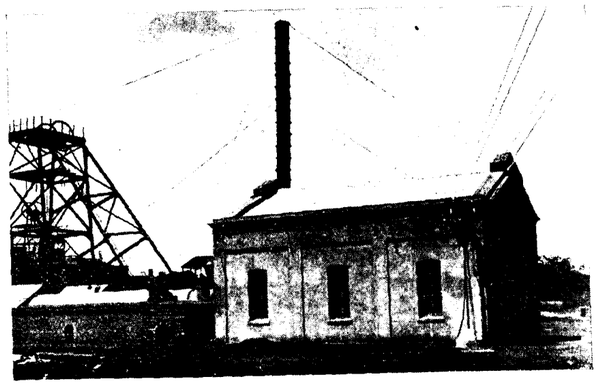
Supply of Raw Material

The principal problem, a problem of vital importance to the industry, is the supply of suitable yarn, as raw materials accounts for a large proportion of the total cost of production of the weaver, ranging from 50 to 60 per cent, or even more, according to the counts and quality of the yarn. It would be clear from this that the uninterrupted availability of cheap and plentiful yarn is a primary condition of the success of the industry. Unfortunately, this primary condition is far from being satisfied at present owing to a multiplicity of factors. So long as the weaver continues to buy yarn

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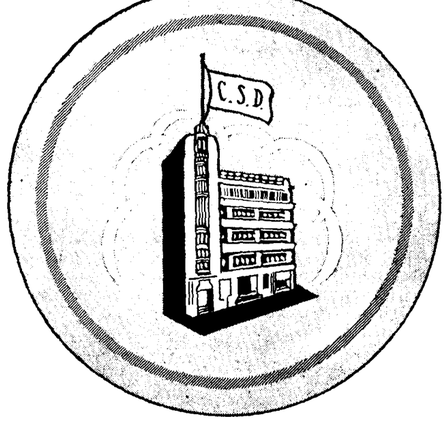
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in the dearest market and sells his cloth in the cheapest market, it is impossible for him to make a decent living out of his employment. So far as yarn is concerned, there is hardly any doubt, observes the Fact-Finding Committee (page 87), that "the handloom weaver is being mulcted on several fronts by a host of middlemen and parasites, whose existence leads to a 'pyramiding' of the prices of yarn and who have carried on nefarious practices in regard to the quality as well as the quantity of yarn supplied, and fully exploited the ignorance, poverty and helplessness of the weavers. The malpractices prevalent in the yarn trade in many parts of the country have added to the costs of handloom industry and to that extent handicapped it in relation to its competitors."

The prevalence of a multiplicity of middlemen at every state in the marketing of yarn leads to a pyramiding of yarn prices and provides numerous opportunities to unscrupulous traders to resort to several malpractices whose incidence ultimately falls upon the poor handloom weaver. Similar to the pyramidical structure of the selling organization, there is also a pyramiding of prices. From the wholesale stage to that of final retailing, each dealer adds his own quota of commission to the price of yarn so that by the time it reaches the hands of the weavers the price becomes considerably inflated.

Qualities of Handloom Fabrics

Generally speaking, handloom weaving excels in the coloured styles of cloth. This is due to two factors, *viz.* that warp of a short length can be prepared most economically by hand process and that a number of colours in the weft can be easily introduced reducing the wastages to a minimum. The limited market of such cloths also makes their production uneconomical for the mills. Thus, the handloom's advantage is specially noted in the following types of production: (1) Cloth made from extremely fine material, e.g., yarn of counts above 20s, (2) cloth inter-woven with gold and silver thread, (3) cloth with multi-coloured designs, (4) cloth with embellishment in the border and headings, (5) short pieces of cloth of unique design to meet individual tastes, (6) rough cloth of very low counts such as durris, niwars, where the tensile strength of the yarn is too low for the mills.

Handloom cloth, it must also be stated, is not free from defects. The chief among them are (1) lack of uniformity in texture, (2) inexactness regarding dimensions, (3) lack of finish, etc.

Types of Handloom Cloth

The principal cloths made at present on the handloom are (1) women's clothing, e.g., Sari, which is known to be the most graceful of all the garments worn in India, lehnga cloth, which is used for making skirts of Hindu women in Northern India, Susi, which is used for salwar (trousers) of Muslim and other women in the Punjab and Sind, Choli-khan, which is the blouse piece worn mostly in the Deccan and Karnatak. (2) men's clothing, which includes dhotis, lungis, chaddars, angavastrams, pugdies or turbans, shirting and coatings, (3) cloth for domestic use, e.g., towels, carpets, curtain cloth, mosquito curtains, etc. and (4) longcloth, which is common to both men and women.

It would be of interest to note that the sari is the most important line of production in Bombay, Madras, Bengal and C. P., while coarse khadi is produced chiefly in the U. P. and the Punjab. Of the total cloth produced in Bombay Province, 95 per cent consists of saries, while a similar percentage in Madras is 44 per cent, in C. P. 75 per cent and Bengal 40 per cent. 60 per cent of the cloth produced in the U. P. consists of coarse khadi, while similar percentage in the Punjab is 43.

Have Mills Replaced Handloom Cloth

The question whether mills have replaced handloom cloth is not very easy to answer. The Fact-Finding Committee have examined this question in close detail and have observed that while there has been a substantial increase amounting to 706 per cent between 1901-02 and 1936-37 in the production of mills, the increase in the production of handlooms has been only 53 per cent. The mill production in 1901-02 was 389 million yards and in 1936-37, 3,220 million yards, while the handloom production was 827 million yards in 1901-02 and 1,265 million yards in 1936-37. A reference, however, to the percentage share of consumption enjoyed by imported cloth, mill cloth, and handloom cloth will show that the handloom industry has maintained its position at a fairly steady percentage during the period although there have been minor fluctuations. For instance, during the last war of 1914-18 the share of handlooms went down considerably and it rose thereafter and has been more or less steady since. On the other hand, the share of the mills rose enormously before and during the last decade. In the case of imports the decline has been fairly continuous. Thus the millowners' contention that they have replaced imported cloth appears to be correct.

Changes in Dress of People

Important changes which have taken place in the clothing requirements of the people throughout the country, both in the style of garments and in the type of fabrics used, are responsible for a certain amount of competition between mills and handlooms. These changes have greatly increased the demand for mill-woven cloth and depressed the market for hand-woven cloth. The Fact-Finding Committee of 1941, after a very careful investigation, came to the conclusion, that among men throughout India the use of turbans has greatly diminished, shirts and kurtas have come into common use and that the demand for chaddars and angavastrams has fallen. Among women, generally, the use of blouses has become common throughout India. In the North, the sari has largely replaced the traditional Hindu (lehnga or ghaghra, and Kurta) and Mussalman (salwar, kurta or dupatta) forms of dress. The use of knitted goods has increased everywhere, especially among men.

Great increase in use of Saris and decrease of use in Turbans in U. P.

The information received from the United Provinces is the most striking, and the most noteworthy changes there between 1914 and 1941 are in regard to women's clothes. The proportion of women wearing lehngas has fallen from 95 per cent to 5 per cent in urban areas and from 100 per cent to 40 per cent in rural areas, whilst the proportion of women using saris has increased from 5 per cent to 95 per cent in urban areas and from nil or negligible per cent to 60 per cent in rural areas. This change has been noticeable between 1914 and 1941. In regard to men, the change in respect of the head-dress is the most striking between these years. In towns, 5 per cent of the people wore turbans in 1914; hardly anyone wears it today (1941). In rural areas, the proportion of turban users has fallen from 70 per cent to 10 per cent. At the same time the proportion of cap-weavers has increased from 60 per cent to 85 per cent in towns and 5 per cent in rural areas.

Consequences of Mill Production on hand-weaving Industry

It is extremely difficult to assess statistically the consequences of mill competition on the hand-weaving industry. The Fact-Finding Committee, after a detailed enquiry, states, however, that it is possible to get a general idea of the trend. It states that competition has been keenest in areas like Bengal where white clothing has been in vogue. On the other hand, where coloured clothing is used, mill cloth has not made much headway. This Report observes that twenty-five years ago, the typical wardrobe of a young woman in Madras would consist of four laceboardered silk saris for special occasions, four ordinary silk saris and about four ordinary cotton saris for everyday wear, making a total of twelve; and all the twelve saris would be hand-woven. To-day, a young woman of the same class would have about double the number of saris, of which two or three would be silk hand-woven saris for special occasions, possibly bought for her wedding, one or two imported georgette and voile saris for parties and a khaddar sari or two bought from khaddar exhibitions. All the rest would be Indian mill-made cotton saris for everyday wear. Twenty-five year ago Hindu women of upper class wore no mill-made saris, at any rate, on ceremonial occasions or at parties ; nor did they wear white saris, as white was considered inauspicious and improper. Since then, the idea of wearing clothes washed and ironed by the dhobi has taken fast root and this has had much to do with the increased use of white saris or light colour made in mills. This idea, however, has not so far appealed to the working class women, because they believe rightly or wrongly that mill saris do not last long and, therefore, in spite of hand-woven saris being dearer, they continued to use them. This consideration does not weigh with the middle-class and upper-class women because "modern women do not want their saris to last last long; they want to buy them cheap, wear them out quickly and renew their wardrobe again". Therefore, "plain white saris, patterned white saris, lightly dyed saris and all mill-made saris are considered the right kind of wear for school, college for any place outside the home. Hand-woven cotton saris are definitely the wrong type of clothes outside the home, and silk saris, though considered fit for parties and home wear, are again not as correct a wear as white mill saris fresh from the laundry."

"In 1920, a college girl at Madras from a Hindu home would own about 5 to 10 Kornad saris and 3 to 4 hand-woven cotton saris of all deep colours (black, red chocolate, green, brown, plain or patterned). A present-day Hindu college girl would own three or four silk saris of which one or two might be kornad and the others foreign silks, and about two dozen saris of which a dozen are likely to be of light colours (also mill-made)". (*Vide* page 176 of the Report of the Fact-Finding Committee).

The Present Position and Prospects of Hand-weaving Industry

It has often been argued that as production of handloom cloth has increased, hand-weaving industry must be considered to have

prospered. This view needs a very careful examination. The increase in the handloom production has been from 906 million yards in 1901-02 to 1905-06 to 948 million yards in 1921-22 to 1925-26, and 1,394 million yards in 1934-35 to 1938-39, and to about 1,500 million yards in 1941. The increase is fairly large. The proportion of total cloth available for consumption supplied by handlooms has remained nearly the same, *i.e.*, 25 per cent, during the last 40 years. In 1942-43, it has increased to over 30 per cent. It will be necessary to explain, however, that while handloom production has increased in some areas, especially in South India, there has been a decline in production in other areas like Bombay and Bengal. In areas where production has increased, it has been due largely to the substitution of fly-shuttle looms for throw-shuttle looms which has been going on in all the prominent handloom areas. The proportion of the fly-shuttle looms is 85 per cent in Madras, 67 per cent in Bengal, 55 per cent in Bombay and 47 per cent in the Central Provinces and Berar. As the average production of fly-shuttle looms has increased to 7 yards as against 4 yards on throw-shuttle, production per loom has increased by 75 per cent by this change alone. This increase in proportion is due largely to the change in technique and has led to no improvement in the economic condition of the weavers. Besides, the increase in production is no proper test of the prosperity of the industry. Hand-weaving is more allied to agriculture than an organized industry. If a mill does not pay a reasonable dividend it will be sold or scrapped and the mill owner will put his money into some other more profitable industry. But if the handloom weaver does not get a reasonable return from his loom, he may work harder and longer to make up by quantity what he loses in value. In fact, most hand-weavers will continue to ply the loom (as a mode of living) even though they get barely the price of yarn used in the making of cloth.

The cotton mill industry has increased its production by leaps and bounds during the last 40 years and yet it was faced with serious financial crisis from time to time and had to seek tariff protection. As compared to the increase of 479 per cent in mill production between 1901-02 to 1938-39, the handloom production underwent an increase of 54 per cent only. If, then, observes the Fact-Finding Committee, the mills had still to supplicate for protection, the case of the handlooms for protection is much stronger.

The Fact-Finding Committee also conclude that there is a large increase in unemployment and under-employment among weavers. Generally, they have no work for more than about six months in a year and even during these months employment is unsteady and irregular. They have also come to the conclusion that there has been a drastic fall in the earnings of hand-weavers throughout the country during the last 10 or 12 years, and the fall in some cases is as high as 70 per cent or 80 per cent. Their present earnings are also found to be extremely low and indicate that employment is far from adequate and that the remuneration received is meagre.

Handlooms give employment to four-fifths of the total number of workers employed in the Cotton Textile Industry.

In spite of the unsatisfactory condition of hand-weavers in many parts of the country, the Fact-Finding Committee report observes, it is not correct to consider hand-weaving as a decaying industry. This can be seen by an examination of the numbers engaged in the industry, by the substantial improvements in production and by the profitable business pursued by certain sections of the industry which are properly organized. In spite of the decline in the numbers employed in the industry, the Fact-Finding Committee report states that there are today more than 2½ million workers engaged in handloom weaving and this cannot be an over-estimate seeing that there are as many as 2 million looms in the country. It is also estimated that a population amounting to 10 millions are still depending on this industry. The cotton textile industry employs only 5 lakhs workers of whom a considerable number are working in spinning mills producing yarn for the handloom. Thus, although today mills are producing about 68 per cent of the total cloth consumed in the country, they employ only a fifth of the total number of workers in the cotton textile industry. The remaining four-fifths are employed in the hand-weaving industry.

Should the Handloom Industry Survive?

It should be remembered that the handloom industry, is, next to agriculture, the largest single industry of the country. It is the main occupation of several millions of people and for most of them there is no subsidiary occupation. Nor is hand-weaving a handmaid to agriculture, but the sole occupation of a large class of people. It is the mainstay of many towns and numerous villages scattered all over the country. Although this industry is only responsible for about 25 or 30% of the total cloth consumed in the country, it employs over 85 per cent of the textile workers of the country. If for any reason the handloom industry collapses, the resultant misery is bound to be a serious problem for the country, as it will involve the pauperization of a large population and this will become a heavy burden on the State. Many flourishing towns and extensive rural areas would thus be deprived of their bread and this may have ugly social and economic consequences.

Secondly, one of India's principal economic problems is the unemployment and underemployment of large masses of people. As a means of solving this problem, large-scale industrialization in India has so far been conspicuously ineffective. Although this country today produces all our sugar, a large part of our requirements in cloth, iron and steel, cement and jute bags in power-using factories, only about 1½ million labourers have been absorbed in all industrial establishments coming under the Factories Act. Had a good many alternative occupations been available in India, large-scale production of cloth would not have caused any great dislocation, but in the present state of the peculiar economy of the country, we have to concentrate largely on occupations which call for a plentiful supply of labour while economizing on capital. This is one of the principal reasons why Mahatma Gandhi has been advocating the necessity of supporting hand-spinning and hand-weaving.

Thirdly, a fundamental cause of India's poverty is the tendency to an unequal diffusion of purchasing power. This defect cannot be rectified by the expansion of factory industries, unless large social and economic changes also take place simultaneously. While the proportion of the wage bill to the total cost of production in mills is at the most 25 per cent, it forms about 40 per cent in hand-weaving with mill yarn and nearly 75 per cent in hand-weaving with hand-spun yarn. So, this industry affords the necessary corrective in this respect.

What is more, there is a special reason in the case of India for preservation of small-scale industries. The village has been the backbone of India's economic as well as cultural life. If industrialization involves the decay of village crafts and the concentration of workers in cities, it will greatly undermine the "serenity, poise, dignity, spaciousness, proportion, graciousness, deep-rooted sureness, and elemental simplicity and beauty" which have characterised our rural life in the past and have been the objects of admiration among our best minds and among those from other countries.

Hand-weaving, our largest small-scale industry.

Hand-weaving is the largest of our small-scale industries. On its welfare depends the prosperity of a numerous population of skilled workers in the country. As now equipped, it can hold its own against the mills if a fair chance is given. On no reasonable ground, therefore, can this industry be denied the little aid it asks for, e.g., by suitable arrangement for an uninterrupted supply of yarn direct to the weavers by the mills at fair prices, the evolution of dependable and efficient organisation for sale of its finished products, publicity and propaganda for making the lasting and superior qualities of handloom cloth known to the people in India as well as other countries, by reducing the dependence of the industry on a host of middlemen, by exempting handloom cloth from taxes like octroi, furnishing new designs, etc.

At a time when the world seems to be in a vortex and plans for Post-War Reconstruction of the world on a grandiose scale are under discussion, it is perhaps unusual for one to concentrate his attention on this small industry, but the great importance of this industry and the unique position it occupies in the Indian national economy make it imperative to do so.

If India is to live, this celebrated and largest indigenous industry must be made to live, and therefore it becomes the duty of every well-wisher of the country to devise, in his own way, measures which would lead to its orderly development and growth.

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The post-war communications programme of India's Government covers civil aviation as well as roads. The inclusion is determined largely by wartime developments. Since the Civil Aviation Directorate's report for 1938 is the only formal document covering achievements as well as the large possibilities in India attention may be invited even now to what was done and attempted in the past. The all-up Empire Air Mail scheme was then viewed as the climax of efforts that covered even an amateur adventure like that of Mr. Kenneth Gandar Dower. The real beginning must however come after the war for civil aviation in India is now in suspended animation. But its possibilities have been more generally recognised in view of the Empire air conference in October 1943 which was not wholly unconnected with the outspoken views of the five U.S. Senators who girdled the globe by air.

Indian commercial organisations during 1943 propounded certain daring opinions in view of developments abroad. In the U.S.A. the Air Transport Command has more than amplified the work of civil air services which have virtually lost their place. The U.S. air services again created a remarkable link with China after the loss of Burma, and due recognition of air services has been the result of the fine work done for supplies to Free China from India. Since the Railways and the Postal department alike have plans for air services the future may be regarded as fairly secure, but Indian anxiety springs largely from the view that Empire predominance will be secured. Before the war Britain investigated civil aviation's position and decided on a merger of the two big subsidised air lines. Last year the Company experienced large changes in direction and personnel though the report of the Shelmerdine Committee was not published. Parliament reflected more than local anxiety in regard to U.S. progress in aviation and the recent claim that the largest air force in the world is that at the disposal of America may give a real edge to U.S. purposes.

In Latin America alone the dissolution of German-controlled enterprise created the opportunity for U.S. expansion. Brazil's entry into the war brings West Africa within the reach of U.S. air lines although the trans-African service is primarily a British creation. Of the Dominions Canada with widening interests actively regulated mainly by C.P.R. enterprise appears to have made a very useful beginning. The Pacific Dominions have by the inter-Governmental agreement defining the position in the Western Pacific made certain of civil aviation proving the proper support of a nascent aircraft industry in Australia. Possible claims of the U.S.A. to air supremacy are evidently overruled by the Dominions' own plan to build up their own security zone. Ratification of the decisions at an Imperial Conference this year would certainly not be lost on India where the claim of local enterprise to special support is related to the overriding claim that foreign concerns are ineligible for assistance.

What Lord Beaverbrook and the delegates to the conference in October 1943 decided has hardly been made public, and it is quite possible that controversy may range over a wide field in the future. As to the necessity for air services in the future, the best outline of what could be done for travel and mail services was given by Mr. J. R. D. Tata in a lecture on the Dawn of the Air Age. That lecture revealed what progress could be made in thirty years' time, given satisfactory conditions. Government's own intentions have not been made very clear but the interest in post-war prospects of civil aviation has grown inordinately. The reasons are obvious. Empire air services will require feeders and the existing companies are strongly placed. Owing to security reasons facts as to services operating and their scope are not made public, but for a year the I.N.A. has striven to place before the public the main desirability of air travel in the future. One or two new air lines have been projected through the familiar medium of company flotation but the greatest interest really attaches to the acquisition of a dormant air line by Indian shipping interests.

The last development could be readily related to the permission given by the Board of Trade to six British shipping companies to change their articles of association in order to run air services. Whatever might or might not be done by the British Overseas Airways Company with its monopoly as regards mail subsidies the major shipping companies have decided to follow the example of the U.S. Grace Lines in regard to air services abroad. Shipping has been duly sensible of the challenge from the air. The advent of cargo flying-boats conditions anxiety. Main advantage, of course, lies with countries able to put out civil aircraft and the design of the York on pattern similar to that of the Lancaster bomber reflects the awareness of Britain's aircraft designers. A few advertisements appearing in India point to the British aircraft manufacturer's readiness to stand by the civil aviation programme.

India was represented at the October conference by a former Director of Civil Aviation but the conclusions reached are not public, and no assurances have followed in regard to this proper encouragement of Indian aviation. Development on the basis of an expanded air force, able and ready to provide civil pilots, underlies the main expectation of special subsidies. Public interest in aviation is reflected in the substantial appreciation over a year in the shares of the only public company operating air services. The Company's annual report issued in December supported early anticipation of prospects and the original link with B.O.A. is rightly viewed as the sustaining factor for the future. Speeding up of military air services across the Atlantic—the crossing from Newfoundland has been done in seven hours—gave additional impetus to discussion of the scope and objects of civil aviation in India. The anxiety developed by British liner companies is not at all peculiar. The New York Central Railroad is thinking of aerial competition and the declaration of future purpose by Mr. Eugene Wilson, President of United Aircraft, should interest many. The side which wins the war (he said) will exploit the airplane as a revolutionary form of transport, to seize and control trade, and it seems likely that airplane will be used by the winning nations to exploit sources of strategic material to its own advantage. This peep into the future can be supported by reference to the Glenn Martin version of a huge cargo plane able to cross oceans as well as Mr. Henry Kaiser's authorised experiments in the construction of transport aircraft. In the Indian view this country would be the halt on the main air routes, and the real or ultimate problem would be one of reconciling international agreements with the requirements of local companies.

Some may well foresee the expansion of well-established British shipping concerns in the field of air transport. Regular services to the Middle East and to Russia are predictable, and

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the main handicap, in the view of most, would be the lack of an aircraft industry here. The only existing factory (under Government control at present) may prove unable to provide the types or numbers desired. Import of planes as capital goods wanted after the war should however be reckoned an important possibility, and much of the advance preparation and discussion referred to is based on that possibility alone. The assurance that foreign concerns would not be allowed to secure dominance in Indian skies is not however a very impressive undertaking today as compared with the detailed assertion of full equality in regard to air transport contained in the declaration from Canberra on January 22 on behalf of New Zealand and Australia. Much that has been written about monopoly requires to be modified in the face of an exclusive claim that has been advanced against the vague and inordinate claims, made mostly by U.S. Republicans who think that supremacy in the air, and on the oceans too, belongs to the U.S.A. Inherent limitations in India should be recognised at once. The lack of oil fuel may not be a large obstacle as compared with the lack of an aircraft industry. The supply of qualified pilots may be adequate in the future, but much depends on the quantum of mail subsidies. Surcharges have never stimulated postal traffic, and restoration of pre-war facilities on the railways, able to offer safety, may give the Indian railways superior competitive ability. Two or three bad crashes of Army transport planes recorded last year could not be overlooked even by the most ardent upholders of air transport.

Departures in air transport in the New World have not received full notice locally. Four-engined flying boats are run under the auspices of American Export Lines. The flying boats wth a top speed of 235 miles have a cruising range of over 6,000 miles so that non-stop inter-ocean services are possible. This pioneering naturally stimulated the major British shipping companies to advance claims. Having large liabilities to ship-owners in and through the war the British Government could hardly overlook the essential justice of imitating America in regard to air transport. Liner companies have duly prepared in a formal fashion, and local repercussions have been referred to already. Essential conditions are far more satisfactory than in Africa which is already a bridge to Europe as well as Australia. Meteorological and other services in India are probably up to the mark in regard to the exigent needs of air services. Most favourable factor is the lack of faith in monopoly in Britain. The Empire Air Mail scheme is required to justify itself fully by operating efficiency. And more strenuous competition with the U.S.A. may lead to direct encouragement of feeder and subsidiary services in India.

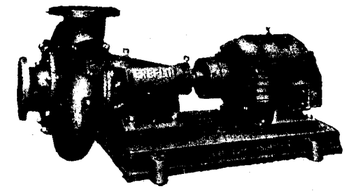
Air travel in war has been made familiar by the journey of Sir Stafford Cripps to India in 1942. The Cripps Mission was an air mission by the future Minister of Aircraft Production, and the impression produced then has survived the failure of Britain to reach an agreement with the politicians in India. The air-borne traveller of high estate has included the Congress President (now in jail) and more recently, the new Commander for S.E. Asia and popular Ministers in the food crisis have done their travelling by plane mostly. They may provide, in part, justification for the hope of extensive and reliable air services. But the main support is derived from the calculation that air-fields built in the war should have a peace time use. Whether made under reciprocal lease-lend or any other programme, the air-fields should be adapted to peacetime uses. The number and range of fields provided for modern warfare can only be conjectured today but the hangars, workshops etc. should be the support of India's aviation services. Whether the standard of living will support the rapid or forced development of air services is a question largely for the future, but enough is being done to place before the public the advantages of air travel. Aircraft manufacturers, notably Mr. Donald Douglas, hesitate to offer specific prophecies as to the development of aviation. Enormous expansion and a limited market in peacetime influence current thinking, but the convertible transport plane has already appeared, and India's choice of both U.S. and British aircraft may be regulated without regard to complications of competition from home manufactures.

The more important lessons of air transport development have been kept to the forefront in all representations to the effect that India should be free to decide without liability for Empire requirements. That view was underlined in all questions asked in the Central Assembly last year, and general awareness of what may follow the war is reflected in the memoranda and articles describing progress in the air while Army air transports' work in the evacuation from Burma showed that lack of roads creates the opportunity for achievement of an exceptional kind.

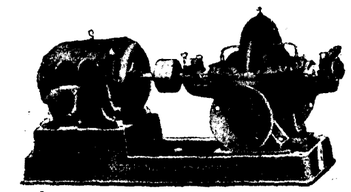
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INDIA'S FOREIGN TRADE DURING THE WAR

A correct study of the important trends of India's foreign trade during the war years with a view to providing an adequate picture of what is happening to our national economy has been made impossible by the exclusion of Government transactions from the statistical publications relevant for the study. The major part of India's transactions with the outside world during the war period has been, and continues to be, carried on by the Government and so the figures available in the Monthly Seaborne Trade fail to indicate the true position regarding India's present trade and future prospects. Yet, despite their imperfection and inadequacy the published figures of India's foreign trade repays attention. Though only a small part of the true picture of India's trade currents are shown to the public, it is not quite difficult to catch a glimpse of where the winds are blowing. More than four years have passed since the outbreak of hostilities, and in modern times four years are long enough period for examining the new economic tendencies at work, here and abroad. The new developments induced by war may last for some years after the war owing to the existence of economic controls everywhere, or a partial relapse to prewar conditions may be felt. Anyway, the question whether wartime developments can survive peace does not lend itself to easy solution particularly in this war; but it is quite possible that our ideas of the transience of wartime changes are exaggerated. A careful examination of the published figures, however scanty and unreliable, if properly and intelligently linked up with the developments noticeable in the different sectors of Indian economy, would greatly help in understanding the net result of war on Indian trade and the probable changes in the immediate future.

GENERAL TRENDS

The course of India's foreign trade (on private account) since 1938-39 is revealed by the following figures:—

(in crores of Rs.)

	1939-40	1940-41	1941-42	1942-43
Exports ..	203.9	186.9	237.2	187.6
Imports ..	165.3	157.0	173.3	110.5
Balance of trade ..	+38.6	+29.9	+63.9	+77.1
Total trade	369.2	343.9	410.5	298.1

The total value of trade has been recording a decline during the first two years. The rise in 1941-42 is followed by a sharp decline again. Exports which had increased from Rs. 162.8 crores in 1938-39 to Rs. 203.9 crores in 1939-40 recorded a severe decline in 1940-41 by 17 crores but rose up to Rs. 237.2 crores in 1941-42. The balance of trade which jumped up from Rs 10.5 crores in 1938-39 to Rs. 38.6 crores in 1939-40, dropped down again to Rs. 30 crores and then spurted up to Rs. 64 crores in 1941-42. On the import side, the trend is more or less the same as in exports but the range of fluctuations has been narrow. From Rs. 152 crores in 1938-39 imports swelled up to Rs. 165 in 1939-40, came down by Rs. 8.3 crores the next year and then reached the high level at Rs. 173.3. During the year 1940-41 restrictions on exchange, export and import, the high freight and acute shortage of shipping contributed a great deal in reducing the quantum and the value of trade. The severe strain on British shipping mostly pre-occupied in the Mediterranean theatre of war and the loss of the French markets were responsible for the severe decline in India's exports. 1941-42 witnessed a phenomenal rise in the value of exports and imports, raising the total trade to Rs. 410.5 crores with an increase of Rs. 34 crores in the balance of trade. The chief factors which brought about the above trends were the increasing military operations in the Mideast and the outbreak of the Russo-German war necessitating large exports from India to Iran, Iraq and through them to the surrounding territories. Forces to compensate for the loss of the Continental markets in 1940 were beginning to be felt early in 1941 and the rapid increase in the purchases of the Allied and Empire countries from India succeeded in working out the much needed readjustment. The activities of the United Kingdom Commercial Corporation accelerated the commercial intercourse with the Mideast and it was in 1941-42 that large exports of Indian cotton piecegoods found markets in East Africa and Middle East Countries. This opportunity to fill up the gap created by the absence of our chief competitors in textile markets had given a powerful encouragement to our textile industry. When Japan entered the war, the countries bordering the Pacific Ocean experienced serious shipping difficulties and hence India's trade suffered a severe setback. The value of exports declined from Rs. 237 crores in 1941-42 to Rs. 187.6 crores 1942-43 and imports came down from Rs. 173 crores to Rs. 110.5 crores. This is accounted for by the sudden fall of Burma, Malaya, the Dutch East Indies, Philippines and other islands. Our exports to Burma in 1941-42 stood at Rs. 12 crores, to Japan at Rs. 5 crores and to Strait Settlements Rs. 4 crores. Besides the loss of these, our exports to U. S. A. fell down from Rs. 46 crores in 1941-42 to Rs. 28 crores in 1942-43 while Canada recorded a decrease from Rs. 6 to Rs. 4 crores in the same period. It was during the same period, that India's exports to U. K. experienced a setback from Rs. 77 crores to Rs. 57 crores. On the side of imports, Japan accounted for a loss of Rs. 12 crores, Burma Rs. 27 crores, Straits Settlements Rs. 1 crore and Australia Rs. 2 crores. The loss of Burma dealt a severe blow at India's foodstuffs situation while the stoppage of imports of oil and timber created considerable difficulties in India. In the matter of mineral oils, Iran has been fastly coming into the picture to take the place of Burma, but the complete stoppage of quinine from the Dutch East Indies has certainly increased the mortality from malaria. On the credit side, it may be mentioned that due to the absence of the Dutch competition, India's tea, coffee, pepper, spices etc., received a valuable fillip. The loss of Japanese markets naturally reduced India's exports of raw cotton in 1942-43 and the difficulties of transport accounted for the reduction under the exports of hides and skins, jute manufactures, and coal. India's yarn was in excellent demand since Japanese yarn was kept out of the field. Tea recorded a decline by Rs. 8 crores in 1942-43 compared to 1941-42 owing to the fact that, with effect from September 1942, exports of tea on private account was prohibited.

DIRECTION OF TRADE

The changes in the distribution of foreign trade generally indicate the changes in the national economic structure. In the case of India, it is often noted in the past that given the perfect freedom, Indian trade tended to flow more and more into non-Empire channels. While this was the tendency during peace time, during periods of crisis to the Empire, India tended to develop closer ties with the members of the British Commonwealth. During the last war, India came closer into the net of Empire trade but after 1920 the tendency to revert back to non-Empire groove was noticeable. The acceptance of the Ottawa principle again shifted the direction inside the Empire orbit, and the present war has naturally woven the inter-imperial links closer than ever before. During the beginning of this world war the loss of European markets induced Indian trade to shift towards the U. S. A., Japan, Dutch East Indies, Australia and other countries on the Pacific Ocean. While the Atlantic was unsafe, trade could get busy with Africa Mid-east, and Australia. When the Pacific zone became perilous after the entry of Japan into the war, the tendency to get closer to the Empire countries, particularly Australia, S. Africa and Canada, was clear. The following table brings out the changes in the direction of Indian trade during the past four years:—

	1938-39		1939-40		1940-41		1941-42		1942-43	
	(in crores of Rs.)									
	Ex	Imp.	Ex.	Imp.	Ex	Imp.	Ex.	Imp.	Ex.	Imp.
British Empire ..	85	89	114	93	117	90	149	106	126	61
Foreign countries	77	64	90	73	70	67	88	68	62	49

While exports to British Empire countries have increased from Rs. 85 crores in 1938-39 to Rs. 149 crores in 1941-42, the imports have risen up from Rs. 77 crores to Rs. 88 crores during the same period. There has been an increase of Rs. 64 crores on the export side and Rs. 17 crores on the imports side. The decline in 1942-43 compared to 1941-42 has been caused by special factors as mentioned before. The exports to foreign countries mostly accounted for by U.S.A., the Middle East countries and Russia, could increase only from Rs. 77 to Rs. 88 under exports and Rs. 64 to Rs. 68 under imports and the year 1942-43 registered a fall as noticeable under Empire countries, the exports falling to Rs. 62 crores and imports to Rs. 49 crores. That the importance of the Empire countries had been increasing gradually can be clearly seen if the figures for 1942-43 are compared with 1939-40. There has been a reduction of exports by Rs. 28 crores and dwindling of imports by Rs. 24 crores under the account of foreign countries while, as a sharp contrast, the offtake of British Empire has increased by Rs. 12 crores. The imports from foreign countries increased during 1939-40 but came down in 1940-41. The rise registered in 1941-42 was again followed by a steep fall in 1942-43.

The growth of trade with individual Empire countries is indicated in the following table:

	1938-39		1940-41		1941-42		1942-43 (Re-exports included)	
	(in crores of Rs.)							
	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.
U. K.	46	56	26	65	37	77	30	57
Burma	24	10	29	16	29	12	15	—
Ceylon	1	5	2	7	3	10	4	14
Australia	2.4	3	2.5	7	5	12	3	16
Canada	1	2	3	3	7	6.5	5.5	3.8
South Africa	0.4	1.5	0.8	3	1.2	5.9	2.3	19.5
Other countries	12.9	8.1	16.9	14.6	23.2	25.9	14.5	25.3
Percentage of total trade	53.1	52.4	57.3	62.4	61.0	62.7	55.8	67.1

The rapid growth of Empire markets is clearly brought out by the export figures. From Rs. 56 crores in 1938-39 U.K's share in India's exports increased to Rs. 77 crores in 1941-42 though the year 1942-43 recorded a decrease. Owing to the shifting of British peace time industries to war work, the decline in the imports of British manufacturer had been pronounced resulting in a fall under imports from Rs. 46 crores in 1938-39 to Rs. 30 crores in 1942-43. Indo-Burmese trade also showed remarkable growth till the Japanese overran the territory in April 1942. We have been sending increasing quantities of foodgrains to Ceylon, while our exports have jumped up from Rs. 5 crores in 1938-39 to Rs. 10 crores in 1942-43 our imports increased from Rs. 1 crore to Rs. 4 crores during the same period. Phenomenal rise in India's exports to Australia is clearly shown by the fact that from Rs. 3 crores in 1938-39 India could increase her exports to Rs. 16 crores in 1942-43. This is mostly caused by huge exports of Indian piecegoods to that country. Trends of Indo-Canadian trade record a greater rise in the import side than in exports. With regard to the effect of war on Indo-British trade, it can be seen that though our imports from U. K. has recorded almost uninterrupted decline, she remains the largest source of our imports even to-day and the biggest market for our raw materials and foodstuffs. India increased her exports to the U. K. from Rs. 56 crores in 1938-39 to Rs. 77 crores in 1941-42 which declined to Rs. 57 crores in 1942-43.

COMPOSITION OF TRADE

The published figures also clearly bring out certain important changes that have taken place in the composition of India's trade. The following tables classify the trade from the point of view of foodstuffs raw materials and manufactures articles:-

EXPORTS (Rs. crores)

	1938-39		1939-40		1940-41		1941-42		1942-43	
	Rs.	% of total	Rs.	% of total	Rs.	% of total	Rs.	% of total	Rs.	% of total
Foodstuffs ..	39	23	41	19	42	21	60	24	49	25
Raw Materials ..	76	45	92	43	68	34	73	29	45	23
Manfd. Goods ..	51	30	79	37	86	43	115	46	98	50

IMPORTS (Rs. crores)

Foodstuffs ..	24	16	35	21	24	15	28	16	8	7
Raw Materials ..	33	22	36	22	42	27	50	29	52	47
Manfd. Goods ..	93	61	92	56	90	57	94	54	49	45

Four distinct trends are noticeable (1) the export of raw materials has declined from Rs. 76 crores in 1938-39 to Rs. 45 crores in 1942-43. Though the year 1939-40 alone records an increase to Rs. 92 crores, yet the percentage of raw material exports to total exports have been coming down from Rs. 45 to Rs. 23 crores (2) Exports of manufactured goods have gone on increasing from Rs. 51 crores in 1938-39 to Rs. 115 crores in 1941-42 and even during 1942-43 where there was a decrease, the level reached was Rs. 98 crores,— nearly twice the figure for 1938-39. Manufactured goods accounted for only 30% during the prewar year but steadily rose up to 50% in 1942-43. (3) On the import side, raw materials indicate a rapid increase from Rs. 33 crores to Rs. 52 crores showing that industries had received a powerful fillip as a result of the war. It is satisfactory to find that raw materials accounted for 22% of our imports in 1938-39 but swelled up to 47% in 1942-43. (4) There has been a rapid decline in the import of manufactures from Rs. 93 crores to Rs. 49 crores, mostly because India's suppliers were engaged in their own war effort and the shipping position was precarious. The above four indications suggest that India has been making the best use of her raw materials, has been fastly industrialising and trying to capture foreign markets by exporting manufactured goods. It should be remembered, however, that the figures given above do not represent a corresponding increase or decrease in the quantum of trade. The high prices, both in India and abroad, to a great extent mask the real magnitude of exports and imports. It is quite well known that, though imports of raw materials have increased, the encouragement has been mainly confined to a few select industries only and not distributed over a wide sector in India's economy. The textiles, tea and jute groups no doubt, benefitted by the war but the key industries have not flourished as much as they ought to have. It is the peculiarity of India's present-day war economy that the very boom in exports is calculated to increase the sterling balances and hence create inflation within the country with all its evil consequences on the population.



Exports were allowed at the expense of internal needs in several cases and hence one should be cautious in inferring from the above trends that all is getting on well with India. A casual glance on the trends of foodstuffs shows that the imports declined from Rs. 24 crores in 1938-39 to Rs. 3 crores in 1942-43 while exports from India had increased from Rs. 39 to Rs. 49 crores and during 1941-42 the figure was as high as Rs. 60 crores. Though the loss of Burma accounts for a drastic fall in imports of rice, the policy of exporting grains when India's millions were starving, has been condemned by the public. The figures are significant that India's food situation was rapidly deteriorating since 1939.

TRENDS OF COMMODITIES

If the trends of important commodities that enter the export and import schedules are examined, we get a clearer glimpse of India's reaction to the exigencies of the war. The following table shows the changes in the value of the important commodities including India's seaborne trade:—

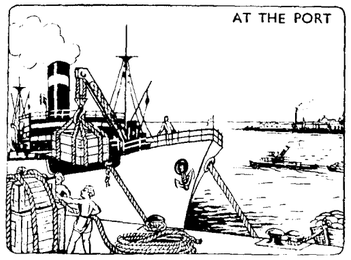
IMPORTS
(In lakhs of Rupees)

	1938-39	1940-41	1941-42	1942-43	Increase or decrease over 1941-42
Grain, pulse & flour	13,76	14,35	15,02	31	—14,71
Sugar	46	36	1,08	2	— 1,06
Oils, vegetables, mineral & animal ..	15,62	21,03	21,85	27,78	+ 5,93
Cotton, raw & waste	8,51	9,43	15,34	15,42	+ 8
Wool, raw	62	2,79	2,77	2,95	+ 18
Chemicals, drugs & medicines ..	5,62	8,07	8,76	6,39	— 2,37
Dyes & colours	4,06	6,37	6,96	5,42	— 1,54
Machinery	19,72	11,83	13,73	10,53	— 3,20
Cotton (yarns & manufactures)	14,15	11,35	6,79	1,37	— 5,42
Exports (including Re-exports)					
Grain, pulse & flour	7,30	6,02	10,70	7,12	— 3,58
Tea	23,29	27,79	39,60	31,68	— 7,92
Oils, vegetables mineral and animal	1,36	2,46	2,68	1,44	— 1,24
Seeds	15,10	10,06	10,57	10,57	
Cotton, raw & waste	24,32	24,60	17,90	5,58	—12,32
Jute	13,49	7,85	10,42	9,01	— 1,41
Hides & Skins, tanned or dressed and leather	5,28	5,99	6,03	4,82	— 1,21
Metals	2,07	5,27	4,23	1,90	— 2,33
Cotton (yarn & manufactures) ..	7,57	17,52	38,00	46.86	+ 8,86
Jute manufactures	26,26	45,38	53,90	36,38	—17,52

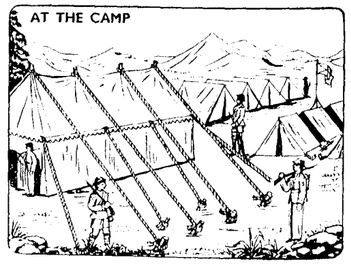
During the period from 1938-39 to 1941-42 imports of grain, pulse and flour, sugar, oils, cotton, wool, chemicals and dyes have increased while the year 1942-43 found drastic decline under grains, sugar, chemicals and dyes. The import of raw and waste cotton, wool, and oils have kept up their upward move. The decline under machinery from Rs. 20 crores in 1938-39 to Rs. 11 crores in 1942-43 is noteworthy. Cotton yarn and manufactures have slipped down from Rs. 14 crores to Rs. 1.37 crores. The loss of Burman rice explains the course of grains and oils. The growing industrial activity in India necessitated increase in imports of oil particularly from Persia. The initial years of the war did not find the Indian sugar industry in a comfortable position and the increase of sugar imports till 1941-42 only points out that the indigenous industry could not expand quickly to meet the special situation. Actually, there has been surplus production in 1942 and hence there has been a fall under imports. The increase under cotton yarn is taken to mean a corresponding encouragement given to indigenous industry. It is to be remembered, however, that with effect from March 24, 1943, the Government have introduced strict control over the imports of Egyptian, Sudanese and South African cotton. The decline in the imports of machinery is variously interpreted, some explaining it as the inevitable consequence of the preoccupation of our usual suppliers, some emphasising transport difficulties but it is well-known that imports of machinery for India's key industries have been positively discouraged by the Government. Such of the machinery as were imported entered India only to encourage production directly connected with war effort, particularly the textile industry. The benefit of machinery imports has been strictly confined to a few industries only and not spread over the Indian industrial structure as a whole. Owing to warwork there has been an increase under chemicals and vehicles. On the side of exports remarkable expansion is shown under cotton yarn and manufactures, tea and jute manufactures. Seeds and raw cotton have experienced an almost uninterrupted decline from Rs. 15 crores to Rs. 11 crores while hides and skins recorded greater stability during the period as a whole.

A study of India's foreign trade during the past four years of war from the point of view of balance of trade, composition of our exports and imports, the distribution of trade, etc., shows that the effect of war on Indian economy has not been as beneficial as expected. While there are indications that in certain lines Indian industrialisation has received a powerful fillip, the main gaps in Indian industrial structure still remains unbridged. Certain trends observable in India's foreign trade during the prewar years have been reversed during the war period; for instance, there has been a declining tendency in the course of India's balance of trade in the pre-war years and India's trade with the British Empire countries had been dwindling. The war has necessitated the increase of India's balance of trade and the Empire trade has assumed great importance now as a result of military operations in Europe and the Far East. The prosperity enjoyed by our jute, tea and cotton industries before the war has been intensified. It has to be remembered that the controls instituted by the Government of India on exports, imports and foreign exchange have not been conducive to rapid expansion of industries. There has been a greater control of imports than exports and the unhelpful interpretation given to 'military requirements' has denied India the valuable opportunities afforded by the war. The galloping inflation caused by heedless accumulation of sterling and the severe shortages of articles required for civilian use have resulted in great national distress. There is no doubt that part of the increase in exports has been achieved directly at the expense of urgent civilian needs. One has only to compare how Australia and Canada fared during the war to know the serious handicaps under which India had to labour during the recent years. India's war economy has not been planned and built up by a Government responsible to the people; it has been shaped according to the convenience of U. K. and other Allied Governments and very often India was found unprepared for sudden events developing on the East or West. It is too early to say if the wartime changes in India's trade are merely transitory or permanent. It is, however, more or less certain that our relations with the U. K. have to be reorganised on a different basis. India has now become a creditor and U. K. may be called upon to export capital goods instead of consumers' goods in postwar years. India's trade relations with U. S. A. and the Empire countries have become very close and it is expected that the U. S. A. will play a vital part in helping India's postwar reconstruction.

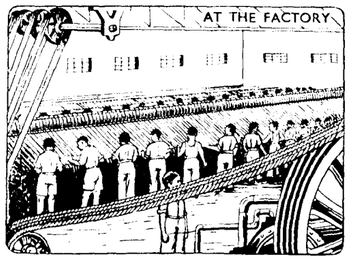
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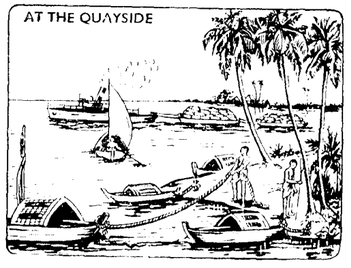
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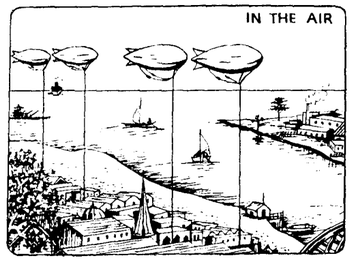


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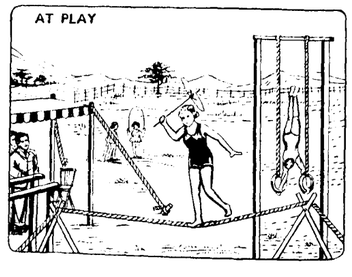
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THE RAILWAY BUDGET

The Railway Budget presented to the Assembly on February, 1943 by the Hon. Sir Edward Benthall had features which brought out the appropriateness of the change in the designation of his office to that of the Member for War Transport. The completely altered look of railway finances, the prospect of repaying the withdrawals from the depreciation fund and paying the general revenues more in the current year than are due to them under the Convention. and the emergence of the problem of a tentative revision of the convention in respect of the allocation of surplus, all these, as also the terms in which Sir Edward has advanced the claims of the Railwaymen to the gratitude of the nation, showed that more than the general budget, the Railway Budget bears the full imprint of the current war. Comment on the record of the Railways during the years in question and the issues posed before the Legislature, by Sir Edward Benthall in the Assembly and by Sir Leonard Wilson in the Council of State, is apt to be misconceived if the problem were to be judged merely on the basis of a more or less pleasant array of figures representing the financial results of the working of the Railways. The initial reaction to surpluses of over Rs. 36 crores, both for the current year and the year to come, may be one of unreflective and uncritical satisfaction, especially as, since the beginning of the Great Depression and till recently, Railway finances had a seemingly endless run of bad luck. The problem whether more or less relief should be given to the taxpayer out of these surpluses, whether the Railways should not provide for the bad periods which they left behind not long ago, this problem is in danger of being regarded not in the context of the economic conditions in the country, of which the Railways and their finances are but a part, but as a mere draft on the equanimity of our legislators and of the country in the face of the embarrassment of sudden riches.

Before deciding the question of the best way of apportioning the surplus or revising the convention on a permanent or tentative basis, it is necessary that the nature of the improvement in the Railways should be understood as clearly as the complexity of the economic factors and forces now at work render it possible. In the first place, it stands to common sense that so sudden and so complete a change in Railway finances. which could be readily understood in the condition of a boom in world trade or a very considerable increase in the volume of internal production and consumption, should, in the present conditions of atrophied foreign trade and scarcity in most classes of consumer's goods, need special explanation and special effort at understanding. According to Sir Edward the prosperity of the Railways "has been earned not as in other industries by a heavy increase in the price of what we offer, transport, but mainly by making the best of available equipment." Sir Edward would have exposed himself patently to the charge of suppressio veri if he had not prefaced the above with the observation that this "unparalleled activity and prosperity of the Railways is illusory." There can be no doubt that the Railway Administration from the General Manager to gangman have been subjected to the severest strains on various accounts and that for the resolute efficiency with which they have carried on the country's appreciation is due. But what Sir Edward has aptly termed the illusory character of the prosperity must be properly apprehended and its implications for future policy clearly understood if it is not to leave anything behind except a transitory sense of exhilaration.

As we have hinted already, a surplus in the Railway Budget can be a matter for genuine satisfaction only when it represents a fraction of the nation's production of values during the year which is not absorbed in current consumption. An analysis of the origin and nature of the surpluses shown in this year's Railway Budget suggests that they can hardly be said to be of this nature Firstly, while Sir Edward has disavowed the intention of effecting further increases in rates and fares so as to avoid an accentuation of the inflationary forces, the fact remains that the surpluses are due in part to the increases in rates, part of which is of the veiled kind, as in the case of goods going as parcels on account of the difficulty of booking the former. The causes of the increase in revenue have been summarised by Sir Edward as below: "The causes are increase in military traffic and upper class passengers, withdrawal of reduced rates and third class fares quoted by certain railways in the past to meet road competition, increase in the basis of fares on the North-Western and East Indian Railways, withdrawal of concession fares, additional charge on parcels and luggage, involving an increase from 2 annas to 4 annas in the rupee, withdrawal of special goods rates, imposition of additional charge of 12½ per cent on fodder and food grains booked in small consignments." To these have to be added the virtual increase in fares which may be said to have occurred when persons are obliged to travel by a higher class for lack of accommodation in the class to which they are accustomed. It is not possible on the basis of the data to hand to determine the extent to which the additional sacrifices made by the community in the shape of higher charges have contributed to the increase in revenue. But it is certain that it would be a considerable part of the normal budget.

The sacrifices made by each individual user of the Railways may perhaps rank as a genuine surplus out of current income. But in so far as Railway revenues can be accounted for by the movement of goods or passengers on war account the increase must be deemed to be of the unreal and illusory kind. The surplus in the Railway Budget is made possible by the large-scale military expenditure, which comes out of the General Budget which is fed by inflation and to which the Railway surplus makes a contribution. The finances of the Central Government which are fundamentally sound and which can be made even sounder if the importance of sound political policies were only recognised, rest, in the present conditions on an inflationary policy in the sphere of currency. The Railway surplus is much in the nature of froth worked up on the top of a watered currency.

The most important fact about the railway surplus is its illusory character, that is, from the standpoint of economic realities. While this fact is important in considering how best the surplus can be utilised, its immediate effect on the technical financial position of the Railways cannot be overlooked. The year 1941-42 realised a surplus of Rs. 28.08 crores against the revised estimate for the year of Rs. 26.20 crores; and as a result, the general revenues received Rs. 20.17 crores against an expectation of Rs. 19.12 crores. Likewise, the current year is now expected to close with a surplus of Rs. 36.28 crores against the original estimate of Rs. 27.95 crores. According to the proposals of the Government, the general revenues will receive the originally expected amount of Rs. 20.13 crores though, owing to the larger payment in the previous year, the liability to the general revenues for the current year has declined to Rs. 17.77 crores.

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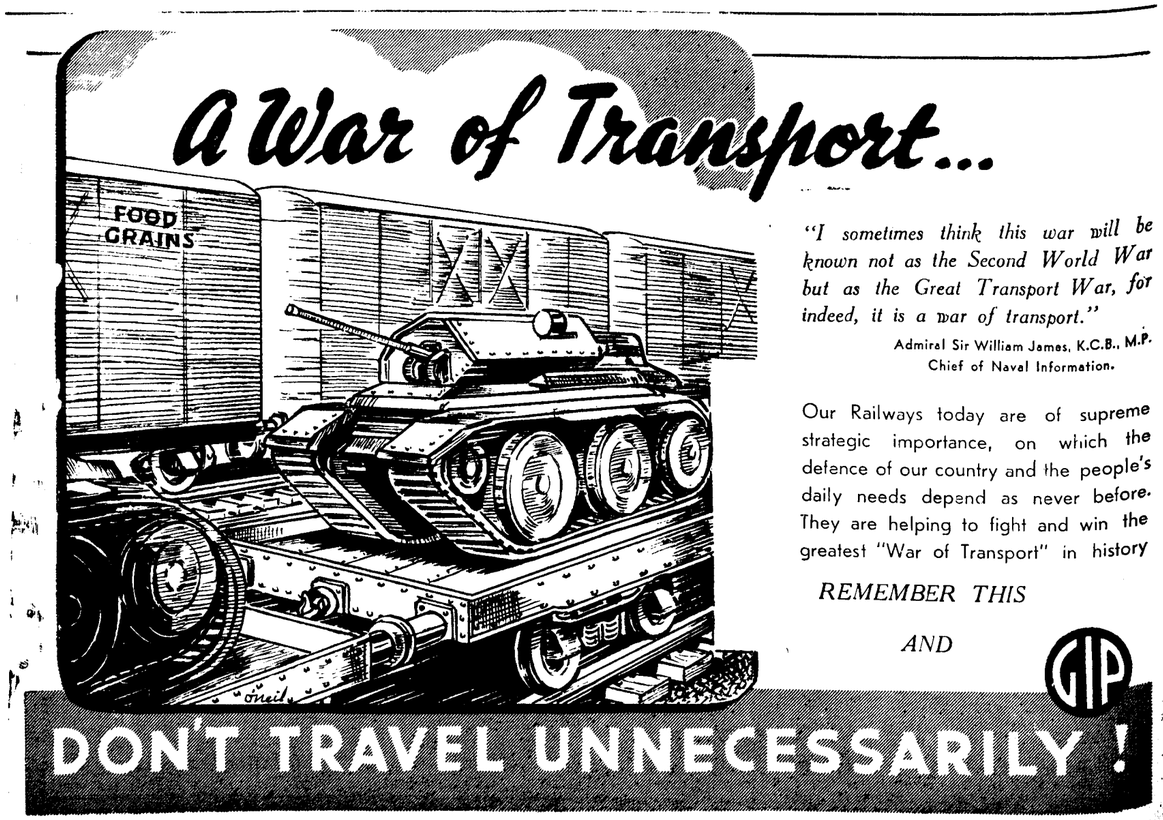
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On a three to one basis of division of the surplus between the general revenues and the Railways, the former will get for 1943-44 an amount of Rs. 27.10 crores which includes a profit of Rs. 29 lakhs on the strategic railways. Besides the contributions to the general revenues, there is the astounding fact that by the end of the current year all loans from the Depreciation Fund and all arrears to the general revenues will have been paid and there will be a further accretion to the fund of Rs. 7.97 crores. If it is remembered that the liabilities of the Railways accumulated during the depression in respect of the Depreciation Fund and General Revenues, amount to over Rs. 65 crores, it will be appreciated that the prosperity of the Railways is not to be despised, even if it is only a by-product of the colossal military expenditure.

The problem of the utilisation and allocation of the Railway surplus of over Rs. 35 crores for 1943-44 should not be thought to be unimportant or immaterial merely because the surplus has been made possible by military expenditure which, in its turn, rests to a large extent, on inflation. Inflation is a phenomenon from which the whole country suffers equally, though the advantages following directly or indirectly from it are distributed with marked inequality. Of the war expenditure that has made the Railway surplus possible, only a few in the country are the beneficiaries, apart, of course, from the security which is afforded to all. Likewise, the relief from the higher burden of taxation, which would have resulted if inflation were not resorted to, is enjoyed only by those on whom a heavier burden could be laid. It will be clear from this that the soundness of Railway finances is the only indirect advantage of inflation and military expenditure which the nation as a whole can enjoy in the future when the aftermath of inflation will be felt as keenly as when it rages. In this respect, the contribution of military expenditure and war orders to Railway revenues and the Railway surplus is in singular contrast to the other benefits, flowing from them, in that the latter are conferred on sectional interests, sometimes on individuals. It is necessary therefore that the surplus should be so utilised that its benefits will be reaped by the whole country, and not only in the present, but also more or less permanently in the future.

Having fixed this as the criterion of wise utilisation of the surplus, we may proceed to examine the proposals of the Government in this regard. These proposals are that the Railways "should be freed from the burden of a Convention which involves contributions to general revenues, even if there is no surplus"; that the relative clauses of the Convention should be, not merely suspended, but abolished; that the revision of the Convention should not be taken in hand until it is possible to foresee, with greater certainty than is possible during a world upheaval like the present, the future trend of railway earnings and that from 1943-44 the question of allocation should be considered each year in relation to the needs of general revenues and Railway finance and that for the coming year the surplus should be divided between the two in the proportion of 3 to 1. It must not be forgotten that relief to the general revenues does not mean relief to the country as a whole. The Railways are the property of the nation; and the nation cannot be served better than by ensuring the value and serviceableness of its property. It is said that the taxpayer is entitled to relief in a time like the present, if only because the surpluses arise "to a large extent from the expenditure incurred from general revenues." But the expenditure has been made possible less by heavier taxation than by additions to currency, the privations of which are suffered more by the poor classes than by distinguishable classes of taxpayers. The claim of the general revenues on the Railway surplus can be based on one of two grounds, one that the taxpayer is the proprietor of the Railway system and, two, that the railway surplus is made possible by Government expenditure. Neither of these arguments would be an accurate representation of the facts; for the taxpayer, in the sense relevant to this context, is not the whole country and Government expenditure is not made possible by taxation alone.

Strictly speaking, such arguments as we have put forth should not be needed in support of the view that the primary purpose of the Railway surplus should be to strengthen the financial soundness of the Railways and to provide against depreciation of the property. That would be a proposition of self-evident validity in any business; it is because extraneous considerations are allowed to creep in through various misconceptions, that we have had to labour the point. The adequacy of the Railway Depreciation Fund has never been above question; for, the scientific estimate of the proper contribution to Depreciation has always been shelved. The repayment of loans from the Depreciation Fund should not, therefore, be regarded an occasion for taking this crucial question for granted. Particularly because, as it is accepted on all hands, the Railways are being strained to the utmost during the present time, and no one can be in a position to estimate the extent of the demand which repairs and renewals will make in the post-war period.



POST-WAR EDUCATION IN INDIA

ECONOMIC AND FINANCIAL ASPECTS

The problem of education may seem at first sight an irrelevance in a Supplement devoted to India's economic development in the post-war period. But an examination of the economic aspects of the education problem in India will serve the double purpose of conveying to foreigners an idea of the immensity of our national problems and illuminating, for our own benefit, a realistic approach to the problem of our economic development. Foreign opinion is naturally based on vague generalisations, framed more in the light of accepted economic theories than in deference to the facts of life in India. They are singularly unhelpful both for forming ideas of the kind of life which the public wants the average Indian to live in the future and for making quantitive estimates of the material requisites of our national well being. In education, these two meet together and blend in a way they do not in any other of our great national problems. For, not only is education a matter of the mind and the spirit, but a national system of education requires men and money and books and buildings. It has to envisage types of individuals and aims of social development. It has to deal with all the barriers we have encountered in our economic and political development and surmount them, of necessity. It is for this reason that a plan for educational development in the post-war period will be useful for conveying to foreigners more precise ideas of our economic needs and aspirations and for providing for ourselves a sort of clue with which we can feel our way in the labyrinth of our economic problems. Education is in many respects a good starting point in mapping out the various lines of economic development in the future. For the beginning and the end of economic developments alike lie in a better life for the people of the country. It is the beginning because economic development is impossible without better men, and meaningless, if it does not add to well-being. Indeed, not only in industry where instruction and training are obviously necessary, but also in agriculture, progress is inconceivable without some efforts to enable people to respond to a drive for better methods of cultivation and of marketing. In the special conditions in India to put education first and foremost in a plan for post-war economic developments is not to subordinate non-economic to economic ends.

The points at which the educational plan touches the larger economic plan are, indeed, numerous. The objectives of the educational plan being the liquidation of illiteracy, the provision on an adequate scale of facilities for higher education, and the training of youth for the vocations of life, it has necessarily large implications for the natural economy. It entails raising a large force of teachers of all grades, the provision of buildings, paper, books and materials of various kinds, the maintenance of institutions for technical and vocational training on the scale and in the manner suited to the future economic development of the country. The plan for national economic development has to be more closely cor-related to the educational plan, than to any other part of it. Economic development, particularly on the industrial side, is conditioned by the progress of literacy, and, even more, by the output of skilled technicians which the educational authorities are in a position to promise. Likewise, it would be meaningless, even dangerous, for the latter to provide for the training of technicians of various grades and kinds without a reasonable assurance from those in charge of economic development that there will be scope for the employment of such ability in remunerative occupations. This is true of agriculture, not less than of industry, of small scale manufacture not less than large scale industry. Agricultural colleges would be a waste of public money if the State does not facilitate the adoption of scientific farming by removing the obstacles to it, if necessary, by legislation, and the exercise of appropriate statutory powers. It is not as widely realised as it should be that the chances of industrial development lagging behind and starving skilled technicians through lack of employment are about the same as the chances of industry being forced to slow down by the failure of the educational system to turn out technicians of the requisite number and quality. This by itself should form a decisive reason for the educational plan and the larger plan of national economic development being brought, by appropriate changes at various stages in either or both, into perfect accord.

The work that has so far been done in this sphere of educational planning has been determined more or less purely by educational considerations. The idea that it is the task of the educational authorities to provide the economic organization of the country, particularly on the industrial and commericial side, with the proper personnel, adequate in numbers and in quality, has been remembered mainly because the provision of particular types of training is accepted by all educationists as an essential and vital part of any sound system of education. Vocational training in the lower forms is valued less for the sake of its ability to ensure the young pupils a means of livelihood than as affording a training to the hand and the eye without which the training of the mind, which is the traditional function of education, is bound to be lop-sided and unreliable. Likewise, technical training in the higher reaches, particularly the development of engineers and workers in the field of scientific research, is an important branch of any system of higher education. Knowledge gains its precision only in the sphere of science and its practical application to the tasks of life. While sound planning in education has to provide for vocational training in the lower forms and the training of technicians of higher grades, a national system of education cannot function smoothly and efficiently in this regard, unless its authors are able to envisage with some clarity the probable demand for the various and different types and grades of technical attainment and equipment. The plan that has been formed for the liquidation of illiteracy in India and the building up of a national system of education has unfortunately preceded the clarification of ideas in regard to the economic development of India in the post-war period. Till now in India, lack of employment and lack of trained men have been mutually aggravating factors. And to the extent that the war has created new industries and has caused Government to provide technical training for large numbers of men, the vicious circle may be said to have been broken.

The plan of post-war educational development prepared by Mr. Sargent, the Educational Commissioner to the Government of India, has been drawn up with full recognition of the importance of technical training and the facilities therefor. Generally speaking, the old idea that the Primary and Middle Schools are only preparatory stages for the High Schools and the High Schools for the University Courses, which are heavily biased in favour of the art courses, has been abandoned. Instead, the place of research and technical attainments of a higher order in University courses of study has been recognised and provided for. Each stage of school education is to be regarded as complete in itself, in the sense that it will fit the pupil on leaving school for entering life. And in the High School stage, two types of schools are advocated, one the High School which will prepare students for University courses of study and the other, technical schools which will enable students, on completion of the course, either to undertake jobs or to qualify for higher places by taking further specialised training for two years. Even the basic schools in their primary and senior grades attempt to fit the pupils better for some vocation than our schools have so far cared to do.

But close correlation between educational development and economic development is still too much to ask for. It is obvious that training approved by technical schools must be related to the kind of industrial development that may be expected in each area, and the kind of ability that is likely to be in demand. For this purpose, it would be necessary for the authors of educational planning to obtain some indications of the industrial and economic development which may be expected as a result, firstly, of the trends and developments of the war period and, secondly, of the policies which the Government may be inclined to follow. This necessary guidance, it is to be hoped, will be afforded to them so that they can fill in the details in this regard in the plan now drawn up. It is for the Central

Advisory Board of Education to insist that the Post-War Reconstruction Committee, at whose instance the plan has been prepared, should indicate to them the nature of economic policy and economic trends in the immediate post-war years.

But the plan for post-war educational development, if it is inevitably defective in the matter of correlation to economic development, is adequate for enabling us to appreciate other economic aspects of the educational problem. It enables us to realise its enormity in every aspect of it. First and foremost, we are confronted with liquidating an 85 per cent illiteracy in a population of 400 millions. We require a teacher force of two millions, of which 180,000 have to be graduates, to teach a school-going population of 52 millions. The present capacity of Indian Universities has to be doubled. And since educational development is impossible to attain except with a proper school medical system, we have to provide for 7,500 School Medical Officers and 15,000 nurses to run an efficient school medical service.

Thus, the direct effects of the educational plan on employment, so far as teachers and doctors are concerned, can be gauged clearly from these figures. They represent, however, the needs as they will be when the scheme will begin to operate in full force. But it will take 40 years for India to reach that stage and the progress of the scheme has, doubtless, been worked out for the various stages. What must be noted in passing, as of great importance not only to the educational plan but to planning in regard to every one of our national problems, is that even in respect of teaching, which one is apt to suppose can be done by every one with the necessary general education, progress is conditioned by the number of teachers that it is possible to get ready. If the availability of teachers is so serious a limiting factor that we cannot hope to abolish illiteracy before the end of forty years, one can well imagine how much more rigorous should be the effect of lack of technicians on industrial progress. The authors of the educational plan have been able to map out their needs of personnel and provide for the maximum possible output of teachers at every stage of the progress of the plan. But for other kinds of ability which the educational system has to produce, they have perforce to depend on other parties for the necessary guidance. We would suggest a special committee of an indubitably expert kind for the study of occupational distribution of population, and the extent and manner in which various industries and vocations may be expected to reduce the large percentage of the population which now manages to exist on agriculture. Without such a study properly related to trends and plans of economic development in the post-war period, the idea of providing for large numbers of young secondary or high school education complete in itself will be chimerical. Either the new education will be indistinguishable from the meagre, lettered education of the present day or training will be given of the kind for which the locality or area concerned may not provide the necessary economic demand. It is only if work of the kind indicated here were taken on hand that education may prove to be the starting point of economic planning.

We may now turn to the financial aspect of the educational plan. As Mr. Sargent was careful to make clear in a Press Conference, his scheme was formulated with an avowed freedom from all obligation to consider our financial resources. Ends, not means, were his sole concern, financially speaking. And no one will need to be told that, if Mr. Sargent had been asked to look now and again into our empty pockets, not only the country will remain illiterate, but we would be ignorant of what could be done about it, if we could improve our resources. The result of this freedom from financial considerations is that Mr. Sargent has produced a scheme which when it comes into full operation will cost the country Rs. 313 crores annually, of which Rs. 277 crores will have to come out of public funds. Compare this with the 30 crores now being spent and the 17½ crores annually from public funds, and you get an idea of the leeway that has to be made up. It is easy to be scared out of sanity by the educational bill presented by Mr. Sargent. But one must remember that we are asked to increase our outlay on education by 10 times within a period of 40 years. If the national income should increase as much in four decades, the worst Philistine would see nothing wrong in expenditure on such a scale. Men with a better sense of values would not insist on national income exactly keeping step with the expenditure on education. But whatever the ratio, it is certain that the outlay on education and the national income will advance together and that the former may well be expected to lag behind the latter to grow.

Nevertheless, increased outlay on education immediately after the war must offer special financial problems of its own. It is often thought that expenditure on social reconstruction must be primarily a provincial responsibility though the allocation of revenue between the Centre and the Provinces is such as to exempt the latter from shouldering the responsibility. Others therefore direct their thoughts to a revision of the basis of this allocation so as to give the Provinces more of the elastic sources of revenue. But at bottom, the question is one of taxable capacity; and it would be unreasonably optimistic to expect that taxable capacity can be improved sufficiently to yield sufficient state revenue for purposes of national reconstruction. One is therefore left with loans as the only means of securing appreciable progress. The exact method of financing social reconstruction can neither be predicted nor examined adequately before-hand. But considering the limitations of the position, it seems certain that quite unorthodox ways of financing such schemes will have to be adopted, if we are not to be content with tinkering with the problems. And among such unorthodox ways, the suggestion that for the first few years of the post-war period, social reconstruction should be financed through the expenditure of fiat money is in many ways the most interesting and not more visionary than the others.



WANTED—A ROAD PLAN FOR INDIA

The heavy strain imposed by the war on our transport system has revealed the utter inefficiency and inadequacy of our roads. Events are moving fast and the war effort and national economic mobilisation have to be speeded up. India is the arsenal of supply to different war theatres and has to serve as a base of operations against the Japanese now entrenched in Burma. Large armies have to be moved to and fro and war materials have to be sent in ever-increasing quantities to different strategic centres. The recent raids on certain Indian towns have revealed that all precautions should be undertaken to facilitate civilian evacuation on a mass scale in certain areas. Our railway system is exposed to sporadic bombing by the enemy. The dangers attending coastal trade underline the urgency of a good road system capable of serving all emergencies. Expansion of railway system is now out of the question because of the difficulties in importing or manufacturing rolling stock locally. The food crisis has clearly demonstrated how dearly India had to pay for neglecting her vital transport system. The increasing tempo of inflation indicates the persistence of high prices and if the price levels in different provinces are to be equalised the transport system should be thoroughly and immediately overhauled. The requirements of the military as well as the civilian population emphasise the urgency of a planned drive to develop the road transport even before the war is over.

There is no doubt that in the past we have neglected the roads and sustained national loss. If it is contended that when the war started India's industrial and agricultural potentials were low, the situation on the transport side of our national economy was no less disheartening. Referring to the lack of an efficient road system the Hon'ble Mr. R. H. Parker, President, The Indian Roads and Transport Development Association, Ltd., says,

"In India there are to-day huge areas totally devoid of any lines of communication. There are areas with tremendous agricultural possibilities for the growing of all sorts of crops, which are now lying fallow except for the bare cultivation necessary for the needs of the people living there. India is thus being held back while the rest of the world progresses. How appallingly few are the roads in some of the areas served by the great waterways will be evident from a brief study of India's road map. For hundreds of miles do rivers like the Godavari flow through rich soil, the produce of which cannot reach the market it deserves for lack of road facilities.

"More than half of the perishable produce of India runs to waste on account of delay in reaching the market consequent upon the limitation of transport. Improved roads which mean faster and larger transport facilities, particularly with the use of motor lorries, could convert this waste into wealth. Fast transport is also of the utmost importance to staple industries such as cotton, especially when it is a race to get the crop into the factory before the rains or to make delivery by a promised date."

The Bombay Economic and Industrial Survey Committee (Sir P. Thakurdas Committee) of 1940 revealed that the economic development of Bombay has been arrested for want of transport facilities connecting production and consumption centres. They pointed out that 40 to 75 per cent of the area in certain districts are not served by roads at all and that in certain other districts 70 to 80 per cent of the villages are totally cut off from outside communications during the monsoon. This sorry state of affairs should not be allowed to continue any longer. It should be recognised that roads constructed to serve the needs of war can form an excellent basis for the post-war economic development of India. When the war is over thousands of military lorries and cars will be diverted to civilian use. Mechanics who have been trained during the war period will have to be profitably employed. Lakhs of soldiers would return from different fronts seeking to be employed. The need for a road development plan to answer the demands of demobilisation is therefore urgent. War, it is believed, is rapidly coming to a close and hence India has to draw up a comprehensive plan of road construction.

Therefore, while roads are vital to winning the war they are no less important for winning the peace. Already there are schemes of industrial development of different areas ready to be put into operation. The accumulation of sterling balances indicate that the post-war chances of industrialisation in India are very bright. How can the distribution of industries be arranged to our best advantage when roads are woefully inadequate? The exploitation of India's mineral resources should not be delayed for want of cheap transport facilities. It is well known that lack of marketing facilities has been a great stumbling block preventing the development of numerous small-scale industries and rural handicrafts. The exploitation of the cultivators by middlemen has been not a little responsible for poverty of the rural masses. If villages are closely linked with each other by good roads the bargaining capacity of the cultivator would increase and the springing up of adequate number of markets would offer alternative channels for selling his products. Better roads mean saving of time and this by itself would increase the sale of the agricultural products. At present Indian villages are badly served by roads and unless they are intimately connected with towns and cities there is little likelihood of the rural folk playing a useful part in modern democratic life. Medical men have often shown that without good roads epidemics cannot be tackled successfully and that the dust nuisance is causing virulent diseases. The educational authorities are aware that their schemes of rural educational development can be a success only if villages are served with adequate good roads on all sides. If education, health, newspaper and commercial activities are to enter the village life good roads are quite indispensable. The bullock carts and other primitive means of transport generally go with bad roads, and the loss of time, energy and money involved in using them has been considerable. It has been calculated that the annual savings in operating costs that would accrue to the users of bullock carts if India had adequate roads would be in the neighbourhood of Rs. 55 crores. Roads would facilitate the greater mobility of labour force and thus help both labour and capital alike. They make decentralisation of industries possible and the greater facilities given to business agents, technicians, and traders afford ample opportunities for efficient business organisation and distribution.

Trunk Roads

The mileage of Indian transport system is utterly inadequate. The railways and trunk roads are the arteries of the body politic, while the branch lines and subsidiary roads are the veins and the rural roads form the capilliaries. None of these three sections of Indian transport system is adequate for national economic development. There are four great trunk roads in India to-day; (1) The Grand Trunk Road from the Khyber to Calcutta, (2) the road from Calcutta to Madras, (3) the road from Madras to Bombay and (4) the link between Bombay and Delhi. The total mileage of trunk roads is hardly more than 5,000 miles. While there are 85,000 miles of metalled roads in India the trunk roads do not even cover 5,000 miles. It is evident therefore that trunk roads are quite inadequate and should be speedily extended. Most of these roads are unsafe during certain seasons and the Madras-Calcutta road is far from being satisfactory. We want at least ten more motorable trunk roads connecting the different parts of India. It has been suggested that Nagpur being the centre of India should be the focal point of the trunk roads. These new roads should be metalled, should include cartways and should be so laid out as to allow the greatest possible number of useful feeder roads. These roads, being inter-provincial and inter-state roads, should be considered vital and must be kept efficient so as to allow the maximum flow of goods and travellers. The trunk roads should be in proper condition in all weathers and wherever necessary bridges should be constructed.

Subsidiary Roads.—Coming to the subsidiary roads we find that while the North-West part of India are badly served South India is comparatively better off in this respect. In Bengal and Orissa the road system is deficient for two reasons, *viz.*, (1) lack of bridges in some places and (2) the existence of unbridgeable waterways in several tracts. India is a subcontinent extending over 1.8 million square miles. The transport system should serve diverse climates and a huge population of 388 millions. While England can boast of a road mileage of 3 per square

mile and Japan could claim 2 per square mile, the corresponding figure for India stands at 0.18 per square mile. The Indian Road Development Committee (1928) stated: "It is inevitable in a country so vast as India that the network of railways should have a very wide mesh. The intervals should be filled by roads. It is stated in the Railway Board Memorandum that railways in India have always felt the lack of roads to feed them. It is indeed somewhat incongruous that there should be nearly 40,000 miles of railways in India while the total mileage of surfaced roads in British India is only 59,000". While India can claim to have double the railway mileage of Great Britain—very small compared to India in area—in the matter of road mileage she does not possess even a third of what she should have in the same proportion. Even railways look to road development to feed them adequately. Roads should link waterways, railways, seaways and airways and by this process of linking one is improved by the other's efficiency and the country's economy benefits by the co-ordination of the different means of transport. In India the road construction has too long been shelved. Though several provinces possess reports on road development submitted by experts, no action has yet been taken to implement their recommendations.

The following table shows the mileage of extra-municipal roads in several provinces:—

Mileage of Extra-Municipal Road in India
(31*st March*, 1943).

Province.	Modern Surfaced or Macadamised Roads (Miles).	Total Unsurfaced Roads (Miles).	Total
1. Bengal ..	3,887	87,305	91,192
2. Madras ..	21,441	14,276	35,192
3. Bihar ..	4,016	31,144	35,160
4. U. P. ..	8,200	23,389	31,589
5. Punjab ..	4,378	20,764	25,142
6. Bombay ..	11,134	8,437	19,571
7. Sind ..	263	11,439	11,702
8. Assam ..	692	10,379	11,071
9. C. P. & Berar	5,469	3,193	8,662
10. Orissa ..	2,003	2,772	4,775
11. N.-W.F.P. ..	1,007	2,844	3,921
Total for British India ..	64,070	221,243	285,313
Grand Total All-India ..	85,792	261,340	347,132

Madras seems to be fairly well of from the point of view of metalled roads while the arid tracts of Rajputana, Sind and Punjab are poorly served. The need for greater road mileage in these areas in obvious.

Rural Roads.—The rural roads is the most neglected part of Indian transport system. It is indeed depressing to find that as the local bodies move towards democratic functioning the amount of money spent on rural communications has been decreasing. Road building does not seem to be included in the so-called nation-building services. During the rainy season roads connecting a great majority of India's 7½ lakhs of villages are virtually submerged in water and this entails incalculable difficulty and loss to villagers. The existence of the inefficient village bullock carts is itself the result of lack of improvement in rural communicatoins and road system. Particularly in the deltatic tracts where the soil is bad and materials for making roads are scarce the condition of rural parts during the monsoon times is deplorable.

PLAN ON ALL-INDIA BASIS.

Now is the time to prepare a comprehensive plan for the road development of India. Every province and State should draw up its own plans and the Central Government should co-ordinate them and evolve an All-Indian Road Development Scheme. While it is too early to guess what would be the extent of road traffic in postwar years, we are well aware of the fact that at present roads are bad in construction and mileage. The road plan should fix a target for mileage to be achieved, indicate the peroid within which the plan is to be achieved and suggest technical improvements necessary for the continued efficiency of the roads. It is needless to point out that Road-Rail competition is unhealthy and should be avoided in the general interests of the people. An All-India road plan should be in consonance with the postwar development of our railways, waterways and airways. It is exactly this responsibility of co-ordinating the postwar expansion of different means of transport that the public expect the Central Government to discharge. The layout of the trunk roads and new motorable "all-weather" roads should be outlined by the Central Government so as to serve all parts of India to the maximum extent possible. The road chart for different areas can best be planned only on the basis of a traffic census. Steps must now be taken to ascertain the extent and nature of traffic in different areas, the density of population, the economic potentiality of the area, the soil conditions, etc., of the regions. This would facilitate the drawing up of a correct road chart acceptable to all concerned. Greatest possible co-ordination between the Central Government and the Provinces and States is essential in making the road plan a complete success. A Central Board Development Board with branches in the provinces and States should be set up to look after the trunk road system. The responsibility of keeping these trunk roads in good condition with sufficient widths so as to provide for segregating fast-moving and slow-moving traffics, pedestrians, cyclists, country carts, etc. Since the road has to stand the grinding weight of the iron-tyred bullock carts cement surfaced roads would be the most suitable for trunk lines. The Provincial Boards should be concerned with the feeder roads and the rural roads. Sir Kenneth Mitchell, Controller of Road Transport, Government of India, is of the opinion that the district boards failed to develop the roads in the past and that the road management of the provinces should be completely entrusted with expert Provincial Highway Departments to be formed for the purpose. Thus, as a first step towards implementing an All-India Road Plan a reorganisation of the road administration is necessary.

The need for adequate number of well-trained road engineers cannot be over-emphasised. At present engineers have too much work to do to give enough thought on the problems of road engineering. They must be free from the trammels of routine statistical work, irrigation works and maintenance, building maintenance, etc. The technique of road construction has so far progressed in foreign countries that, if India is to keep pace with the cutside world in the matter of efficient transport system, road engineering must be taught as a special subject in the Engineering Colleges. The status and conditions of the distict board engineers are far from being satisfactory and unless they are freed from the grooves bound by conservatism and the vested interest of the contractors their efficiency will deteriorate.

The Road Plan has also to take into consideration some of the problems connected with traffic. The greatest stumbling block in the rapid improvement of existing roads is the iron tyre of the bullock carts. If these carts would substitute pneumatic tyres better roads and more roads can be constructed for rural betterment. Since pneumatic tyres are manufactured in India, there should be no difficulty in using carts with these tyres. At least those carts which are utilised for taking village products to the market centres should be fitted with pneumatic tyres. While present financial difficulties may make the construction of cement roads for our villages impossible it is comparatively easier to change over from iron tyre to rubber tyre in the interest of rural development. Co-operative Societies should give loans to facilitate the wider use of pneumatic tyres for bullock carts. The apathy of the people has to be combated by persuasion and propaganda.

Financing the Road Plan.—The public have not yet fully realised that road is almost the only public utility service wholly maintained by the Government. The taxes paid by the people for the use of roads, the motor tax and the petrol tax, do not form even a small percentage of the cost of the upkeep of the roads. Opinion is gaining ground that non-governmental sources should be further tapped to facilitate the early execution of road plans. The Central Road Development Fund created in 1929 was not properly utilised. Instead of using this fund to supplement their annual expenditure on roads the Provincial Governments have used it for augmenting the general revenues. The amount spent on roads in 1938-39 is actually half a crore less than the corresponding figure for 1928-29. Criticising the Provincial



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Governments for the neglect of roads Mr. R. H. Parker in his Presidential Address at the Fifteenth Annual General Meeting of the I.R.T.D.A. said on 25th August, 1943:

"I need not worry you with figures but it is to be noted that in 1938-39 as against a road expenditure of Rs. 6 crores, the revenue from motor transport was Rs. 9½ crores—being double what it was 10 years earlier and this revenue further increased to about Rs. 11½ crores in 1940-41, of which more than two-thirds went to the Central Government, who have no direct responsibility for road construction and maintenance".

With the increase in traffic, particularly motor traffic, it is expected that the receipts from petrol tax and motor tax would increase. Fuller utilisation of these resources are needed. Additional taxation is also suggested on the ground that the Road Plan when put into practice would greatly enhance the value of lands and buildings, bring economic prosperity to villages, tap new resources and add to the general taxable capacity of the people. A tax on vehicles, including the bullock cart, is favoured as a good source of income. Some are of opinion that the accumulated sterling balances should be drawn upon for the execution of the Road Plan. Flotation of a "Road Bond" as in England and America has also been suggested. It is believed that as chief exporters of motor vehicles to India the U. K. and U.S.A. would be interested in taking up a good share of this bond issue. The railways stand to gain by increase in the network of railways and hence a contribution from the railways can be claimed with justification. Mr. N. M. Khan, of the Gwalior State, suggests the following "allocation of the normal contribution from different sources of income":—

(a) Enhanced land revenue in respect of a tax on bullock carts	25%
(b) General vehicle tax in urban areas, road tax on buses, tolls, etc.	5%
(c) Due to unemployment relief (to be paid by Provincial Government)	7½%
(d) From taxation returns due to increased prosperity because of improved roads (to be paid by the Central Government)	12½%
(e) In respect of contributoin from the Army Budget because of the part played by roads in the defence of the country during the wartime ..	25½%
(f) Normal peace time contribution from Provincial and Central normal budgets for road construction and maintenance during the wartime ..	25½

The above contributions, according to him, are sufficient "to improve the existing ones and construct new ones on modern lines, say within 25 or 30 years".

The extent and nature of the transport system of a country is a sure index not only of its economic progress but also of its capacity for educational and political advancement. It is not an accident that powerful nations have excellent road systems. The roads of India have been in the past a drag on her development. If the future is to be shaped in the true interests of the vast millions of this country a well thought out, comprehensive Road Plan for India is a first requisite. The Road Plan should receive the first priority in the list of postwar reconstruction schemes because the transport network is the basis upon which all schemes could be successfully planted. In order to bring India's villages closer together nearly 4,00,000 miles of road would be essential. Mr. B. Vasugar, Conmates that the cost of constructing 4 lakhs miles of roads would be in the neighbourhood of Rs. 450 crores. The supreme need of the hour is an attempt to draw up a Road Plan for India. Details regarding road chart, materials to be used, types of roads, timing and tempo of construction should be clarified by a body of expert engineers. Finance should not be a stumbling block in providing a vital public utility service as roads. The accumulated sterling balances would be of great initial help in facilitating a good beginning and, as time passes on, the roads would generate increasing taxable capacity and thus pay their own way. It is hoped that the authorities of the Central, Provincial and State Governments would realise the importance of the task and pay their early attention to India's requirements of highways and byways.



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MINERAL RAW MATERIALS*

By M. S. KRISHNAN, M.A., Ph.D.

Geologist, Geological Survey of India.

The resources of India in mineral raw materials are known to the public only vaguely and, although official statistics of the mineral industry are published annually, they do not receive wide publicity.

That the mineral and mining industry of India is not negligible will be apparent from the fact that the nominal value of the pre-war production of minerals and metals amounted to Rs. 30,00,00,000 (thirty crores of rupees or £23,000,000). I say "nominal", because in most cases the value assigned is empirical and lower than the market value, and in some cases—e.g. clays, sands, building stones—the statistics are far from complete. The above figure is therefore an under-estimate. The chief items of which this is made up are coal (10 crores), iron and steel (10 crores), manganese ore (4 crores) and gold (3½ crores), petroleum (1½ crores), mica and building materials (1 crore each). India is reasonably well endowed with a variety of minerals, though she is not as rich as the United States in her mineral resources. She holds a dominant position in the world as a source of mica, manganese and ilmenite. She has immense deposits of high grade iron ores which will be sufficient not only for her own rapidly expanding steel industry but also for supplying her neighbours for many years to come. She has considerable reserves of several other mineral substances, though many of them remain to be adequately developed and turned into manufactured products even for her own consumption. She is, however, deficient in petroleum, tin, lead, zinc, nickel and a few others, allowance being made for the fact that some of these are available as comparatively unimportant or inadequate deposits.

We shall now briefly review these resources and see to what extent they will be useful in expanding our industries.

FUELS.

Of the two natural mineral fuels, India is fairly well supplied with coal but deficient in petroleum.

Coal.—The coal deposits are concentrated in eastern and east central parts of the country but a few less important ones occur in the Himalayas, Rajputana, Punjab and N.-W. Frontier Province. The most important coalfields are those of Bengal and Bihar since they are already developed and contain the best grades including coking coal for metallurgical use. The Assam and Central Provinces fields contain good reserves, mostly of second grade coal, which will receive more attention in future.

The coal industry has been the subject of discussion recently (1937), when a committee appointed by the Central Government reported on it. Since coal is of prime importance as the major source of heat and power for all industries, its production and utilisation are of national importance and must receive the attention of all concerned. Measures have been adopted adequately to ensure safety in mining and for putting out or controlling fires. But there is still room for improving the methods of working and enforcing rational use of the different grades of coal. There are several problems connected with the coal industry which require very early attention—study of the individual seams in each coalfield with reference to their physical and chemical properties; research on the suitability of different coals for various purposes; extraction of by-products, conversion of non-caking into caking coals; utilisation of lower grade coals to the greatest possible extent, etc. As our resources of the better grades are limited, control will have to be exercised in production and distribution, with a view to conservation of the reserves. A large measure of control of the coal industry by Government is highly desirable and necessary, and in the opinion of the present writer, this industry can be run on fully rational lines only if it is nationalised.

Petroleum.—The only useful petroleum deposits are located in Assam and the Punjab. Together, their annual production amounts to only 0.1 per cent of the world output of 280 to 300 million tons. Extensive prospecting in other likely areas has so far produced no encouraging results.

India's imports of fuel oils and kerosene in normal times are valued at about 8 crores of rupees. Owing to shortage and difficulty of distribution under war conditions the rural population has had to turn largely from kerosene to vegetable oils for lighting, and transport vehicles are using producer-gas instead of petrol for power. One of the lessons of the War is that suitable coal should be located and experiments conducted in the manufacture of motor fuels. Some countries deficient in petroleum, notably England, Germany and Japan, have achieved excellent results in this line during the last decade.

IRON AND STEEL.

The chief minerals required for the manufacture of iron and alloy steels are the ores of iron, manganese, nickel, cobalt, chromium, tungsten, vanadium and molybdenum.

Iron.—India's iron ore deposits are amongst the world's largest. The reserves of high grade ore in Bihar, Eastern States and Central Provinces are of the order of 4,000 million tons, with at least twice that amount of lower grade ores. Other important deposits are known in parts of Madras, Mysore and Bombay. Only some of these deposits have been examined fully, and detailed work on others is quite likely to add to the known reserves. In addition to these, there are also the ironstones of the Raniganj coalfield (used for smelting in Bengal till some 18 years ago), and vast deposits of ferruginous laterite which might be useful when technological advances overcome the difficulties of smelting ores containing 30 to 40 per cent iron.

The modern iron and steel industry has had a chequered career in India, but is now firmly established. The pre-war production of steel (about 1¼ million tons steel) has expanded and some alloy steels are now manufactured for armaments. Ferro-manganese has been manufactured for some years and arrangements have recently been completed for making ferro-silicon and ferro-chrome. It is to be expected that the development will continue and will soon lead to the establishment of the manufacture of heavy machinery.

Manganese.—For more than four decades India has been an important world source of manganese ores, and although in recent years greatly overshadowed by the U.S.S.R., has always been a good second as a producer. The chief deposits are located in the Central Provinces, but some useful ones occur in the Orissa States, Madras, Mysore and Bombay. As the ore has been exported almost entirely, the annual output has been very sensitive to world conditions and outside competition and has varied between a quarter and three-quarter million tons. Only an insignificant tonnage has been used within the country for making ferro-manganese and more recently in dry-cell batteries.

It is regrettable that high grade ore (over 48 per cent) should have been exported in the raw state all these years without any sustained effort at converting it into ferro-manganese. It is to be hoped that most of the output will be used in future to make ferro-manganese, manganese steel and chemicals.

Chromium.—Chromite, the chief ore of chromium, is produced in Baluchistan, Bihar and Mysore, and the output has fluctuated widely from year to year, as it is mainly an article of export. No reliable estimate has been made of the reserves but there is little doubt that the deposits will last for several years to come. A part of the output has long been used for making refractory chrome-bricks; recently bichromate has been manufactured, useful in dyeing and tanning; a beginning has also been made in the manufacture of ferro-chrome. If the known resources are carefully utilised and if research is conducted for the beneficiation of low grade ores, our deposits will be in production for many years.

Other Allowing Elements.—Cobalt ores are known to occur in Rajputana and Nepal; the former are apparently unimportant and the latter rather inaccessible. Sporadic and pockety occurrences of molybdenite have been reported but none of them has proved to be workable. Small deposits of wolfram are known in Rajputana and Bengal. The vanadium-bearing magnetite deposits of Mayurbhanj and Singhbhum are large enough to meet India's need of vanadium for alloy steels and for other purposes.

PRECIOUS METALS.

The only gold deposits of importance which have been producing for a long time are those of Kolar in Mysore, with an annual output of around 1/3 million

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ounces. Intensive prospecting may yet locate useful deposits in Madras, Hyderabad and Bihar. Mining at Kolar is being done at depths of over 7,000 feet and will presumably continue to as great a depth as is possible to work by human ingenuity, if the lodes are undiminished in richness and are economically workable.

The silver production of India is negligible and there appears to be no prospect of its becoming important unless good deposits of argentiferous lead ore are discovered.

LIGHT METALS.

Aluminium, magnesium and beryllium have now assumed immense importance because of their light weight which makes them highly desirable for the manufacture of aircraft equipment in which dead-weight must be reduced to a minimum, consistent with strength and other properties. The world production of these has increased several-fold during the last few years.

Aluminium.—India is richly endowed with deposits of bauxite—in Bombay, Central India, Central Provinces, Bihar and Madras. Until recently it was used only in oil filtration, but the production of alumina and aluminium has now been commenced. There is a large and expanding market for the metal in the domestic and structural fields in this country.

Magnesium.—Magnesium can be manufactured from magnesite, dolomite or the magnesium salts contained in sea-water and brines. Excellent deposits of high grade magnesite (magnesium carbonate) occur in Madras and Mysore, but the mineral has been used so far only in making calcined products and refractory bricks. Dolomite is available in many parts of the country. There is a large increase of production of magnesium in America and England, but no serious thought has yet been given to the subject in India.

Beryllium.—The mineral beryl is the raw material for the manufacture of beryllium. It is found in the mica fields of Rajputana, Bihar and Madras. India is capable of producing a useful tonnage of this mineral as a by-product of mica and felspar mining. All the beryl raised so far has been exported. Beryllium-copper and beryllium-aluminium alloys are finding increasing uses in industry.

COMMON METALS.

Copper.—Though copper deposits are known in Bihar, Sikkim, Rajputana, Mysore and Madras, only those of Bihar are worked, the annual production of the metal being around 6-7,000 tons. The other deposits have not been thoroughly prospected. Unless rich new deposits are discovered, it is unlikely that this country will become independent of imports from abroad. The consumption of brass can to some extent be reduced by the increased use of aluminium and steel for some of the purposes for which it is now used.

Lead and Zinc.—Deposits of lead ore are known in several places, but they are all small and pockety, so far as known at present. The old lead-zinc mines in the Udaipur State of Rajputana are being re-examined and their potentialities will be known before long.

Other Metals.—Antimony ore has been worked in Chitral near the Afghan frontier for some time and in Spiti, but the deposits are difficult of access. No useful deposit of tin is known in India.

NON-METALLIC MINERALS.

Non-metallic minerals, i.e., those used for purposes other than the extraction of metals, are of great importance in a number of industries. They include abrasives, and raw materials for the ceramic, glass and cement industries and for other miscellaneous purposes.

Mica.—India is the foremost producer of block mica in the world, the Bihar 'ruby' mica being much in demand all over the world as it is indispensable to the electrical industry.

The chief mica deposits are found in Bihar, Madras and Rajputana, but some also occur in Orissa and Travancore. Most of the mica at the outcrops has been more or less exhausted and underground mining will have to be very generally adopted in future. As the deposits are extensive and rich, they should easily last for a few decades especially if they are worked systematically and efficiently.

Practically all the output is exported after being dressed to size and sorted. The manufacture of micanite or built-up mica has been started recently on a small scale. This industry can be expanded. Condenser films are now being cut to shape in increasing quantities. The waste mica now thrown in the dumps can be ground and sold in powder form to the rubber, paint and other industries. Though there has been good progress in the use of electricity, there is as yet little or no manufacture of electrical machinery which can consume at least a part of the domestic mica output.

Asbestos.—Small deposits of asbestos are being worked in Madras, Mysore and Bihar; and a few smaller deposits are known in other areas. Chrysolite asbestos of spinning quality is mined in Cuddapah, where the deposits can be further developed.

Sulphur.—The sulphur deposits of Baluchistan have received a good deal of attention and pubilcity recently. They are, however, inconveniently located and unless transport is greatly facilitated and costs considerably reduced, they will not be able to compete with imported material in normal times.

Deposits of pyrites are known in several localities but none of them appears to be large enough to be worked profitably.

Gypsum.—There are excellent deposits of gypsum in the Punjab, Rajputana and Madras, the first of these being extensive and almost inexhaustible. The only use to which the mineral has so far been put in this country is as a retarder of portland cement, while plaster of paris may have been made on a small scale. The most fruitful line of development in the future will be the manufacture of sulphur or sulphuric acid, and ammonium sulphate.

Salt.—The rock salt of the Punjab, the salt lakes in Rajputana and the sea around the Peninsula are sources of common salt. Other sodium salts are available from the Sambar Lake and from 'reh' efflorescences in the United Provinces. Alum is recovered from pyritous shales in the Punjab and potassium nitrate from the soil in the Ganges valley. A beginning has been made in Travancore to recover gypsum from the salt pans.

The recent establishment of alkali and chlorine works in India is a good augury for the growth of the chemical industry.

Abrasives.—Though no deposits of natural emery are known in this country, there are good sources of corundum, garnet, quartz, quartzite and sandstone. Siliceous clays and limestones, kaolin and steatite are available for use as polishing powders.

Abrasive paper and cloth are now manufactured in India and there is much scope for expansion of the abrasives industry using both the natural and artificial abrasives. The latter, including alumina, artificial emery and carborundum, can be manufactured in suitable places where cheap power can be arranged for.

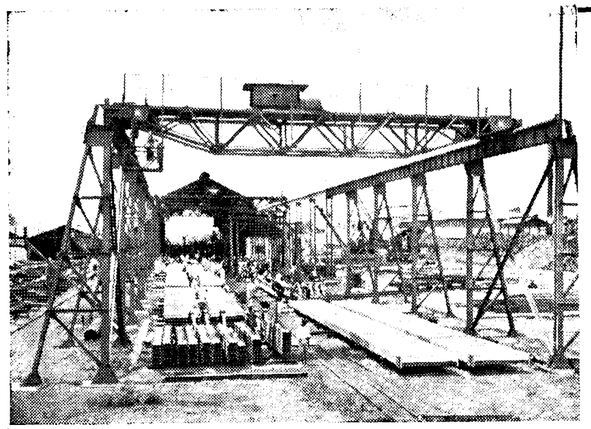
Refractories.—Heat resisting substances for making crucibles and for lining smelting furnaces are found in many parts of the country. There are several works in different parts of India making fireclay, silica, chrome and magnesia bricks.

The chief refractory materials are fireclay, quartz, chromite, magnesite, graphite, kyanite and sillimanite. Graphite deposits have been and are worked in Orissa, Madras and Travancore. A high grade refractory suitable for lining glass-melting furnaces is made from kyanite and sillimanite. The kyanite deposits of Bihar have been worked largely for exports and the excellent sillimanite deposits of Assam remain still to be developed.

Pigments.—Red oxides and ochres of various shades are available in many places. Barytes worked in the Ceded districts of Madras and in Alwar State is used as an ingredient of paints, as also is lithopone. India is very deficient in lead and zinc, but she has large deposits of ilmenite in Travancore (and to a lesser extent in Madras) a mineral used for making an excellent paint and lacquer base called "titanium-white". This mineral is exported to Europe and America in increasing quantities but has not been used within this country.

Cement.—India is now self-sufficient in the matter of portland cement, the raw materials for which occur in many parts of the country. This industry is capable of further expansion for supplying neighbouring countries. Other cements and plasters like high-alumina cement, plaster of paris, Keene's cement, Sorel's cement, etc., can also be manufactured as the necessary raw materials are available.

Ceramics and Glass.—The glass industry has recently received attention at the hands of the Industrial Research Bureau, and several works manufacturing different types of glass, including laboratory glassware, are now functioning. There is still much scope for expansion as the best quality glasses and optical glass are still imported in large quantities. Coloured glass (red, blue and green, etc.), is not yet made.



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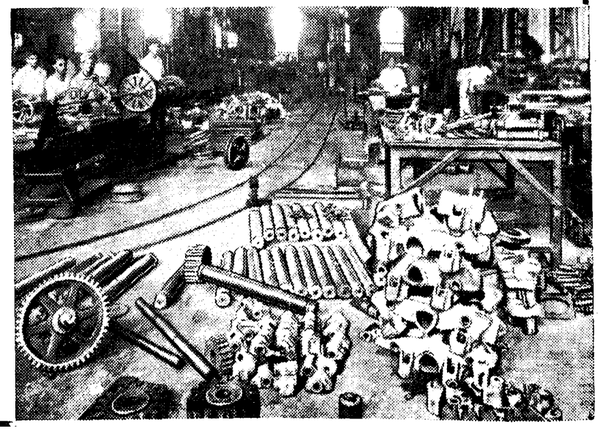
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The ceramic industry is expanding and will have to grow to several times its present side in order to supply the full needs of this country. Extensive deposits of kaolin have been located recently in Travancore and careful search will doubtless lead to further discoveries in other parts of India.

THE FUTURE OF THE MINERAL INDUSTRY.

Inefficient Working.—There are certain undesirable features in the mineral industries of India which need rectification. The most obvious of these is that much of the mining (except coal mining) is managed by people with little or no technical qualification. This generally leads to unsystematic working designed to get the best part of the deposits at a minimum of expenditure. Though this has happened in all countries in the early stages of their mining activities, there is no reason why we should not learn from the experience of others and work efficiently and methodically from the beginning. Though it may bring good profits for a time, bad working lessens the life of a deposit and may even ruin it.

Planned working is necessary to ensure conservation and to make the best of every mineral deposit. It may be profitable to the lessee to work the best part of, say, a manganese or iron ore deposit, but the grade will soon go down and at the same time the cost of working will increase. It would therefore be advantageous, in the long run, for an iron smelter to block out and use a large quantity of ore of 55 to 60 per cent, than to use his high grade ore first with progressive deterioration and consequent necessity of frequently changing his smelting practice, leading finally to the abandonment of some quantity of ore which would otherwise have been utilised.

Export of Raw Mineral.—Several important minerals are worked in India for export in the raw state, i.e. without undergoing any process of manufacture. Such are mica, manganese ore, chromite, ilmenite, monazite, etc. Their value is determined by the prices ruling in a far-off market. The miner gets a mere pittance for all his trouble after meeting the cost of working, transport, ocean freight, insurance and other charges. Export of the raw mineral leads to the reckless exploitation of the best parts of the deposits first, though even then the profits to the miner do not amount to much. It also leads to the deterioration of the average grade of ore within a few years. Thus most of our high grade manganese ores have been worked out and the average ore of today is definitely poorer by about 3 to 5 per cent.

It would be more satisfactory and profitable to the country if the mineral underwent at least partial manufacture before export. There is no reason why ferromanganese and ferrochrome to some extent should not be exported instead of the manganese or chrome ore. Not only is the cost of the manufactured article many times that of the raw ore but the manufacture brings in benefits to the country in the shape of wages, interest on investment and technical experience.

Internal transport.—An important disability to which the mineral industry (and probably other industries) is subject is the incidence of high railway freights for internal transport. This is no doubt due to the vast distances within the country. As a result, several industries suffer because of the high cost of transport of the raw materials to the manufacturing centre or of the manufactured goods to the markets. Thus it is impossible for marbles from Rajputana to compete with Greek and Italian marbles in the Calcutta market; for Bihar coal in general to compete with South African bounty-fed coal in Bombay and Karachi markets; Madras gypsum to compete with Egyptian gypsum in Hyderabad or Central Provinces. There are also some anomalies in the freight tariffs of our railways, such as special rates only for special destinations. There is therefore need to follow a carefully thought out transport policy designed to help Indian industries.

Conservation of Mineral Wealth.—Since minerals, when worked, are of the nature of wasting assets, their winning and utilisation should follow a carefully devised plan. The resources must be made to go a long way by working them efficiently, by avoiding wastage and by putting them to the best use. It may be economical to use the best grade coal for burning in boilers, but it is not beneficial to the country as the best coal can be put to some better use.

State Control.—State control of industries, especially of mineral industries because of their high strategic value, is a development of recent years, and even countries with vast resources are resorting to it. It is particularly well exemplified in the coal industry, and many countries of the world have adopted various measures in the national interest —control of production, distribution, price, export and import quotas, subsidies and bounties, tariff protection, etc. These measures are summarised in a report on the coal industry of the world issued some 5 years ago by the League of Nations.

Control and co-ordination of industries is an important feature of the war period and the world is not likely to return to the era of untrammelled competition after the war, even though much of the control may be removed. But in an industrially undeveloped country like India, some measure of control is necessary and thought should be bestowed on devising a plan for the development of the existing industries and for the establishment of new industries, taking into consideration the availability and location of raw materials and other facilities.

An indication has been given, earlier in this article, of the industries which can be expanded—particularly steel, aluminium, magnesium, abrasives, refractories, paints, ceramics, glass, cement. There are numerous smaller industries in which minerals play a part and these also should receive their due share of attention.

Research.—The great progress in the utilisation of many raw materials during the present century has been made possible by research. Our mineral resources can be utilised fully and to the best advantage only if the organisation now dealing with minerals—viz. the Geological Survey of India—is provided with laboratories and facilities for undertaking investigations connected with minerals. The 'Utilization Branch' which has recently been started may be used as a nucleus and reorganised so that it can perform much the same tasks as the Bureau of Mines in the U.S.A. and the Mines Branch in Canada. These tasks will include the proving of mineral deposits, the study of the properties of the minerals, experiments of benefication and concentration and on ways of using them for various purposes. It will be necessary to organise a central laboratory (and possibly three or four regional laboratories) for investigating various types of problems. In the United States there is a large central laboratory and several (about 10) regional laboratories, all maintained by the Federal Government, whereas in Canada the central laboratory is supplemented by regional laboratories run by the Provincial Bureaux of Mines.

Indian Minerals and Foreign Countries. It has already been pointed out that India is a supplier of some important minerals to the world, particularly mica, manganese ore, chromite, ilmenite, monazite. Beryl has been exported intermittently and iron ore for a short time before the war. All of these have been sent away in the raw state, which is an indication of the industrial backwardness of this country. There is no reason why most of these raw minerals cannot be turned into partly or fully manufactured articles before export.

In addition to the above, the resources of India will permit, when fully developed, the export of such materials as steel, cement, paints, ceramic ware and others, but it should be realized that she is still far from being able to supply her own needs.

It should be the aim and endeavour of India's industrialists to see that she does not remain, in the post-war world, the exporter of raw materials and the importer of finished goods. She can attain self-sufficiency to a large extent and utilise her exportable surplus, whether of raw materials or manufactured products, to obtain materials which she does not possess and which she needs for her consumption.

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OUTLOOK FOR OILSEEDS

In any scheme of economic reconstruction for India in the post-war period, oilseeds are bound to enjoy great importance. The reason is to be found in the unique position of oilseeds, as an agricultural product, as an export staple, a raw material for a wide variety of manufactures, and an article of food for men and cattle. As raw material for industry, they are bound to figure in the post-war plans for international regulation of supply of raw materials. For the same reason, and even more, because of the instability of their fortunes as an export staple, post-war planning in India will aim at a closer integration of oilseeds production in the internal economic structure. The forced marches in research caused by the war have opened up wide scope for the utilisation of oilseeds in industrial and other consumption at home. Historically, India's export trade in oilseeds is not more than a few decades old. During this period, it grew to great importance. But it was not long before India's exports met with serious competition. Indian linseed was one of the items that figured prominently in Indo-British trade agreements. The element of insecurity, which was noticeable in the post depression period, developed during the war into a cessation of exports. Special measures had to be undertaken for the relief of groundnut growers. But as mentioned already, the war, if it began with a threat to oilseeds, has also held out great promise. In this article, an attempt will be made to indicate these potentialities and to appraise the place of oilseeds in our national economy in the post-war period and the relation which they will bear to the producers and consumers of oilseeds in the rest of the world.

PLACE IN INDIAN ECONOMY

Not only in Indian but also world economy, oilseeds have come to enjoy a high degree of importance. They form a respectable item in world trade and the scope for their consumption has been rapidly widening. Oilseeds form the raw material for vegetable oil, a vital basis for key industries; and the demand for them is bound to grow. Every country with industrial ambitions has realised the need to exploit its oilseed resources to the maximum extent possible. Effective steps are being taken by every country to make itself self-sufficient in the matter of vegetable oils and to extend the internal production and consumption of oilseeds. In fact, in most of the manufacturing countries, the production of oilseeds has not yet been able to keep pace with the growing demand for them. The importance of oilseeds does not stop with the yield of the much needed lubricants for machinery. In recent times, the demand for edible fats has grown up as a result of shortage of cattle, increase in population and rise in the standard of living. As methods are successfully devised for manufacturing edible fats from oilseeds like linseed, rapeseed, etc., there has arisen a powerful fillip for the cultivation of oilseeds. Manufacture of soaps, vegetable ghee, paints, varnishes, etc., has also offered wide scope for oilseeds. They form an excellent fertiliser of the soil and nutritious cattle feed.

Among the oilseeds-producing countries of the world, India holds a dominant place. She produces a wider variety of oilseeds than any other country. The chief oilseed crops of India are groundnut, linseed, cotton seed, sesame, castor, mowra, niger and kardi. Over 16 million acres were under oilseeds in 1939-40 and the total production was estimated to be not less than 8 million tons. The absence of soyabeans and palm kernal in the Indian oilseeds group is, however, to be noted.

INDUSTRIAL USES OF OILSEEDS

The industrial uses of oilseeds are many. The more important of them are the manufacture of soaps, paints, varnishes, compound lubricants, oilcloth, candles, substitute for tallow, glycerine, stearine, biscuits, substitutes for butter and ghee, hair oils and medicated oils. In 1939 there were 19 soap factories in British India, 11 of which were located in Bengal and 5 in Bombay. To a large extent, the output from Godrej Soap Factory of Bombay, the Tata Oil Mills Limited, the Bengal Chemical Works of Calcutta, the Kerala Soap Factory at Calicut and the Government Soap Factory at Mysore could meet the rapidly rising demands of the public. But it is felt on all hands that, while the scope for expansion is promising, the number of factories in India falls far short of our requirements. On an average nearly one crore worth of soaps were imported annually before the war, and the ample resources of oilseeds have recently revealed that, if facilities are afforded for establishing an up-to-date Oil Industry, India can not only become self-sufficient in this matter on the basis of the present level of consumption, but be able to meet a steadily increasing demand. While India possesses large supplies of linseed oil and other materials necessary for the manufacture of paints, she was importing foreign oils and paints every year. In 1939 she had hardly 16 factories engaged in producing paints. A wide variety of varnishes and paints can be manufactured in India and, if the resources of the soil are efficiently utilised, self-sufficiency and an expanding internal consumption may be within our reach. The manufacture of candles, which is still in its infancy, can grow bigger if industrialists pay attention to indigenous oils, particularly mowra and cocoanut oil. The great textile interests in India, whose future is by no means dark, can interest themselves in the manufacture of vegetable fat from groundnut and coconut oils so that, the imported tallow may be gradually dispensed with and Rs. 22 lakhs saved for the country annually. The enormous importance of glycerine, a by-product in the making of soaps, is recognised as valuable for the production of dynamite and other war materials. Most of our oilseeds can yield lots of glycerine and, particularly, during war-time, the manufacture of glycerine must be profitable and urgent. Not much progress has been witnessed in this direction, and every effort should be made to extract the greatest possible quantity of glycerine from our resources and stop importing foreign glycerine to the tune of four to five lakhs per year. Producers of Ayurvedic medicine have been handicapped to some extent by the absence of oil refining. The dwindling of imports of foreign drugs during war-time has already given a fillip to indigenous drugs production. But if an oilseed industry is established, medicine would open a valuable outlet for oilseed products. Vast masses of men are awaiting post-war plans to raise their pitiably low level of living. With the beginning of prosperity for India's agricultural population, a large demand will develop for hair oils, biscuits and substitutes for the high-priced ghee and butter. Oil is widely used in India for smearing on the body, for cooking purposes and for illuminating lights. The poor cottages which go without the above necessities now, may well renew their demands for oil if economic prosperity should set in. The value of oilcakes as fertilisers of soil has not yet been fully realised. In the past, an agitation was carried on against the export of oilseeds mainly on the ground that valuable manures are lost to the agriculturist. As an admirably suitable cattle feed, oilcakes are bound to be indispensable for the development of the dairy industry. It has also been found out that some oilcakes, like the cake of the mowra seed, are excellent vermicides capable of protecting tea and sugarcane plantations from the ravages of insects. The agricultural population, therefore, stand to gain enormously by the establishment of an efficient oil industry and the utilisation of all its by-products.

Groundnuts.

Let us take groundnuts first. Before the war groundnuts could not secure attractive prices within India and hence had to look to foreign markets for remunerative quotations. However, after the fall of France in June 1940, the position became precarious and groundnut prices receded to very low levels. The upward tendency was renewed in June 1942; and since January 1943 the prices of groundnuts have even gone out of parity with world prices. While this tendency to outstrip world prices may help the growers, the Ministry of Food has been unwilling to increase the purchases of India's groundnut in view of the exhorbitant prices. There has been a tendency for U.K. to shift their purchases to Senegal and Nigeria, and the freight originally allotted to shipments of Indian groundnuts have been subsequently cancelled. Before the war, India used to export eight lakh tons of groundnuts annually, but during 1942 the figure came down to 310,000 tons. Dealers in oilseeds expect the re-exports to continue to dwindle as long as prices remain above world parity. In these circumstances, an attempt must be made to explore the avenues of internal employment of groundnuts and reduce India's dependence on external markets.

In prewar years, the annual consumption of groundnuts remained in the neighbourhood of twelve lakhs tons. In 1942-43 the total acreage under groundnut was 7.43 milion acres and the output stood at 27.14 lakhs tons. In view of the food scarcity, groundnut which is highly nutritious was consumed in India to the tune of 21 lakhs tons. The internal outlets for groundnuts are many. If groundnut oil industry is established, the production of lubricants, illuminants, soaps and paints can be increased. It has been found out that, if groundnut oil is solidified suitably, it can replace tallow in textile industries. A few months ago it was demonstrated in South India that motorcars can be run on groundnut oil. Groundnut contains a good quantity of valuable glycerine and this has increased its importance as raw material for glycerine plants set up in Calicut and Mysore. Glycerine is necessary for the production of explosives and groundnut offers great scope for

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the cordile factories in pursuing this field of activity. As in U.S.A., groundnut oil can be utilised for the manufacture of margarine and lard compounds. In recent years, the fish canning industry found in groundnut oil an excellent source of preserving oil. With the development of Indian fisheries, groundnut oil is bound to grow in importance. It can even completely replace the imported cod liver oil if it is vitaminised so as to contain vitamin A and D. Groundnut meal is known to be very suitable for making biscuits, and the husk can be utilised for preparing Furfuraldehyde which is essential for synthesis of carbohydrates. Carbonised groundnut-husk is useful in the manufacture of activated carbon. How widely groundnut oil is employed in the manufacture of substitutes of ghee and butter can be studied from the rapid progress of the Vanaspati industry. The demand for cheap ghee has given rise to imports of hydrogenated vegetable oils and, in recent years, indigenous products like Vanaspati consisting of hydrogenated groundnut oil came to be popular in the market. The progress of Vanaspati has been striking, and by 1941 there were ten factories producing Vanaspati in different parts of India. Vanaspati is a powerful competitor to pure ghee, and offers a great scope for groundnut oil. So long as India remains poor with an ever-increasing shortage of ghee and milk, the substitutes of ghee and butter are bound to thrive and with them the scope for groundnuts would widen. The best proof of the importance of Vanaspati is that the Government has turned to an excise duty on vegetable ghee for additional revenue.

Linseed.

The place of Indian linseed in world trade is by no means preeminent as in the case of groundnuts. India is not the largest producer, nor is she the largest consumer of her own produce. About 17 percent of the world's linseed is produced in India and her share in world trade in linseed comes to 16 percent. Argentina controls 80 percent of linseed entering the world's markets and hence she determines the quotations for linseed. But since Indian linseed contains 4 percent more oil than the Argentine linseed, a premium of 15 percent over the Argentine prices is allowed for the Indian produce. Generally, if the premium is increased, exports from India decrease and vice versa. In recent months, the disparity between the Indian rate and the Argentine rate has been too wide to encourage the Ministry of Food to increase their purchases from India. This price factor has not only affected the export prospects, but even ready business in Bombay has been very much reduced. The position has now been reached when it is necessary to explore ways of developing internal avenues of employing linseed resources so that we can be indifferent to export prospects. Before the war the average annual production of Indian linseed was four lakhs tons; but in 1941-42 the yield came down to 3.6 lakhs tons. For the current season, the figures are expected to be lower still. Owing to the prevalence of high prices, linseed exports which stood at 1.5 lakhs in 1942 are lower in the current year. A very large scope exists for increasing local consumption of linseed. It is a precious raw material for the production of hydrogenated oils, boiled oils, vulcanised oils, glycerine, oilcloth, linoleum, tarpaulins, high-class paints and varnishes etc. Mention must be made of soap-making, biscuit manufacture, production of leather substitutes etc. It can mix with other mineral oils for purposes of lubrication.

Castor.

The castor plant is useful alike for cattle and human beings. While the seed yields valuable oil, the cake can be used as cattle feed. The castor cake is supposed to increase the yield of milk from cows fed upon it. It is also employed in rearing "Eri" silkworms. Paper pulp can be made out of castor fibre. Castor flowers possess purgative properties and are widely used in the preparation of indigenous medicine. The enzyme "Lipase" which is required for the hydrolysis of fats and oils can be extracted from castor seeds. It is a matter of common knowledge that castor oil is widely used for medicinal purposes, and for the preparation of perfumed hair oils. Mixed with kerosene or fusel oil, it can be used as an illuminant as well. The most important industrial use of castor oil consists in lubrication of all types of heavy machinery. High-speed internal combustion engines like the aero engines, locomotives, marine engines, etc., can be most satisfactorily lubricated with castor oil. Dehydrated castor oil mixed wih soyabean oil yields excellent paints. If suitably treated with sulphur, a substitute for rubber can be produced. Binders for cold moulding compositions, erasers, and waterproofing compositions can be made from castor oil. The Turkish red oil is found to be of great value in textile industries for dyeing cotton, linen, silk and leather fabrics. This red oil is also employed for lubricating and cleaning wool and also for preparing soaps and emulsified oils. Recently, investigations have been successfully carried out for the preparation of Turkish red oil from castor oil. Another use which castor oil has been put to is the manufacture of soda soap which is essential for making transparent soaps. As a plasticizer, castor oil is used in the manufacture of leather cloth, artificial leather and linoleum. It is one of the materials used for fly papers, typewriter inks, calico printing, hydraulic break of fluids, and technical wax preparations. In Russia, U.S.A., and Belgium steps are taken to increase the production of castor seed, so as to keep pace with the rising industrial dmand for seed and oil. In China, tung oil is used for the manufacture of oil cloth and also for road surfacing. Through cracking processes, tung oil is made to serve as a substitute to kerosene and gasoline. Dehydrated castor oil can be employed in the place of tung oil, since its viscosity is uniform over wide temperature changes making it a suitable ingredient in hydraulic pressure fluids. It is also employed as an ingredient in the binder used in making incendiary bombs. Artificial leather industry generally absorbed one-fifth of the total production of castor oil. Under the stress of war demands, the artificial leather industry is bound to experience maximum expansion and, as a result, the demand for castor oil will be greatly increased.

India would do well to emulate U.S.A. and Russia in this respect and instead of looking for outside markets, create facilities for internal utilisation of this valuable product. Since 1930-31—and particularly since 1935 when Brazil emerged as a competitor in castor—India's exports of castor seed dwindled, and the recent trends make it clear that the time is now ripe for attempting to divert India's seeds to internal industrial uses. At present, the scope for castor oil as a lubricant is very wide. The railways alone consume 8,000 tons of castor oil and 1500 tons of blow rape oil, while sugar factories, oilmills, ricemills etc., consume 6,000 tons of vegetable oil every year. If vegetable oil were used for all applications for which they are suitable, annually 46,000 tons of oil would be consumed in India. In 1941 Indian Railways could substitute 8000 tons of castor and blown rape oils for mineral axle oils, thus absorbing all the available production of castor oil suitable for the purpose. Blends of castor oil and rape oil with other oils do very well as lubricants for steam engines and motor cars. It is reported that the Petroleum companies contemplate mixed blends of vegetable and mineral oils for which they would require about 15,000 tons of castor and rape oil per year. Thus the scope for castor oil industry is rapidly widening.

Cotton seed.

Cotton seed is of enormous food value. Cattle can be satisfactorily fed with cotton seed cake. It has been found that flour made out of cotton seed contains a very high percentage of proteins and fats. Mr. Bahl points out that its nutritive value is "nearly two and a half times that of fried meat and from three to thirty times that of many of the best known and most frequently used articles of food." Cotton seed flour mixes well with wheat flour; and hence it is eminently fitted to improve the diet of human bings. Stearine can be extracted from cotton seed.

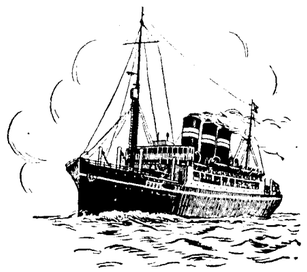
Poppy seed.

Indian poppy seed contains 50 percent of oil and is used in preparing paints for the artists. It can also be employed in soap manufacture, and for the adulteration of olive oil. Mowra seeds yield excellent oil for soap making, and, though it is of no food value, good manure can be produced out of them. The Niger seed contains 35 percent of oil and the oil is mixed with high-priced oils like mustard oil and rapeseed oil. The oil cake is known to be particularly useful as manure for sugarcane crop. Copra oil is suited for making soaps, margarine and candles. Sesame oil, mustard oil, and rapeseed oil have extensive uses not only for domestic purposes, but also for making soaps, glycerine, hair oils and lubricants.

War-time factors.

War has changed the prospects for oilseeds trade. Though the volume and value of oils and oilseeds that enter into international trade are great, the shortage of transport has created acute difficulties since the consuming areas are often widely scattered and far away from producing regions. Since this war is global in dimensions, transport creates bottlenecks on a world-wide scale. When the Japanese overran China, Malaya, the Philippines and the Dutch East Indies which formed rich sources of cocoanut oil, copra, palm oil, groundnut oil and tung oil, every producing country was obliged either to restrict the production of oilseeds or find new uses for them. Both methods were adopted for coping with the critical situation. Confining our attention to India, we find that oilseeds had to face the disappearance of export markets, the persistence of shipping difficulties, the apathy of the Government in devising effective ways of establishing an oil industry and a disproportionate rise in prices. The absence of imported oils opened a great chance for building a strong vegetable oil industry which can be a basis for numerous by-products besides filling up the gap created by the lack of imported articles. The persistent inflation kept up the rise in prices and a flight into commodities was the natural result. Financiers did not hesitate to invest large amounts in oilseeds like linseed as a hedge

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against inflation. But while the prices of oilseeds rose high, the prices of foodgrains were higher still. This acted as a check on the extension of cultivation of oilseed crops. The recent Allied victories may ease shipping difficulties and bring back to us one or two of our foreign markets; but the problem of utilising India's oilseed resources internally will still remain.

War is the most effective of trade barriers, and we must make the best of the war to lay the foundations of a vegetable oil industry which can feed numerous other minor industries, besides serving the major ones. The food scarcity created by the loss of Burma has obliged the Government of India to inaugurate a vigorous grow-more-food campaign. The food value of oilseeds is now brought to light and its value as fertiliser is also recognised. Scarcity of kerosene oil has compelled the poor villages to look to vegetable oils for lighting purposes; and the high prices of ghee and butter drive them to vegetable oils more than ever before. If war has resulted in an unprecedented slaughter of cattle, that is precisely the reason why the oilseeds should be conserved and increased to enrich the stamina of our cattle now and in the post-war years.

Coming to the industrial uses of oilseeds, we find that the cessation of imports of foreign soaps should whip up our attempts to make India self-sufficient in this line. Our factories, old and new, require excellent lubricants suited to various kinds of machinery generating different temperatures. Experiments on our oilseeds have shown that we have ample raw material for producing all kinds of lubricants for automobile, locomotive and aircraft factories. The scope for making oilcloth, candles, hair oils, stearnine, margarine, paints, varnishes and indigenous drugs etc., is also vast. Before peace restores the currents of exports and imports, India should become self-sufficient in all these lines of manufacture. India is a vast country of nearly 38 million souls most of them leading a very low standard of living at present. The promises of prosperity are not entirely absent and hence the potential demands for the products of oilseeds are immense. The developments particularly in engineering and transport industries offer great scope for oil production. We can reduce excessive dependence on foreign markets, if active steps are taken for absorbing oilseeds internally. Modern oil presses and manufactures must be set up in India without any more delay. In 1939, there were only 293 oil mills in India. They are absolutely insufficient for our needs. If the Government affords facilities for the import of necessary machinery and chemicals, private industrialists and financiers should do the work of starting factories, and the market is wide enough to absorb the products. Attempts must also be made to organise research to increase the variety and yield of oil-seeds in the country. Improved marketing facilities, standardisation of weights and measures, good roads, warehousing, publicity and favourable railway rates would act as powerful aids to the growth of the oil industry. That oilseeds deserve to be kept inside the country has never been doubted. The war has now thrown up a golden chance of conserving oilseeds for our agricultural and industrial purposes. Almost all factors are favourable.

The Future

With regard to the future the question arises whether there should be an increase in the output of oilseeds or not. Are we justified in merely maintaining the present level or is there scope for expansion? These questions can be satisfactorily answered only in relation to the postwar export prospects and internal consumption. Since oilseeds are mostly cultivated as mixed crops and in dry areas, the capacity for increasing production is always there. During the decade preceding this world war nearly 8% of the net area sown in British India was under oilseeds. In 1939-40 out of 209,960,000 acres cultivated, no less than 16,294,000 acres were devoted to raising oilseeds. On an average, India's production exceeded five million tons a year. The figures for 1939-40 relating to the production and exports of some important oilseeds are as follows:—

Seed	*Production* (In tons)	*Export*
Castor ..	44,000	40,437
Groundnuts ..	2,327,000	548,564
Linseed ..	403,000	219,212
Rapeseed ..	1,104,000	21,705
Cakes		
Groundnut		132,095
Linseed		29,555
Rape & Sesamum		14,213

Enough has been produced to meet the prevailing internal demand and a good margin was left for exports. India could boast of enjoying the following percentages in world trade (in 1934-35); mowra seed 100% cotton seed 1%; sesame 3%; castor 98%; rapeseed 36%; groundnuts 29%; linseed 13%; poppy seed 75%; niger seed 100%. Though the opening of European markets during the latter half of the 19th century gave a powerful impetus to the cultivation of several oilseeds, the growing competition in the world markets and the steadily rising demand within India resulted in a gradual downward trend in exports. During the decade before 1939 nearly 80% of India's castor, 25% of groundnuts, 65% of linseed, 5% of rapeseed and only 1% of sesamum featured on the export schedule. The Ottawa Preference promised temporary prosperity but new competitors have been growing very fast. War, being a powerful decentraliser, has crippled international trade and has encouraged home production in the erstwhile consumers of oilseeds. Centres of production as well as the total output of oilseeds are bound to progress rapidly in the postwar years. But all indications are clear that the demand for oilseeds will also take long strides and if the quality of Indian seeds is improved, the chances of obtaining a decent share in foreign markets are not remote. But one cannot be sure of restoring the pre-war or pre-Depression levels. But it is safe to proceed on the assumption that under proper guidance and active planning, we can hope to regain 60% of the prewar markets in oilseeds.

The internal demand for oilseeds, on the other hand, is most promising. In fact, the decline in India's oilseeds exports during the period of 1929-30 to 1939-40 is to a great extent explained by the growing requirements of our vast increases in population and cattle wealth.

	(Exports in tons)			
Seeds	1929-30	1930-31	1935-36	1939-40
Castor	121,711	90,022	59,968	40,437
Ground-nuts	613,360	601,204	412,567	548,564
Linseed	222,507	256,799	164,743	219,212
Rapeseed	66,259	32,843	19,021	21,705
Cakes				
Ground-nuts ..	147,471	181,771	194,238	132,095
Linseed	68,351	24,059	71,774	29,555
Rape & Sesamum	48,388	30,753	20,638	14,213

If it is decided that the present output can and should be safely increased, the target to be attained will depend on the extent of internal absorption of oilseeds during the postwar years. The 15% increase in our population and cattle and the absolute lack of chemical fertilisers in India extend good scope for increased production. If any post-war agricultural plan for India is drafted, the needs of dairy farming and the manurial requirements of our arable lands cannot be overlooked. This would reveal the enormous importance of oilseeds for a quick recovery in our agriculture. If the industrial expansion of India is planned and speeded up in all provinces of this country, the pressure for oils and oilseed products would indeed be very heavy. We are not in a position to know the possible increase in the industrial demand for oilseeds for soaps, lubricants, biscuits, cattlefeed etc., separately but that the chances are very bright is unquestionable. On the whole, we will not be hitting too much if we begin to plan for doubling the present outturn of our oilseeds.

This doubling of our oilseed resources can be achieved either by extending the area under cultivation or by organising methods of intensive cultivation. As long as internal avenues are undeveloped the agriculturist generally paid attention to oilseeds only with reference to the trends in export markets. Special attention towards increasing the outturn can be a reality only if better prices are offered and a steady demand guaranteed. The Government can achieve the target only by extending all facilities for starting a vegetable oil industry, and organising researches into the soil, manurial and other requirements of the oilseeds. Experiments conducted in Hyderabad, Baroda and Indore go to show that the yield can be greatly increased and improved if research is organised and established on a satisfactory basis. Better prices and greater facilities for marketing, storing and distribution of seeds would give the initial impulse for a nation-wide move for greater attention to the production and conservation of oilseed resources.

PROSPECTS FOR CERAMIC INDUSTRY IN INDIA

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Before plans are chalked out for the development of the Ceramic Industry in India, it would be worthwhile to see how this industry was developed in other countries, particularly in Japan which in recent times has become a serious competitor in porcelain crockery in all countries.

In the cost of manufacture of Porcelain crockery articles, labour forms an important and big item.

The manufacture of crockery requires a large amount of skilled hand labour, especially for the more highly decorated articles and the much lower wages of skilled hand labour has enabled Japan to compete on a big scale.

Percent of total manufacturing articles 100 per cent:—

Pay Roll	54%
All other	45%
Material	..
Fuel	..
Overhead	..
Percent of total manufacturing, selling and other administrative expenses ..	100%

From the above table it is seen that the pay roll forms nearly 50 per cent of the cost of the article, and material, fuel and factory overhead forms the other half.

For a considerable time prior to the middle of 1933, the price structure in the Japanese short line tableware had been demoralised, prices for export to the U.S.A. particularly to large buyers, being for the most part largely a matter of bargaining. This period of very low prices continued until the formation (under the provisions of the Export Association Law of Japan) of the Federation of Japan Pottery Exporters' Associations. This Federation has the power to control the volume of, and to fix the minimum prices for, all pottery exported to any part of the world. Also the Federation brought about advances in the Yen prices of major classes of pottery exported to the U.S.A.

As regards the manufacture of high voltage insulators, Japan copied mostly American technique and most of their big factories are based on that.

Coming now to the production of porcelain crockery in U.S.A. we find, that due to the high cost of skilled labour, they were not able to compete with Japan as could be seen from the following table:

Decorated Ware—				
Cups (Saucers) not parts of sets ..	109	112	111	107.5
Plates ..	109	111	118	..
32 Piece sets ..	110	112	111.6	..
58 Piece sets ..	..	..	111.7	...
93 Piece sets ..	..	..	109.7	..
94 Piece sets ..	110	113	116.9	..
Other tableware ..	..	..	108.1	103.2
Weighted average	110	112	110.5	..
White ware ..	112	115	..	..

It will be seen from the table that the landed cost of imports from Japan has been very nearly equal to the U.S.A. costs of production.

Besides, Japan became a serious competitor in U.S.A. imports as could be seen from this table:

	Percentage of total number of pieces imported		Percentage of total value of imports	
	1929	1931	1929	1931
All Countries ..	100.0	100.0	100.0	100.0
Japan ..	51.6	85.2	32.4	57.7
United Kingdom	11.1	7.7	22.3	22.3
Germany ..	22.2	3.9	26.0	11.4
Other countries (principally France and Czechoslovokia)	15.1	3.2	19.3	8.6

To meet this Japanese menace, U.S.A. factories tried various labour-saving devices, notably the Tunnel Kiln and Mechanical conveyers. In the Tunnel Kiln, the movement of cars is continuous and firing the ware by this method is not economical unless the full capacity of the kiln is utilised continuously; if so utilised, the tunnel kiln as compared with the older type (intermittent) kiln is much more economical with respect to fuel cost per unit of production and a smaller number of employees are required for the former, than for the latter type of kiln per unit of product.

Several American factories have installed somewhat extensive conveyer systems, which greatly expedite the handling of raw materials and the ware at different stages of manufacture and a large proportion has from time to time installed other new and more modern equipment in various departments of their plants.

Another important device for reducing costs has been the introduction of (paced) conveyer systems, whereby lost motion of workers is largely eliminated, operations simplified and the work of the different employees geared to a uniform speed.

Other mechanical improvements are being gradually introduced into the industry. There is growing use of decalcomania machines, a special form of circular conveyer for decorating purposes and a trend towards firing without saggers.

Although there are considerable variations in unit costs among the companies, these variations are no more than would be expected, when the different operating conditions, equipment and sizes of companies are taken into consideration. It is not to be inferred that the lowest costs are all those of the largest companies. Some comparatively small companies concentrate on a limited number of items and as a result obtain relatively low costs of production. In the other cases, the size of the productive equipment, e.g., number or size of tunnel kiln of one company, may be more closely related to its market demand than the equipment of another to its market. As a result, lower costs are obtained by the better production—sales adjustment.

Coming now to India, we find that the ceramic industry is still in its infancy. So careful planning is necessary and the success or failure depends upon our producing articles at as low a cost of production as possible.

Indian conditions are quite different from Japan and American conditions. The methods adopted there may not be successful here. We will have to adapt those methods to our conditions here.

As regards Indian labour, it is quite good provided proper selection is made and proper wages paid. In the manufacture of crockery articles, there is no tradition as in Japan.

So the way in which the industry could be developed here is to find out the nature of Ceramic raw materials and fuel available at different places in India. Then we will have to find out the type of Ceramic article which could be made.

Throughout India, in all villages, ordinary clay vessels fired to medium temperature are being used. These clay vessels are not strong and besides they are not very fire-resisting ones. If instead of these clay vessels, fire-resisting household porcelain is introduced, then it will replace the metal ones, which will be cleaner, nicer and economical. In Germany at the present moment, due to the shortage of metal, porcelain articles are replacing the metal ones in the kitchen.

A good deal of electrical development is taking place in India and there is a big demand for insulators. At present no factory in India is manufacturing the extra high tension insulators. For manufacturing the above, the impulse and the High Frequency Testing Equipments are necessary. This insulator industry comes under key industries, in as much as each country in the world tries to have its own factory, because in times of war its supply may be affected.

The tendency now in India is that every city likes to have a drainage system to keep the city clean and improve the health of the people and there is a big field for salt glazed pipes. These salt glazed pipes are much better than cement pipes and they withstand acids more successfully.

Also the tendency now in big cities is to use more and more of sanitary ware, which is not only clean but at the same time attractive.

As regards refractories, there is wide scope as Sillimanite which is used to a large extent in refractories occurs in India.

IRRIGATION IN INDIA

Irrigation is artificial application of water to land for agricultural operations. When water is applied to land in the proper quantity at an appropriate season, the results of cultivation are better than if the land were allowed to depend on fitful rainfall. It is a matter of common knowledge that, where rain is seasonal or insufficient or practically nil, the growth of vegetation is unsatisfactory and useless for raising crops. Irrigation is the art of supplying water to aid the growth of vegetation. Mankind has always realised the advantages of irrigation and countries like Egypt and India had advanced very far in the matter of storing water and regulating its flow for agricultural purposes.

The anicuts of South India bear eloquent testimony to the fact that irrigation was the handmaid of agriculture even during very ancient times. During the Mogul period in Indian history several works were completed for the fuller utilisation of the Ganges and the Jumna. There were in existence a large number of inundations, canals, wells, tanks, dams and field embankments before the advent of the British. However, it was only in the 19th Century that modern engineering skill was applied to the development of irrigational works in India. The progress of irrigation from the commencement of the rule of the East India Company to 1880 was very slow. The only attempts worth mentioning were the restoration of the East Jumna and the West Jumna canals in the north, the Cauvery and Coleroon anicuts in the south, and the new irrigational works of the Ganges canal and the Godaveri anicut. Progress was speeded up after the end of the Company's rule and between 1860 and 1880 the Lower Ganges canal, the Agra Canal, the Sirhind canal in the Punjab and the dam at Khadakwazela in Bombay Presidency were undertaken. The Famine Commission of 1880 evolved definite schemes of irrigational works and recommended their speedy completion if India were to be saved from the ravages of recurring famines. The Sutlej and the Chenab canals in the Punjab, the Lower Ganges and the Batwa canals in the United Provinces, and the canals between Cuttack and Hooghly are the results of their recommendations. The Famine Relief and Insurance Fund was created after the Great Famine of 1878 and this fund was utilised for the construction of protective railway lines and irrigational works. The Irrigation Commission of 1901-1903 laid down the general lines of policy and gave detailed recommendations regarding the works under consideration. Some of their proposals were put into effect even before 1914 and in the Punjab the canal colony projects brought large areas of waste land under cultivation. Besides, relieving the pressure of the population on land in certain congested areas, the projects were also remunerative to the Government.

Irrigation and Indian Soil.

It should be remembered that the pace of irrigational progress in India was not always determined by considerations of finance. The very nature of Indian soil has been setting limits on the possibilities of expansion. The Irrigation Commissions have classified Indian soil into (1) "alluvial", covering the Indo-Gangetic plain, (2) "Crystalline" comprising Madras Presidency, Mysore, Orissa and Chota Nagpur, and (3) "Deccan Trap" consisting of the Deccan proper. They pointed out that 25 per cent of the alluvial tract, 15.5 per cent of the crystalline and only 3.2 per cent of the Deccan Trap were irrigated. The big rivers of India flowed through the alluvial and the crystalline areas while in the Deccan Trap rivers were few and canal construction difficult and costly. This fixed a definite limit to the uniform development of irrigational facilities to all parts of India. The formation of the earth prevented canal irrigation in the Deccan which had to depend more on well construction. Since subsoil water is very deep in this area, boring of wells proved very costly and the field embankments for retention of rainwater in the field and prevention of soil erosion were found to be necessary.

Indian Rainfall.

One has to study the nature of Indian rainfall in order to understand the extent and importance of irrigational development in India. Rainfall is not well distributed over the different parts of this vast country or over the different seasons. It is also liable to frequent failures or serious deficiencies. While there are large areas in this country which suffer from drought, there are also vast stretches of land which are devastated by excessive rains. While the Assam Hills have a downpour of 460 inches of rainfall in a year, Upper Sind has to be content with barely 3 inches. The south-east monsoon between June and October causes the greater portion of the rainfall, while during the winter months, the precipitation is very small. During the hot months from March to June, lack of rain is remarkable. Southeast peninsula alone experiences heavy rains during the months from October to December. It happens, therefore, that during one season large areas are flooded with rain, while during the rest of the year the same tracts remain dry and waste. The average annual rainfall in India comes to about 45 inches and the year which records a deficiency of 25 percent is classified as a "dry year", and the year with a deficiency of 40 percent is classed as one of "severe drought." The experience of agriculturists points out that one year in five turns out to be a dry year and one in ten happens to be a year of severe drought in large tracts of certain provinces. In Madras, the Punjab, N.-W.F.P., Sind and in large portions of Bihar, U.P., and Bombay the rainfall has often been uncertain and untimely. Another defect of Indian rainfall lies in its concentration during a period when growing of rabi crops is impossible. This has resulted in a low yield of cereal crops in India.

Advantages of Irrigation.

Irrigation has, therefore, been the only instrument for correcting the vagaries of rainfall during the seasons and enabling agricultural yield to increase to the fullest possible extent. There are certain valuable crops like sugarcane which can be grown only with supplementary watering and irrigation therefore serves not only to increase the output of cereals, but it enables the cultivation of new varieties of cash crops. Certainty of water supply ensures security to cultivation, reduces the effects of vagaries of seasons and rainfall. Historically, irrigation provided a weapon to ward off famines and caused the extension of cultivated and cultivable areas. The yield has invariably increased beyond expectations. The cultivator who is enabled to shake off his fear of famines is prepared to sink more capital on land and improve his methods of cultivation. One has only to study the methods of cultivation adopted before and after the completion of an irrigational canal to see how irrigation makes for intensive cultivation. Better methods of cultivation are adopted, more attention is paid to fertilisers and more remunerative crops are grown. Often irrigation led to the expansion of non-food crops at the expense of food crops because they were more paying. The necessity to pay water rates and the extra rent in irrigated areas naturally induce the cultivators to prefer cash crops to crops needed for his own consumption. Everywhere, the major irrigational works have directly helped the commercialisation of agriculture and encouraged the tendency to grow high priced crops for the market instead of producing for the immediate needs of the agriculturist's family. Irrigation brings agriculture more closely within the network of internal trade and international commerce. In as much as provincial revenues in India depend on agricultural resources, the relation between irrigation and provincial finances is indeed very close. Irrigation helps the ryot to avoid debt and keeps him busy over land throughout the year. State revenues are increased with agricultural progress and national taxable capacity increases indirectly. Lack of irrigation increases the weight of famine relief expenditure, lowers the purchasing power of the masses and hence reduces imports and receipts from customs duties and income-tax. Extension of irrigation reduces the frequent migration of destitutes and relieves the pressure of population in favoured spots.

Irrigation is not entirely devoid of dangers. Any extension of irrigation without good drainage system during and after the construction of works, would lead to sevearal diseases which result from waterlogging. When big irrigational works were constructed in U.P. and the Punjab, a kind of saline efflorescence called "reh" rose to the surface of lands and reduced the fertility of the area. A good system of drainage has, therefore, to go hand in hand with irrigational works

Progress of Irrigation in recent times:

There has been a rapid extension of irrigation in India during the past sixty years. The increase in the total area under irrigation in India in the last half century is as below:

1880 ..	29	million acres
1903 ..	44	" "
1913-14 ..	46.8	" "
1929-30 ..	51.01	" "

The figure rose to 51.64 million in 1936-37 and stood at 54.95 million acres in 1939-40. In 1929-30 nearly 19.5 percent of the total area sown in British India was under irrigation and in 1939-40 the percentage rose to 22.4 per cent.

There are three forms of irrigation in India, namely, canals, tanks, wells. The progress in respect of the three methods of water supply is indicated below:

Acres irrigated (000 omitted)	1929-30	1939-40
1. *Canals*		
Government ..	23,863	25,128
Private ..	3,387	3,886
2. Tanks ..	6,100	5,863
3. Wells ..	12,680	13,492
4. Other sources ..	4,943	6,575

It can be seen from the above table that there has been a progress in canal irrigation and well construction; but tanks recorded a decline during the decade before the war.

India possesses the largest canal system in the world. In 1939-40 nearly 55 million acres were under irrigation in British India and of this 29 million acres were irrigated by canals, 13.5 million acres by wells and 5.9 acres by tanks. In the same year the total mileage of canals and distributaries under productive irrigation works was 58,231 and under unproductive works 15,054, irrigating only 40 million acres. The Indian canal system consist of perennial and innundation canals. Progress lies in gradually decreasing the latter and replacing them by the former. The perennial canals of Northern India which derive their supply from the snowy mountains are more reliable than the inundation canals which follow the monsoon.

30 percent of the irrigated area in India are served by the numerous wells dotted all over the country. In 1938-39 there were 2.6 million wells in use; while Bengal has practically no well irrigation, the U. P. Madras and the Punjab have extensive use for them. Out of the 13 million acres irrigated by wells, 5.5 millions were accounted for by the U.P. 4.3 million by the Punjab and 1.4 millions by Madras. Generally, well water is utilised for raising high-grade crops because the cost of lifting water is high. It is also noted that lands irrigated by wells produce at least one-third more than the areas served by canals. Extension of canals decreases the importance of wells to some extent, but the spread of canals increases the store of sub-soil water and thereby raises the capacity of wells for irrigation purposes.

Tank irrigation is most widely prevalent in Madras. In 1939-40, 5.9 million acres in British India were served by tanks. Of this, 3.0 millions are accounted for by Madras while the shares of Bengal and Bihar are 1.4 and 1.0 millions respectively. Generally, tanks have not been a satisfactory source of irrigation. Often when the rainfall falls short of expectations, the tank storage also fails with the result that during the years of famine, agriculturists cannot turn to them for relief.

India possesses some of the largest irrigation schemes in the world. The most important amongst them are the Lloyd Barrage works of Sind, the Sutlej Valley works in the Punjab and the Cauvery—Mettur project of Madras. The Lloyd Barrage near Sikkur consists of a barrage across the Indus extending to a mile feeding three canals on the right bank of the river and four on the left. The works were completed in 1932 at a cost of Rs. 24 crores and irrigates nearly 5½ million acres. The Sutlej Works involved an expenditure of Rs. 32.31 crores and irrigates 5,103,000 acres. Of this, over 1,942,000 are in British India and 2,825,000 are in Bahawalpur and 341,009 are in Bikaner. The Cauvery-Mettur system completed in 1934 is known to be the biggest in the British Empire and the largest single block masonry reservoir in the world. It has a storage capacity of 93,500 million cubic feet. It has improved water supply over a million acres and brought 301,000 acres into the range of irrigation. The Cauvery system and the Kanniambadi dam have succeeded in utilising as much as 80 percent of the flow of the Cauvery for productive purposes.

Crops and Irrigation.

That the progress of irrigation during the period of 1929-30 to 1939-40 has directly helped agriculture can be clearly seen from the following table:—

Area Under irrigation in British India (Burma excluded)*
(in thousands of acres)

	1929-30		1936-37		1939-40	
	Irrign.	*Total area*	Irrign.	*Total*	Irrign.	*Total*
Rice	18,778	66,537	17,397	69,044	19,093	70,101
Wheat	10,640	24,700	10,347	25,250	12,719	26,128
Barley	2,959	7,027	2,315	6,531	2,829	6,101
Jowar	1,654	22,742	1,362	24,013	1,442	21,677
Bajra	1,515	13,291	940	11,451	1,216	13,362
Maize	1,250	.. 6,552	983	5,742	1,369	5,776
Other cereals & pulses ..	6,460	29,635	6,770	23,791	6,804	28,816
Sugarcane	1,690	—	2,627	—	2,252	—
Other food crops ..	1,637	—	1,584	—	1,818	—
Cotton	3,206	—	4,245	—	3,901	—
Other non-food crops ..	5,072	—	5,400	—	6,192	—

*Represents area irrigated at both harvests.

1840—1943

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If 1939-40 is compared to 1929-30 it can be seen that the acreage under rice, wheat, maize, sugarcane, cotton and other crops have recorded rapid extension while barley, Jowar and Bajra alone show decreases. On the whole, food crops and cash crops have shown marked improvement under the impulse of irrigation. The total area under irrigation has increased by 5.5 million acres. The progress of all food crops since 1936-37 is very marked.

The value of the crops raised by Government irrigational works and the degree of importance of irrigation to different areas are shown in the following table:—

	Area sown 000 acres	Area irrigated by Govt-works 000 acres	% of area irrigated to total area sown	Capital cost of Govt. irrig & navign works to end of 1938-39 (in lakhs of Rs.)	Estimated value of crops raised in 1938-39 on areas receiving State irrgt, (in lakhs of Rs.)
Madras ..	35,961	7296	20.29	20,35	20,42
Bombay ..	27,920	439	1.57	10,78	318.3
Bengal ..	30,022	113	0,37	5,32	58
U. P.	35,462	5307	14.96	29,62	29,64
Punjab ..	28,845	12354	42.82	37,98	39,00
Bihar ..	17,978	700	3.5	3,56	2,93
C. P.	20,900	325	1.6	679	84
N. W. F. P. ..	2,453	478	19.48	315	186
Orissa ..	3,297	401	12.2	330	126
Sind ..	5,486	4743	86.45	30,20	873.7
Rajputana ..	313	14	4.54	30	3.4
Baluchistan ..	478	145	30.2	145	16.7
Total ..	209,119	32,314	15.45	1,52,80	10,865.1

While the average for British India is as low as 15.45% the percentage of irrigated area to total area sown comes to 86.45 for Sind, 42.8 for the Punjab and 30.2 for Baluchistan and 20.20 for Madras. The Punjab leads from the point of view of the area irrigated by Government works, the value of crops raised from State irrigated lands and the amount of money sunk in Government capital works. The Government have spent enormous sums in the Punjab, U.P., and Madras while Bengal's place is very insignificant. Hardly 1% of the area sown is irrigated in Bengal, since her chief problem there is one of floods and schemes of regulating floods are the prime requisites of this province.

Irrigation Finance.

The development of irrigation became a provincial responsibility since the introduction of the Montford Reforms. Works costing less than Rs. 50 lakhs could be undertaken by the Provincial Government, but those exceeding that limit have to be approved by the Government of India, and the Secretary of State. The old classification of canals into "productive", "protective" and "minor works" was abandoned in favour of a new division "productive" and "unproductive" All irrigational works which are expected to yield, within ten years after their completion, sufficient revenue to cover their working expenses and interest on capital outlay, came under the first category and the rest were under the second. In the matter of raising loans for works, the old restrictions were abolished and since 1920 all works could be financed by loans.

Even from the point of view of provincial finances, the value of irrigation works does not rest on the direct revenues accruing from them. Great importance is attached to the indirect value of irrigation which, during the years of drought, saves agricultural population and cattle and obviates expenditure on relief measures and remissions. In normal years, irrigation increases the productivity of the soil, adds security to agricultural operations and increases national

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income by more than the cost of irrigation works. In as much as it raises national income, it tends to increase the yield from other government taxes besides the land tax and water cess. If the purchasing power of the ryots is increased, it will indirectly lead to greater imports, larger receipts from customs duties and income tax and the transport system of the country would also reap their own share of the prosperity. Agriculture is the foundation of national prosperity and its depression or improvement generally affects the different facets of national life. There has been a controversy whether the charges for irrigation water are not in the nature of a tax. An analysis of the irrigation finance from the point of view of productive and protective works reveals that the charges for water under protective works are in the nature of a subsidy to agriculture while the rates under the productive works contain an element of taxation. It should be remembered that on the whole, irrigation water is offered on terms which are very favourable for the cultivators. The charges for water represent only a very small part of the extra profit which accrues to the agriculturist.

The charges for irrigation water in different provinces are not based on any uniform principle. In some areas the water charges are included in land revenue while in some others they are levied separately. Since irrigation has been almost wholly responsible for the agricultural progress of Sind and since 90% of the land revenue in this province is the direct result of irrigation, the water charges are included in the land revenue assessment. In parts of Madras, the U.P. and Bombay different rates of land revenue are applied for the 'wet' or irrigated lands and 'dry' or unirrigated lands. Over a great part of India water rates are levied separately calculated according to the quantity of water used and the nature of the crops raised. Wherever the cultivator has to lift the irrigation water on to his field the charges are lowered, cost of service, area served, the nature of the crops and their prices, the failure of rainfall or any other untoward happening which destroyed the crops, all these are taken into consideration when the water rates are fixed. In the U. P. the rates for different crops are as follows: Rs. 12 per acre (flow) and Rs. 4 per acre (lift) for sugarcane; Rs. 5 for wheat, Rs. 2-8 for barley and Rs. 3 for flour and Rs. 1-8 for lift water supply for Kharif crops. In the Punjab rates varying from Rs. 7-8 to Rs. 12 per acre under sugarcane, Rs. 4 to Rs. 7-8 under rice, from Rs. 3-4 to Rs. 5-4 for wheat, from Rs. 3 to Rs. 4-4 for cotton and from Rs. 2 to Rs. 3-4 for millets are charged. In the C.P. and certain parts of Bengal, cultivators pay a small rate for a term of years irrespective of the water used and when they actually require water they would get it. This system called the long-lease system is peculiarly fitted for these parts, because here normally there is no need for irrigation. The rates are more in the nature of insurance against a bad day which may or may not come frequently. Recently, the basis of fixing water rates have come in for some criticism and suggestins have been put forward for improvement. Firstly, since water is an important element in the cost of cultivation, the rates for water should be directly related to the changes in the prices of the crops raised. Secondly, since the general taxpayer, the landholders and the cultivators are alike benefitted they must all share the expenses of irrigation. Thirdly, the charges for water should be revised more frequently so as to make the rates conform to the changing prices of the crops.

Recent Developments.

Though the area under irrigation has been rapidly extending since the beginning of this century, the fact remains that today 76% of the cultivated area is devoid of irrigational facilities. It has been estimated that more than 95% of the cultivated land in C. P. Berar, Bombay, Coorg and Baroda are not protected by irrigation. While on the one hand, the excessive dependence on rainfall still remains, the problems of drainage, soil erosion and waterlogging offer great scope for improvement. The planless destruction of Indian forests during the earlier part of the last century has brought the evils of soil erosion particularly in riverine areas of North India. With regard to the U. P. Dr. Mukherjee remarks as follows: "In these Provinces alone, the amount of ravine lands, formed as a result of soil erosion and excessive drainage has been estimated at about 8 million acres. Usar lands formed as a result of waterlogging, shallow tillage and defective soil aeration represent another 5 million acres in the United Provinces alone. On the other hand, waterlogged miasmatic wastes expanding in North Bihar and Bengal are swallowing up what were once prosperous agricultural areas, threatening about two-fifths of the latter province with decay and ruin." These and other problems are yet to be tackled effectively on an all-India basis.

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The war has, however, given a fillip to irrigational progress in India. With the loss of foreign sources of foodgrains and with the soaring prices, the importance of agricultural improvement has been widely recognised. The grow-more-food campaign was inaugurated in 1941 and all the provinces and the States are now straining every nerve to improve irrigation so as to ward off the evils of impending countrywide famine. In the Punjab for instance, the Government have drawn up a new Land Reclamation Scheme with a view to reclaiming government lands which are uncultivable at present owing to the presence of a large proportion of saline elements. Extra water would be allowed for the cultivation of rice crops first and then grams and leguminous crops would be raised on the land reclaimed. Already during the year 1942-43, 19,000 acres were reclaimed and more than five lakhs maunds of rice were produced in those areas. *Sind* has an ambitious programme for bringing four lakhs of acres into rice cultivation, thus increasing the output of vital goodgrains by about four lakhs of tons. The Government of India is expected to grant Rs. 50 lakhs for the purpose and the Government of Sind would utilise the receipts secured from trading in foodgrains as their contribution for the scheme. If the project is successfully completed within a short time, there is no doubt that Sind would have conributed a great deal to alleviate the food crisis in the country. The *U. P.* have planned to extend and improve the distributaries in the Meerut and Bulandshahi divisions of the Ganges canal, the Fatehpur, Narora, Cawnpore, Etawah and Mainpuri divisions of the lower Ganges canal and certain divisions of the Jumna canal. 36,350 acres of rabi and 17,750 acres of kharif are estimated to be brought to use and the total cost of the works comes to about Rs. 3,12,000. Efforts are also made to construct two hundred new tube wells to irrigate an additional area of 50,000 acres. *In Bengal* the problem is not so much the supply of water, as regulation and controlling of recurring floods. A suitable scheme of afforestation and construction of embankments are badly needed in this province. The year 1943 is one of terrible famine and floods and the Government have now come forward to attend to the irrigational requirements of the rural areas. Each District Officer has been empowered to spend up to Rs. 10,000 for schemes of irrigation and drainage improvement. On May 5, 1943, a press note stated that "in almost every district a number of minor irrigation or drainage works is awaiting execution which are likely to help materially in increasing the production of food crops." Minor irrigation works are really valuable in several parts of Bengal and the re-excavation of tanks would greatly increase the yield of crops and bring greater rabi areas into use. Of late, the Government is relaxing their principle that every development measure must be paying itself and steps are taken to supply water cost-free The latest *Hyderabad* budget has allotted Rs. 12 lakhs for restoring 810 tanks capable of irrigating 58,000 acres. The Public Works Department of the Nizam's Government have on hand four new irrigation projects as priority measures and when they are completed four districts would increase their output of foodgrains. *Cochin* has taken active measures to increase irrigational facilities and the Challakudi Irrigation Scheme will shortly be put into operation at a cost of Rs. 11 lakhs. 25,000 acres are thus to be benefitted. The *Madras* Government have granted Rs. 5 lakhs during the current year for the construction of an anicut in East Godavari District, a tank project in Coimbatore and tank improvements in Salem. While thus the provinces and states are struggling hard to extend irrigation, there is also a move to evolve detailed schemes for the whole of India to be put into effect in the course of a year or two. Sir William Stampe, the Irrigation Adviser to the Government of India, has submitted a lengthy memorandum detailing plans for emergency schemes and long-term irrigation projects. There is ample scope for construction of tube wells and deepening of the tanks now in existence. Large quantities of rain and river water are still being wasted in India during the flood season. Not much progress has been achieved in the matter of lifting water from low level rivers. Very often lack of finance and administrative delay blocked the rapid execution of irrigational schemes. Large engineering works seem practically impossible today, owing to lack of equipment in India and the acute shipping difficulties of the Government of India. Yet, since the need to speed up agricultural production is very urgent, it is hoped that Government would not only provide financial assistance, but also grant the necessary priority for importing the plants and machinery needed for irrigational works. The agriculturists should play their part by forming provincial agricultural associations to prepare detailed schemes for extension of wells, tanks and canal irrigations. They can also achieve a lot by co-operative enterprise amongst themselves and help the Government in agricultural progress.

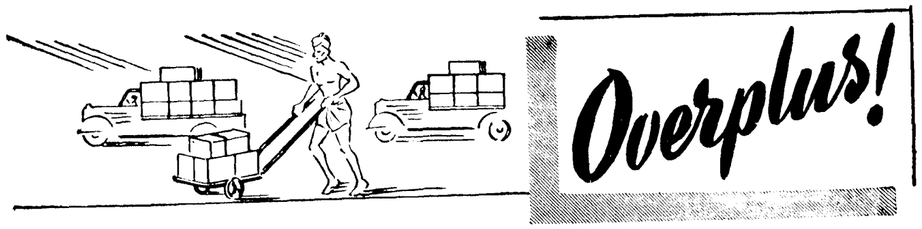
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INDIAN AGRICULTURE AFTER FOUR YEARS OF THE WAR

Four years of the war have fully revealed the defects in Indian economy in general and the unsatisfactory condition of our agriculture in particular. Few of us realise that our agriculture had been suffering, even before the outbreak of war, what may be called a process of erosion which unfitted it more and more for serving the needs of the whole population during a crisis. Scrutiny of available statistics shows that agricultural production in India at the outbreak of war was so low that even were there no war to increase our normal needs the gap between production and population would have made itself felt. War has in fact presented more than one incentive for increasing the production of foodstuffs. Rising prices, growing scarcity, increasing demand from within the country and from abroad, greater profit margin for producers—these encouraging factors did not have on agricultural activity, the effect one would expect. Even currency inflation in so far as it worked for pushing up the price level during the first two years of war had not been without a salutary effect on agriculture: though the scale and the pace at which inflation has been pursued in India actually retarded economic development since 1941-42. Even if we set a discount on inflation as a help to economic development, the strength of the forces which could reasonably be expected to increase production could not be underrated. Yet the food crisis is prevalent all over this country; and the severe famine in Bengal, Madras, Rajputana and other regions indicate a certain amount of inertia in our economic system. The unresponsiveness of our agriculture to war time needs is a factor that should be critically examined by those who are trying to reconstruct Indian economic life in post-war years.

The following table shows the increase or decrease in the acreage and outturn of certain important foodgrains:—

BRITISH INDIA AND STATES (BURMA EXCLUDED).

JUTE.

Year.	Area in 1,000 acres.	Outturn in 1,000 bales.
1939-40 ..	3,161	9,750
1940-41 ..	5,669	13,186
1941-42 ..	2,160	5,474
1942-43 .	3,297	9,015

CASTORSEED.

		Tons.
1939-40 ..	1,005	97
1940-41 ..	1,021	105
1941-42 ..	958	91
1942-43 ..	1,352	147

RICE

1939-40 ..	74,225	25,500
1940-41 ..	73,059	22,150
1941-42 ..	73,579	25,351
1942-43 ..	74,919	24,533

COTTON.

		Bales.
1939-40 ..	21,580	4,909
1940-41 ..	23,286	5,903
1941-42 ..	24,151	6,127
1942-43 ..	18,812	4,554

LINSEED.

BRITISH INDIA AND STATES (BURMA EXCLUDED).

Year.	Area in 1,000	Outturn in 1,000 Tons
1939-40 ..	3,715	466
1940-41 ..	3,619	434
1941-42 ..	3,348	361
1942-43 ..	3,408	411

GROUNDNUT.

	acres.	tons.
1939-40 ..	8,410	3,165
1940-41 ..	8,770	3,702
1941-42 ..	7,070	2,586
1942-43 ..	7,431	2,714

SUGARCANE.

1939-40 ..	3,640	4,662
1940-41 ..	4,598	5,794
1941-42 ..	3,515	4,371
1942-43 ..	3,590	5,692

SESAMUM.

1939-40 ..	4,031	415
1940-41 ..	4,097	433
1941-42 ..	4,145	414
1942-43 ..	4,328	463

RAPE & MUSTARD.

1939-40 ..	6,113	1,117
1940-41 ..	6,218	1,193
1941-42 ..	6,204	1,080.
1942-43 ..	5,784	1,043

WHEAT.

1939-40 ..	34,009	10,767
1940-41 ..	34,849	10,027
1941-42 ..	34,039	10,037
1942-43 ..	34,298	10,971

MILLETS (BR. INDIA).

(Acres '000 omitted).

Crops.	1939-40	1942-43
Jowar ..	21,676	21,924
Bajra ..	13,362	16,055
Maize ..	5,765	6,318
Gram ..	11,690	13,300
Barley ..	6,101	6,695

If 1942-43 is compared with 1939-40 we find that jute, castor seed, rice, sesamum and wheat have increased in area while groundnut, sugarcane, cotton, rape and mustard and linseed have recorded a decrease. Examining the figures from the standpoint of outturn, we find that after three years of war, jute, groundnut, rice, cotton, rape and mustard, and linseed have shown a decline, while castor, sugarcane, sesamum and wheat could boast of a level higher than that of 1939-40. The declining trends in rice and wheat during the first three years should be specially revealing. Acreage in 1942-43 hardly registered an increase of 1 per cent over 1939-40, while the actual output of rice had decreased by 5 per cent, with wheat more or less stationary.

INERTIA IN INDIAN AGRICULTURE

The failure of production to register an increase can be attributed to a chronic inelasticity in our economic system. When we are faced with shortages of essential foodstuffs we are content to look for an explanation in the cessation of imports of rice from Burma or the need to help neighbouring countries like Ceylon. But it is not realised that, if the basic economic conditions were healthy, a vast agricultural country like India should be able under the twofold pressure of high prices and insistent demand amounting to national emergency, to expand its production considerably, even if it should fail to meet increased demand in full. Within a year of the war, Great Britain drastically reduced her dependence on imports of foodstuffs. The U.S.A. could speed up her agricultural production to meet the exigencies of war demands. India presents a contrast in this respect and actually as the war progressed her agricultural production showed signs of stagnation and decline. Even in normal times agriculture throughout the world exhibits certain amount of irresponsiveness mainly due to the fact that in agriculture, as different from manufacturing industries, the dependence on nature is very great and the Law of Diminishing Returns operates at an early stage in production. The uncertainty of output, the dependence on rainfall, the periodicity of operations and the time-lag between the period of incurring expense and the period of reaping the benefits and, above all, the inelasticity of demand for agricultural products in general—these are conducive to irresponsiveness in agriculture. The very factors of production are not clearly differentiated in agricultural operations. The cultivator is the capitalist, manager, labourer, all rolled in one. Nor does he produce mainly for the markets. The severe competition observable in the factors which operate in manufacturing industries are not found in agriculture. These special characteristics make it less sensitive to short-term incentives. While this is the case with agriculture even in advanced countries, the position in India is much worse. Indian agriculture had too many handicaps to show signs of development. The extreme poverty of the ryots, the primitive methods of cultivation, enormous pressure on the land, small size of the holdings, heavy tax burden, the cultivators' illiteracy and want of organisation, these are powerful factors which make Indian agriculture impervious to quick development during a period of stress or emergency. The wide variety of soil conditions and land tenures has added another factor in reducing its resiliency to increased demands on it. It should also be noted that the depression years from 1929 had pushed down the agricultural prices to rock bottom levels. During the decade before this war there had been an accelerated increase in the expropriation of land from the small cultivators to larger land-owners, or money-lenders and the number of landless labourers had been increasing at a rapid rate. The high mortality of cattle and lack of scope of small scale industry to add to the meagre income of the ryot made the situation worse. Long used to Government indifference, the Indian ryots were left to the ravages of nature and they never learnt the art of responding to sudden emergencies by themselves. That Indian agriculture was absolutely unprepared for wartime pressure could be seen from the fact that in 1939 the rice and wheat supplies were inadequate for the population and the agricultural prices and agricultural income were abnormally low.

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COMPLACENCY TO CRISIS.

The impact of the war on India's agriculture brought out most clearly our lack of capacity to foresee coming developments, not to speak of providing for them. The comfortable assumption that the experience of this war would be similar to that of the last one proved dangerous as the events moved quickly to smother international trade. The first period of the war which ended with the fall of France saw a large demand for India's exports. Thereafter the countries brought under the scope of British blockade tended to increase in number and the blockade together with the shipping shortage brought about a shrinkage in exports. The producers who were quick to expand during the first period of rosy expectations were not able or willing to reduce their production to the levels indicated by the rapidly deteriorating trends. Groundnut producers were in despair just after the sudden disappearance of continental markets and producers of raw cotton looked wistfully at the Indian Cotton Textile Industry to make up for their loss of foreign markets. One factor which complicates the correct examination of the response of Indian agriculture to major events of this war is that the effects of the loss of foreign markets were by no means evenly distributed over all our staples. In the case of jute the demands of the British Government and the Allies sufficed to support production at more or less normal levels. Cotton found in the expansion of the local industry some compensation for the lost foreign markets. Groundnuts were entirely in the lurch and the Government did not make a start for establishing a vegetable oil industry. One factor which operated on all export trades was the ever-tightening noose of shipping shortage and the favoured position which the command of shipping and the absence of other buyers alike conferred on Britain and the British Government. The importance of a national merchant fleet in times of crisis was fully brought out. For some time compensation for the loss of export trade was obtained, though partially, with the organisation of the Eastern Group Conference and the allocation to India of the definite responsibility of finding the requirements of the Eastern Group countries.

The next crucial stage in the development of a war economy for agriculture was reached when Japan entered the war. The obvious effect of a war with Japan was the loss of a market for 1,500,000 bales of our short staple cotton. When Burma was lost, India was cut off from her normal source of supplies of 14 lakhs tons of rice. With the reduction in supply and the increase in requirements consequent on our having to feed the ever-growing military establishments in India and to supply neighbours like Ceylon, the food situation began to cause more and more concern and prices of foodgrains shot up with all the consequences of increase in cost of living, economic suffering, dearness allowances, etc. The pressure that was exerted by the war conditions on our chief foodgrains was naturally transmitted to the minor foodcrops and to the millets and grams which are sown all over the country. Thus nearly all the products of Indian agriculture have been drawn into the vortex of war conditions. The scarcity of foodgrains assumed supreme importance and the country was sliding downhill to a pit of disaster. The half-hearted measures at price control, the exports of foodgarins to the mideast, Russia and other countries while India's millions were starving, the increasing difficulties in transport, lack of a bold agricultural policy to speed up production—all these ended in an almost nation-wide famine. The Grow More Campaign could not galvanise our agricultural efforts in time, and the scarcity in foodstuffs as well as the absence of cooperation between the Centre and the Provinces, took a heavy toll of human lives in Bengal, Bihar, Malabar, Rajalaseena, Rajputana and other areas. Since August 1942, frantic attempts are being made to extend cultivation and to increase the outturn of foodgrains. The Government of India now claim that the area under foodgrains has increased by eight millions acres and that the future is therefore not dark and dismal.

At the outbreak of war the commercial crops had experienced a spurt at the expense of food crops. In 1940-41 the area under groundnut, jute, castor, sugarcane, sesamum, cotton, rape and mustard recorded increases over 1939-40. In Bengal jute seemed to have thriven at the expense of rice during the first year of war. Since the war on Japan the tide turned and the tendency for foodcrops to expand at the expense of non-food crops has gathered strength and, with the usual time lag characteristic of agricultural

fashioning

A NEW WORLD



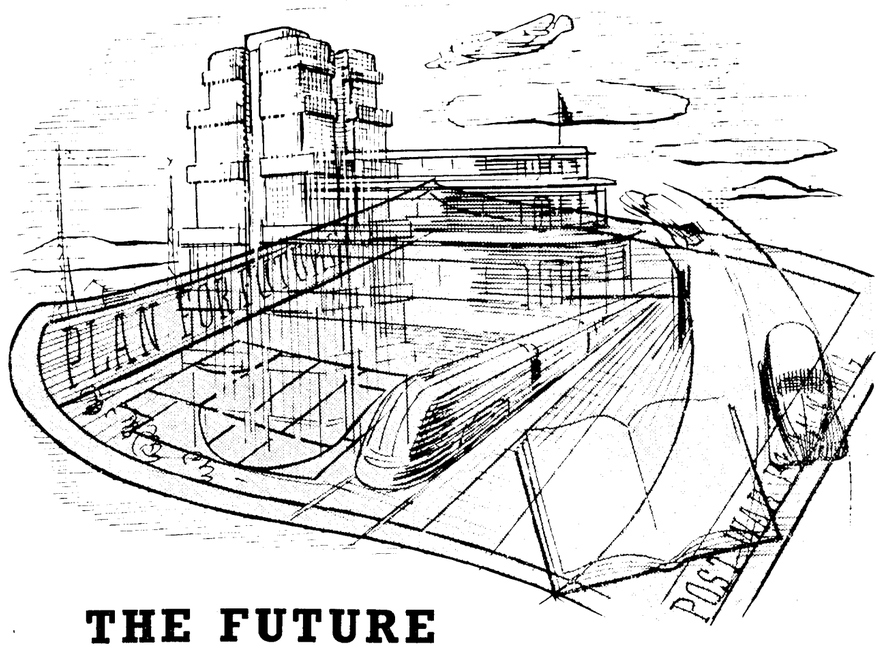
NOW, when the war is on the way to a victorious termination it is the time to plan for a better and happier world. The war has compelled us to sacrifice many of our comforts and habits, but the day is fast approaching when most of these temporary discomforts will cease to exist. During this war, there have been many inventions, and many an improvement has been made on machine and material which shall further the quality of our future products.

To-day, we can make a definite promise to our customers that our post-war products will put them in the front line of fashion and will ensure better comfort and durability.



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THE FUTURE

starts to-day . . .

Each of us is busy with immediate problems. But every problem for the executive of to-day has its place in the development of the future. There is nothing which we do to-day which does not form part of the pattern of to-morrow.

How far we make this a conscious and planned process is a measure of our sense of responsibility for the years of development ahead. When the war is won, when peace is made, when the main considerations of politics in this country are constructive ones, then there will be work for us all to do. That work needs planning and our best time to plan is now.

If we sit doing nothing, if we "mind our own business," anticipating that Government will have everything worked out for us, we overlook the fact that Government is, almost 100 per cent., engaged in war and all its attendant difficulties. Its attention cannot be diverted. So it is up to us. We have got to take the burden on our minds, if not yet fully on our shoulders, of India's future development, and we cannot narrowly limit our consideration to such development as we think particularly affects our own business.

There is much to be done: road development and efficient distribution, airways and speedier communications, radio and rural improvement, education and health, employment and the progress of the worker. The list is long and time is short. Can we not, severally and together, ponder these problems, prepare our plans and assist Government by placing at its disposal the benefit of our experience and knowledge ?

LEVER BROTHERS, in their programme of development, will welcome association with others whose aims are similar.

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operations, the benefits of this move are beginning to be felt only just now.

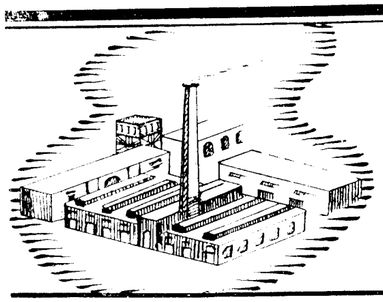
AGRICULTURAL PRICES AND INCOME.

It will be very useful to examine if the war has really benefited the Indian agriculturists in view of the claims by Mr. Amery and other interested persons who are never tired of pointing out that the Indian ryots have prospered during the past four years. That there was hardly room for any prosperity to enjoy was clear from the fact that at the outset of the war Indian agricultural prices were unprofitably low. While food production was precariously deficient, the agricultural raw materials were entirely at the mercy of foreign markets. India had to increase her imports of foodgrains to meet internal demand and there was not much scope for extensive cultivation. Intensive cultivation depended on fertilisers and chemicals and these were almost entirely imported from abroad. Above all the Government of India had neither an agricultural policy aiming to help the ryots nor an industrial policy which would have greatly alleviated agricultural distress. The policy of drift and masterly inactivity did not materially help the land-owing classes Following the trend of agricultural prices we find that during the first four months there was a speculative rise particularly in the prices of commercial crops. But soon disappointment came to be felt as the war demand failed to materialise to the anticipated extent and the rapid move of unfavourable military events depressed the price of cash crops. It is noteworthy that while the cost of living was rapidly rising during the period January 1940 to May 1941 owing to fall in imports and the switching on of our industries to war effort, the agricultural prices during the same period declined from 145 points to 106 points in August 1940. Jute, for instance, which recorded 254 points in December 1939 came down to 86 in November 1940. In April 1941 the prices, particularly of non-food crops, were not very attractive and the position improved after May. But it is often forgotten that while the agricultural prices were no doubt going up the prices of manufactures recorded greater jumps. The erratic food control policy of the Government, the increase in cost of cultivation (owing to absence of fertilisers, steep rise in the price of cattle, the scarcity of agricultural implements and the woeful lack of rural transport), the drive for raising subscriptions for war funds, etc., increased taxation and a host of other factors depressed agriculture. No doubt a kind of boom was felt by the land-owing classes when the land values increased phenominally and cash flowed into their hands. But it should not be forgotten that a great majority of our agriculturists consists of landless peasants and the percentage of landowners owning economic holdings is extremely low. The famine has clearly shown that the landless cultivators were the worst hit during the period of rising prices and in several parts of India petty landlords had to sell away their lands under the stress of the evergrowing cost of living. The owners of small plots never hand much of a surplus to sell; but they had to find more money for purchasing their requirements. The scope for hoarding gold or silver has been drastically reduced and the only alternative for the few prosperous sections of our agricultural community was possibly to consume slightly more of the foodgrains they produced and pay off the accumulated debt. Decrease in agricultural indebtedness has been clearly indicated in the reports on the working of co-operative societies and Land Mortgage Banks in several provinces. Actually the cultivator was hardly able to utilise the war time profits for permanent improvement of agriculture. On the other hand the rise in the price of foodgrains was a forceful factor in increasing the cost of living index in every city and town, and the necessity to pay dearness allowance, etc., hastened the inflationary spiral. Agricultural prices have therefore been inflationary in effect and this tendency was particularly marked since 1941-1942.

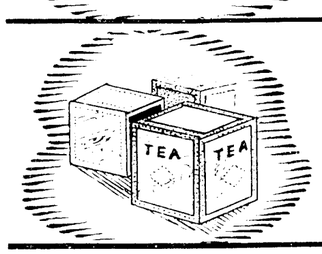
The effects of the war on our agricultural income have no doubt been different at different stages. While at first there was a rise in the prices of our export staples, it was followed before long by the loss of a number of foreign markets. The increase in the consumption of our raw materials by indigenous industry did not suffice to prevent either a fall in prices or the need to restrict the acreage under such raw materials. But the change-over from cash crops for export to foodcrops for home consumption was not attempted till the loss of Burma and the consequent stoppage of imports of rice aggravated the food problem. Clearly Indian agriculture is now faced with the need to effect a redistribution of acreage between the various staple crops. Since these changes will be achieved in a regime of price control and official distribution of foodstuffs and probably even raw material, it is more than doubtful if the Indian cultivator will in the end be found to have benefited from the war to the same extent as the industrial workers. In the first four years of war the agriculturists in general might have benefited a little at certain periods and might have suffered during other periods; but there is hardly any doubt that on balance they have not prospered enough to face the future with confidence and hope.

AN AGRICULTURAL POLICY FOR INDIA.

The critical times through which the country has been passing underline the urgency of a clearcut agricultural policy for India. The immediate problem, which has to be faced here and now, is the nationwide scarcity of foodstuffs and the satisfactory distribution of grains to the different areas. The inexorable move of events has shown that India should learn without any more delay the valuable lesson learnt by almost all western countries fifteen years ago, *viz.*, that self-sufficiency in the matter of foodstuffs is not a luxury but a prime requisite for national strength and efficiency. If it is contended that India is at present overpopulated, then there can be no escape from the necessity of evolving a short-term agricultural policy to speed up the outturn of foodgrains at all cost. This would involve immediate attention to two problems in particular, procurement of adequate fertilisers and supply of agricultural implements to the cultivators. War has raised the question, *viz.*, are we to work for a suitable land utilisation policy calculated to increase the productivity of the soil and increase the output of foodgrains to keep our growing millions in health or are we to allow a drift towards unplanned commercialisation of agriculture, encouraging the non-food crops which intensify our dependence on world factors and subject our economy to the ravages of depressions and booms even during peace time? No doubt the answer to this question cannot be simple. Non-food crops have in the past helped in absorbing the surplus labour from villages. Further, while it is possible and even desirable to switch on to food crops at the expense of cash crops during war time, we cannot be sure if, when the normal currents of international trade are restored after the war, this policy could be profitably continued. Anyway, while it may be too early to envisage the trends of postwar agriculture it is not a day too soon for increasing food production. War or no war, India requires great deal more of grains, milk, fruits and other products to keep her children healthy and strong. This must be borne in mind by all those who are aiming at India's prosperity. A long-term agricultural policy is no doubt supremely important to solve permanently the basic needs of this vast sub-continent. The chief defects of our economy are low productivity of agriculture and excessive dependence of population on agricultural persuits. It is clear, therefore, that agricultural improvements are intimately related to industrial progress. More than 30 per cent of the people depending on agriculture at present require to be drawn into industries and a well-thought-out plan for starting key industries, medium and small-scale industries in India would go a long way in reducing the excessive fragmentation of agricultural holdings, in increasing the agricultural income and in inducing the ryots to adopt better methods of crop rotation. Agrarian reform, the dead weight of agricultural indebtedness, the recurring famine and pestilence, these are problems which cannot be faced by individual initiative but can only be solved by Government's activity. The sorry state of affairs in Indian agriculture is the result of decades of negligence. It can be set right only by the State interfering for a radical transformation.

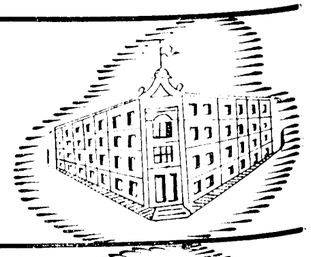


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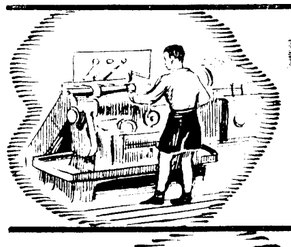
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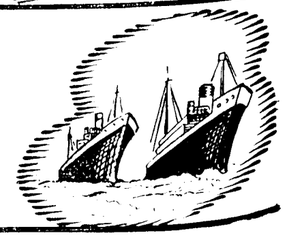


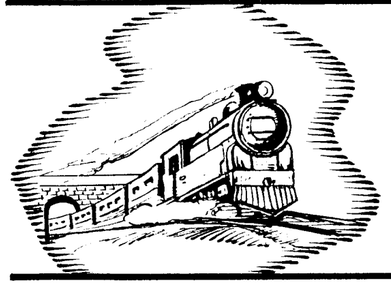
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MANURES FOR MORE PRODUCTION

War has demonstrated that Indian agriculture could not quickly respond to the urgent calls of the crisis. While there may be difference of opinion as to the root cause of the inertia in our agricultural economy, there can be no two opinions on the supreme necessity of increasing the productivity of the soil. The food scarcity might have been accelerated by the lack of foresight on the part of the Government or the exports of food-grains or transport difficulties, but the problem of extremely low productivity has been with us even before the war. The Grow More Food Campaign inaugurated two years ago brought to the forefront the importance of proper manures to speed up the outturn from the land. Attempts are now made in several parts of the country to investigate the quickest way of increasing food, and as a result the necessity to conserve manure and utilise it to the maximum social advantage has been underlined. Another factor which draws our attention to the need for more manures is the wartime shrinkage in exports and imports. On the side of exports we have the surplus groundnuts, castor and other oilseeds which are looking around for internal outlets since exports are cut out. Oilcakes have been known to be excellent manures and war has now given us a golden opportunity to make the best use of our oilseed resources for fertilising the soil. On the side of imports, India is now faced with the necessity of going without the chemical fertilisers she used to be importing before the war. Absence of machinery, and lack of indigenous sources of sulphur have revealed that, at least during the period of the war, we should fall back on our own resources. Thus all factors are now pressing urgent consideration for evolving a national plan for increasing manures for more agricultural production.

The importance of manure as a stimulus to agricultural production is well known to our ryots. They are fully aware of the fact that manures and irrigational facilities are handmaids to agriculture. Nevertheless we find that the villagers are using cowdung for fuel purposes instead of utilising it for increasing the yield from land. If the peasants prefer to use cowdung and farmyard manure for burning as fuel it is not because they are unaware of their value or the technique of using these on different soils but because their purchasing power is so low that they find it difficult to buy wood or coal for their household purposes. Cowdung is cheaper and hence this waste of manure persists throughout the country. Extreme poverty of the ryot has thus resulted in a steady deterioration in farming methods. The forest policy of the Government has been helpful in relieving the fuel shortage. If there had been a proper planning of our forest resources with a view to supplying fuel and wood for the ryots the farmyard manure would have been fully diverted towards the land and the systematic starvation of the soil that has been going on for the past few decades would have been avoided. A very great part of Indian soil requires proper manuring and the supply of good manures are woefully inadequate. As early as 1893 Dr. Voeleker emphasised the richness of the Indian farmyard manure and demonstrated that burning of cowdung was a great agricultural loss. He calculated that for every ton of cattle manure that is burnt 29.25 lbs. out of a total of 30 lbs. of nitrogen are totally wasted. More than three decades after his warning the Agricultural Commission doled out the same advice as if the cultivator was in need of tutoring on the value of farmyard manure. Once again today we find agricultural experts and 'Grow More' enthusiasts talking to the ryots on the use of cowdung for manuring. Sir John Russel urges the planting of quick growing trees in the village areas to relieve the shortage of fuel which results in the wastage of cowdung resources. Dr. Bal of the C. P. Government pointed out that as a result of centuries of cultivation Indian soil has become deficient in organic matter and that nitrogenous manures must be applied for recuperation. In areas where rainfall is deficient or uncertain manures assure a reasonable agricultural return and thus protect the local populations from utter ruin.

GREEN MANURES

Next to farmyard manure the green manure should receive adequate attention. Owing to the increase in the cost of farmyard manure in some places the popularity of green manure has rapidly increased. The sann crop, it is found, brings plant food from deep layers of the soil to the upper layers and thus improve the texture of the soil and its productivity. Experiments have shown that sann green manuring increases humus, and nitrogen content in the land, protects the soil against erosion and conserves nitrates. Another important service it does is to aid in making the prosphate and potash in the soil useful for organic growth. While in some parts of India such green manuring crops could be grown there are also places where this is impracticable. In those places where green manuring trees could be grown the leaves can be utilised for manurial purposes.

BONE MEAL

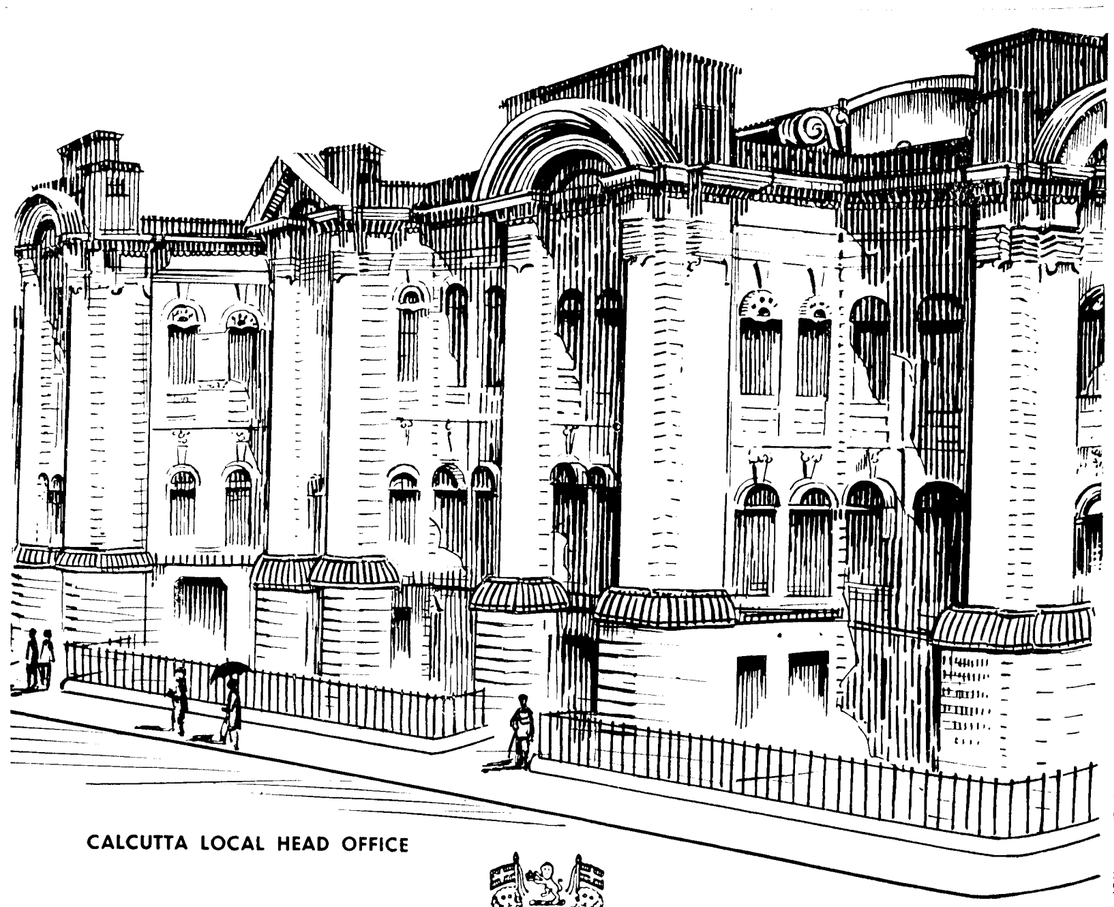
Bones and fish form another important source of manure. Even in European countries the importance of bones as fertilisers was recognised only during the 19th century. Experiments conducted in Cheshire had revealed that bone meal could stimulate agricultural production and that it is rich in nitrogen and phosphate. The bone manures came to be used in place of superphosphates and the gardeners were specially benefited by this fertiliser. In India the use of bonemeal did not gain popularity because the villagers had an agelong prejudice against using bones as manures and also because no systematic investigation into the utility of bone manures to different soils was conducted. As usual the experts talked of their importance but the Government kept quiet and left the poor cultivators to themselves. In recent years the value of bones has been comparatively better recognised but the difficulty of collecting, conserving and powdering the bones had blocked the way of progress. Not only was there no attempt at affording facilities for the preparation of bonemeal but actually large exports of valuable manure had been allowed In 1939 India exported over 53,000 tons of fertilisers and bones and bonemeal accounted for 40,000 tons. Public opinion in this country had often expressed itself against the exports of valuable manures and the Board of Agriculture (1919) had definitely called for a total prohibition of the exports of bones and fish. It is high time that the Government realised their duty towards Indian agriculture and efforts should be made to conserve the bone manure and fish manure within the country for increasing the productivity of the soil.

OIL CAKES

India is very rich in oilseeds and there is vast scope for utilising the oilcakes as manures but owing to the absence of a systematic attempt to conserve our oilseed resources for our agricultural purposes and owing to the indifference of the Government which did not favour the establishment of a Vegetable Oil Industry in India, over one-fifth of the total production of groundnuts, castor, rapeseed, mustard and linseed continued to be exported. War has now offered a golden opportunity for setting up modern oil presses and manufactories so that the oilseed resources could be internally utilised and the cakes used as cattlefeed and manure for land. If the village oil crushing industry is effectively encouraged in its competition against the mills, the ryots would be induced to make the best of their seeds and cake for manurial purposes.

CHEMICAL FERTILISERS

While India has enormous quantity of organic manures to be exploited for use her capacity to produce artificial fertilisers or inorganic manure seems to be for the present very limited. In 1939 India had to import over 90,000 tons of chemical fertilisers like nitrates of soda, sulprate of ammonia, muriate of potash, superphosphate, and ammonium phosphate. The war has curtailed the foreign supplies of these valuable fertilisers and the problem of manufacturing chemical fertilisers from our own resources has now come to the forefront. Unless steps are takeu for manufacturing the much-needed chemicals for manure large tracts would have to suffer lower acreage yields at a time when the outturn should be increased. Before the war, India could produce only 20,000 tons of sulphate of ammonia while she had to import nearly four times that quantity. Most of the Indian producers of sulphate of ammonia being members of the British Sulphate of Ammonia Federation the price has been maintained at a level beyond the reach of the Indian agriculturists. While there was good scope for the production of synthetic ammonia, no effort was made to organise production on a satisfactory basis. Indian soil, particularly in South India,—is deficient in phosphates and the need to use phosphatic manures is very great. The principal sources of phosphates, viz., bones and phosphatic rock, are found in adequate quantities in India. The phosphate deposits of Trichinopoly in Madras and those in South Bihar should be



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exploited fully for the manufacture of fertilisers. The intensive investigations carried out at the Indian Institute of Science, Bangalore, have shown that those deposits—estimated at 7 million tons—are eminently suitable for extraction and use. The prime requisite for organising a phosphatic fertiliser industry is adequate supply of sulphuric acid. Doubt was expressed if India could produce enough sulphuric acid at economic rates with imported sulphur. Recently investigations have been carried on to prepare quick acting phosphatic fertilisers from natural phosphates without the use of sulphuric acid. Successful results have already been achieved; and the Government should therefore lose no time in giving the initial impetus for starting the fertiliser industry at an early date.

A conference of the representatives of the chemical industry and of the Supply, Food, Commerce and Education and Health and Lands Departments was held at Delhi on the 29th and 30th September, 1943 to consider measures for increasing the production of fertilisers. It was estimated that to fertilise the 250 million acres of cultivated land under food crops 1 million tons of ammonium sulphate would be required. Before the war the annual consumption was only 1 lakh tons most of which were imported. The Foodgrains Policy Committee has fixed a target of 350,000 tons to be produced in two years while the actual position today is that India can produce hardly one-tenth of this figure. Details regarding plant, transport, raw materials, power requirements, markets etc., have been examined by an expert committee. Sir Cyril Fox has stated that the quantity of gypsum necessary to produce 35,000 tons of ammonium sulphate could be found in India. The prospects of increasing the production of ammonium sulphate from the by-product of the coal distillation industry are said to be very bright. Hardly one-tenth of the 30 million tons of coal raised in India today is being subjected to distillation and if 15 million tons are distilled, it is calculated, 200,000 tons and more of ammonium sulphate could be produced. It is to be hoped that the survey of raw materials for sulphate of ammonia will be completed soon. Technical information and business details would be readily available. But the question remains if the Government would procure the necessary machinery or, as usual, put forward excuses for inactivity and delay.

In view of the extremely low productivity of Indian agriculture it is needless to point out that the supreme requisite of our agriculture is a well-thought-out Manure Plan as part of a bold agricultural policy. The controversy regarding the superior merits of organic manures or artificial fertilisers seems to be futile at present. A judicious combination of both would give a powerful fillip to our agriculture. Both organic and inorganic manures are required to stop the rapid deterioration of the soil. A correct manure policy for India would have to pay attention to the maximising and conserving of our organic manures and also plan for starting a modern fertiliser industry to produce adequate quantities of the artificial (inorganic) manures. While the latter depends on machinery and plant to be imported from abroad, the conservation and proper use of oilseeds, bones, cowdung, green manure, sleudge, etc., should be more readily achieved by co-operation between the Government and the people. As pointed out before, if a vegetable oil industry is started, the oilcake manure can be retained in the country for the best possible use as manure. The Indian cultivator is notoriously poor and cannot afford to think of chemical fertilisers; but a favourable forest policy which makes fuel cheaper would enable him to utilise the farmyard manure for cultivation purposes. Adequate loans through co-operative societies would also help the ryot in purchasing the required manure. Intensive propaganda by the Agricultural Departments in the Provinces should educate the villagers to the real value of different kinds of manures. It is to be remembered that in progressive countries not only adequate steps are taken to supply good manure for agriculture, but systematic investigations are carried on to introduce new manures and to find out better use for old ones. Soil tests and manurial tests are scientificially organised so that the art of manuring may not remain static but would grow more and more useful in wresting the greatest possible benefit from nature. Indian farming methods are now widely condemned as primitive, and it is up to those who plan for a prosperous future to organise Indian farming on scientific lines so that our country could join the worldwide race for agricultural progress and ward off the menace of famines for ever.

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PUBLIC HEALTH AND POST-WAR PLANNING

The place of public health in our post-war economic planning is comparable in many respects to that of education. The highest standard of health and physical well-being in the population of the country is not usually regarded as one of the ends which national economic plans should directly strive to achieve. In the advanced industrial nations of the world where there is rarely much leeway to be made up, public health as a factor in the productive efficiency of the people becomes in different ways the concern of different authorities and corporations. For enlightened employers, the health of their labour force is a matter of close pecuniary interest. The educational authorities not only realise the importance of school medical services but have also the means to ensure that such medical attendance is provided for the pupils in an efficient and effective manner. Sickness for the working classes is one of the main risks which industrial insurance tries to provide for. It is possible that different ideas of how public health may be promoted may bring about in the future different lines of attack, but in India where in most questions of national importance, we have, so to say, to begin from the beginning the problem of public health lies at the very basis of the problem of increasing the productive efficiency of the people. Just as in the case of education one can reasonably claim that all schemes for economic development must fail of their purpose if the educational development of the country were neglected, in the case of public health too, a considerable increase in the efficiency of men and women as workers in industry and agriculture must be attained if the State and the various governmental authorities are to make a success of their efforts to increase production. If the modern craving for statistics is to be satisfied, one can with a few calculations of indisputable correctness bring out the tremendous loss that the country has been sustaining through the break in work due to illness and lack of fitness during work. Such attempts, so far as the writer is aware, have been made only in respect of malaria, probably because malaria is the commonest of Indian diseases which causes frequent illness and undermines the health and efficiency of the worker, that is, where it does not kill him.

The problem of public health in India, as the economist can conceive it, is one of elimination of all the factors in the sphere of public health which affect current production of goods and services and, therefore, the annual national income. The authors of economic planning, if they regard themselves as production managers and the whole country as a factory, could probably consider the number of the total population, at which production of wealth and the satisfaction of consuming it could be maximised. But such cold calculation is not permitted. The population factor is given; and only in such extreme cases as India to-day can economic planning include the control of population as one of the main planks of the programme. We cannot burn up men and women as Brazil did her coffee. If demographic trends have to be controlled, they can be only over a long period and more civilised methods must be employed. With the population as it is and our economic prospects as we can envisage them, the problem of public health is the problem, not so much of avoiding preventable wastage of human life, nor even of ensuring physical well-being as part of an individualistic hedonism, as of ensuring the physical efficiency of each worker in relation to his calling. That is, it does to the body of the average worker what the educational plan should do to his mind.

From this point of view, the planning of a public health programme has to recognise the two great divisions of the population on the occupational basis, *viz.*, the industrial and the agricultural. This division is in accord with the division of India into rural and urban. Though some of the diseases and some of the basic factors which account for lack of efficiency are common to both, in the treatment of environmental conditions, which is so large a part of the promotion of public health, the disinction between rural and urban is of great importance. The idea that people ought to be fed according to the demands of their job is one that the war has familiarised us with. In Britain, workers in heavy industries receive a larger ration of certain kinds of foods. The application of this idea to India's war against poverty is obvious.

As has been hinted above, the problem of health as it should be appraised by a Planning Commission, has necessarily to include the problem of nutrition or at any rate to assume a sufficiency of nutritious foods for all sections of the population. For, only on such a basis can the war against disease be hopefully engaged in; for the arsenal of disease is want and weakness.

Assuming that this condition is satisfied, the planning of public health takes the form of a crusade against the diseases, which account in great part for the high mortality rate in India.

The causes of death in British India in 1938, were as follows (according to the report of the Public Health Commissioner for 1938).

DEATH RATES PER 100,000 IN BRITISH INDIA IN 1938.

	British India		Bengal	
	Rural.	Urban.	Rural.	Urban.
1. Fevers (mostly malaria, probably flu, typhoid and tuberculosis) ..	1,480	770	1,640	450
2. Dysentery and Diarrhœa ..	90	240	120	270
3. Cholera	90	50	140	100
4. Respiratory diseases ..	150	630	170	530
5. Smallpox	10	30	10	80
6. Plague	10	10	..	..
7. Other causes	610		460	
8. Total mortality	2,430		2,500	
9. Infant mortality per 1,000 live births	164.2	190.6	184.7	184.3

It will be seen that of the items listed above, fever accounts for more than 50 per cent of the total, or about 4 million deaths per annum, and that the rate in rural areas is nearly double the urban rate under this head. Towns apparently afford a degree of protection that villages cannot. And this consists in the civic amenities in towns, greater financial resources of the community for undertaking health, anti-malarial and medical services in an organised way in municipalities, etc. It is easier in a compact and crowded community to eliminate mosquito breeding than in the villages where the inhabitants sprawl over wide areas. Rural malaria control is, then, the biggest public health problem in India; and the urbanisation of India, which readily suggests itself as a solution, is not open to us and will not be for as far as we can see. Organised efforts to reduce this appalling loss of life have to be made on a country-wide scale. The move must come from the Government. Killing adult mosquitoes in houses with sprays of pyrethrum once a week or so, in an organised manner in villages in endemic areas, and during epidemics of malaria, holds out great promise and has been recommended for adoption in rural malaria control by the Central Advisory Board of Health. It is difficult to estimate how much of this extract of pyrethrum will be required. If 30 million people are supposed to be living in regions of highly endemic malaria area, they may be scattered in about 60,000 villages, in about 5 million homes, 1,500 tons per annum and 150,000 sprayers, and several gangs of trained men, supervisors, and medical officers will be needed to carry on this campaign. It is heartening to know that pyrethrum flowers of good quality can be grown in India, and that we need not spend large sums in importing it from abroad. They grow well in Darjeeling, Kulu, Kashmir, Coonoor, and other places of high altitude. Indian flowers are known to be equal to the best in the world, but there is no organised cultivation of this precious flower except in Kashmir, where about 70 tons are produced per annum. Kenya produces about 7,500 tons per annum and used to send most of it to the U.S.A.

The cost of adult spray-killing for the protection of about 30 million people may be around 1.25 crores per annum, and the cost of staff for supervising this work may amount to an equal sum. But the saving of life and health that can be effected will make the expenditure worth while. The expenditure involved is Re. 1 per capita per annum, when distributed over the community receiving immediate benefit, but it will be Re. 1-0-6 per head per annum when borne by the whole nation. As has been already mentioned, malaria is the worst enemy of the efficiency of the average worker; and expenditure on its control and elimination is an investment according to the strictest standards of commercial accounting.

For proof, it should suffice that the shrewd businessmen who own the plantations have spent millions and reaped the rewards.

The problem is one of our making the planning of public finance fit into the larger programme of economic planning.

If fevers are to Public Health's Enemy No. 1, No. 2 is gastro-intestinal diseases which include cholera, diarrhœa, dysentry and typhoid. According to official estimates they account for about 3 deaths per 1,000 of the population and nearly 12 per cent of our total mortality. That India is still the home of cholera, while it has become extinct in Europe and the United States of America and is rare even in Ceylon, F. M. S., and Java, is one of the many blots on our national life which postwar reconstruction should remove. Generally speaking, measures against these gastro-intestinal diseases fall into two divisions (1) those which are preventible by the provision of protected water and (2) those which cannot be fought except by improving the methods of disposal of excreta. As regards the latter, it would appear that the people in urban areas are, if anything, more exposed than people in the villages; for the simple reason that, though the methods of disposal in the villages are far worse, owing to the concentration of population in towns improper methods carry with them a higher penalty. It was revealed in a recent enquiry that the most serious defects in environmental sanitation were (1) the total absence of latrines and (2) the absence of satisfactory water supplies for drinking, and washing purposes. It will be seen from this that the main line of attack against these diseases lies in the provision of protected water and of proper methods of disposal of excreta.

It may probably be thought that it is a moot problem whether these purposes should be attained by individuals and groups of individuals being exhorted to meet their own requirements in this regard or whether they should be secured by a comprehensive programme of public expenditure. It is palpably too late in the day to argue that essential social requirements should be left to the mercy individual means and inclinations. While it is true that more enlightened sections of society may be prevailed upon by active propaganda to meet these requirements on their own initiative, the promotion of public health as a factor in economic reconstruction must rest on the more reliable foundation of a comprehensive public policy.

Before considering the financial consequences of an adequate project for the improvement of public health, we may note in passing that outside the two main groups of preventible diseases examined above, only smallpox requires specific mention. Here again the great advantage is that the problem is simplified by the fact that smallpox is the most preventible diseases and that all that India needs to do is to make ample provision for vaccination and take greater precaution against possible violation of the law in this regard. As for the respiratory diseases, these are attributable directly to bad housing and overcrowding and in so far as these are confined to towns, one may look to the general pace of social reform to cure these evils and to reduce the incidence of such diseases to the very minimum. To ensure a higher standard of public health for the growing generation, attention has to be centered more on the schools and on the school-going population and the working of the educational problem in the country at large. As will be seen from the article on the economic aspect of educational problem appearing elsewhere in this Supplement, the plans that have been made for educational development in post-war India have paid the necessary attention to this problem. Its authors have taken the sanguine view that medical examination at schools would be a costly futility if efforts were not taken at the same time to cure the defects that such examination might reveal, not only by providing medical attendence but also by improving the nutritional standards of the school-going population by the provision of midday meals.

It is certainly not too much to hope that whatever may be the success of our efforts to improve he hygienic sense of the average individual, the schools will be able to do their job much better, and that we may view the future with greater optimism.

If we leave out of account the cost of ensuring sound health in the school-going population which ought to come under the appropriation for education, the main channels of expenditure entailed by a new public health project will be the measures to combat malaria and the measures for the provision of protected water supply and the provision of environmental sanitation. The expenses of anti-malarial measures have been mentioned and as for environmental sanitation one has to be prepared for lack of uniformity in the methods adopted as between the urban and the rural areas.

The incidence in raural areas and the provision of family latrine and programmes of sewage in towns with sceptic tanks for suburban community can ensure adequate freedom from gastro-intestinal diseases. Much will, indeed, depend on the infusion of a spirit of reconstruction in the rural population. And for the urban areas, it has been estimated by competent men that appropriation of capital expenditure of 11¼ crores per annum can ensure proper sewage for 50 per cent of our urban areas in twenty years. Considering that economic planning in India can be depended on to improve our resources, it is neither optimism nor recklessness to insist on larger outlays and speedier plans of progress in this regard. Turning to the question of water supply, here again one has to be prepared for lack of uniformity. We must be content with tube-wells in rural areas with their liability to get out of order frequently. For the urban areas, pipe lines and house connections should be obtainable in the easier conditions of the postwar period. It is estimated that an expenditure of Rs. 15 to Rs. 20 crores per annum for the next ten years would ensure the supply of protected water for 50 per cent of the population of India.

As in education so in public health, the bill of progress is at first sight a formidable one, but it is unreasonable to be scared by the figures. The expenditure of public money on protected water supplies has its repurcussions on industry and productive activity as a whole, which means such a real condition to the wealth of the country and the national income as can constitute adequate justification for such outlay. In judging the feasibility or the wisdom of such schemes, one is apt to compare the figures of these projects with the estimates of public revenue and expenditure as they were before the war. It is against the background of increasing national wealth and income that this expenditure should be set and viewed. It would be far more helpful if, instead of being scared by proposals for large scale expenditure on these items of nation building, people are frightened by the incredibly low levels of expenditure that now obtain. Few people remember that the expenditure from Central revenue and public purposes comes to a little more than one anna per capita per annum in 1939, and that municipalities in India have been spending little more than Rs. 3-14 per capita on public health. One has only to compare the corresponding figures of Rs. 30 and Rs. 33 for England and the U.S.A. respectively. The attitude to public health expenditure therefore should be determined not by the levels of public revenue at present, but by our ability to increase the national income through adequate economic planning.

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MILL STORES INDUSTRY FOR INDIA

The War has vividly brought home to the Indian cotton textile industry, as to other industries in India, its dependence on foreign manufactures for supplies of a large number of items of stores. It may really seem curious that industries of the magnitude of the jute and cotton textile industries should not all these years have thought of making arrangements within the country for providing all the stores they need for their daily use. Apart from the fact that raw materials for most of the items of essential stores are readily available in India, there is such a large and extensive home market for the consumption of these stores that it should not be difficult to build up a number of subsidiary industries supplying different kinds of stores. This curious fact is only part of what may be called the lop-sided character of India's industrial development in the past. Our industrial progress in the inter-war period had no reference either to the industrial activities of the past or to the possible developments of the future. Foreign capital and foreign enterprise had little in the nature of a permanent interest in a general all-round and methodical development of our potentialities. Scope for European service and European capital was not unnaturally the chief, and often the only, consideration in industries under European control; and hence the absence of that phenomenon which has brought about an orderly development of industries in the West. The organisation and the consolidation of the staple industries, such as would utilise those materials which are produced in the country in abundance without allowing them to be exported to foreign countries, the development of other trades and industries for the production of materials necessary for the conduct of the staple industries, a natural working out of the law governing the horizontal and vertical combinations in industry and trade, in fact, the working of a process by which every big industry and every branch thereof will throw out fresh offshoots—this is the phenomenon which is conspicuous in India by its absence. To a casual visitor from highly organised industrial countries like England, Germany or the United States, who arrives in India to study the conditions of our industry nothing would be more striking than the lop-sided nature of its development. He finds big staple industries like jute and cotton are gathered together in the chief exporting cities and their development may seem to him as inevitable. But the utter absence of small side industries which are bound to be highly profitable in these centres is a phenomenon which would be very hard for him to explain. More than fifty years of concentration and orderly development of these staple industries has not sufficed to give rise to a single subsidiary industry to supply the articles of daily necessity for these big concerns.

In a place like Northampton in England with its big shoe factories, one finds either in the centre or studded close to it, a number of small factories, or big ones, as the case may be, which are busy with the manufacture of the articles that the shoemaker wants such as laces, nails, finishing materials and a thousand other knick-knacks like these. Similarly, Lancashire has its factories specialising in the manufacture of belting, pricking bands, pickers, laces and bobbins and a great many smaller things which the cotton mills require. The development of industries in Western countries has been harmonious and is a big system unto itself with all the parts well-fitted into a perfect whole.

No such growth has taken place in India. The small industries which require comparatively a small amount of capital and perhaps, greater concentrated skill are a nice and profitable field of investment for the small capitalist. For instance, the jute mills in Calcutta can easily maintain at full speed a big leather factory; and yet, though numerous factories were started in India, not many of them cared to go into this market and, in cases where they did, they fizzled out. The manufacture of these articles in this country can, indeed, be neither difficult nor impossible. But the fiscal policy of the Government, which till recently was no more than an obstinate insistence on free trade, might have had a good deal to do with this failure, though the people connected with the actual management of these staple industries must take their share of the blame.

Fiscal protection for such goods is not without its complications; for if the mill stores are protected the products of the

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mills also must enjoy some sort of protection to enable them to compete with foreign imports. But, generally speaking, the tariff protection as a means of developing a new industry, particularly one of small size, is an obsolete idea. In the general trend of economic thought away from laissez faire. The old idea of protection has developed into that of correlating planning, and in India where even the cotton textile industry itself owes by far the biggest part of its expansion to the spontaneous support of the people, it would be only fitting to insist that the establishment of an industry for the manufacture of mill stores should rest on the spontaneous support of the cotton textile industry itself.

As a matter of fact, instead of leaving the development of subsidiary industries to others, those engaged in the cotton textile industry can, by co-operative effort, easily build up these subsidiaries, and it is to be hoped that the lesson learnt during the present War of the extreme scarcity of some of these stores and the enormously high prices that had to be paid for them will not be forgotten and that, as soon as the importation of the necessary plant and machinery after the war is made possible, the cotton textile industry will itself take the lead in embarking upon the manufacture of these stores.

In recent years, efforts have been made to manufacture healds and reeds, pickers, bobbins of various kinds etc., and they have not proved unsuccessful. As a matter of fact, hard and preserving work by some of the pioneering firms have met with remarkable success, not only in the sense of war-time profits, but also in developing their products in the matter of quality to a stage comparable to the imported products. So long as Indian manufacturers keep in view the objective of manufacturing these products to the standard of competitive imported products and take constant care to maintain their quality, there is a bright and profitable for them. Besides the quality, Indian manufacturers will also have to attain that standard of efficiency in working which would enable them to compete on fair terms at prices of imported products. It must not be forgotten that the foreign manufacturers have always attached considerable value to the maintenance of their standard qualities; and if there is any hesitation on the part of the Indian consumers to patronise the Indian-made products, it is in most cases very largely if not wholly due to their satisfactory experience of the quality of the imported products. But the indigenous manufacture of these goods can be made possible only if the manufacturers strive to improve the quality and the mills agree in their own interest not to be unduly fastidious about quality.

There are a number of items in mill stores which can be mentioned here, the manufacture of which can be undertaken without any insuperable difficulty. For instance, shuttles, bobbins of various kinds, picking sticks, dobby lattics, leather goods like beltings, picking bands, buffers, roller skins etc. It is a matter of no small satisfaction that with the pioneering efforts of a few enterprising people the requirements of the cotton textile industry to a large extent can now be met from Indian-made pickers, healds and reeds, maize starch etc. We have fortunately a few Woollen Mills in India and it is quite within their capacity to manufacture sizing flannel and clearer cloth of good quality to meet the requirements of the cotton industry.

If a number of these ancillary industries are to be promoted and kept going, it is very highly essential that those who are responsible for the management of the cotton textile industry should make it their policy to support these industries by extending their patronage to their products, though in the earlier stages it may involve a little sacrifice in the shape of comparatively higher prices than those paid for the imported products. A number of these industries are not likely to attain that capacity or magnitude which would warrant their approaching Government for protection in the shape of higher duties to compete with imported products. After all, tariff walls can be and are often got over by the importer; and no protection can be so perfect as that afforded by the consumers themselves in a spirit of enlightened self-interest.

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THE INDIAN COTTON TEXTILE INDUSTRY

The Indian cotton textile industry historically the first and foremost of India's national industries is, also the first to be subject to the completest scheme of State control in regard to production and distribution. Perhaps it is not so strange as it may seem at first sight. For, it is only to be expected that the pressure which the war creates for the regulation of economic life, should be felt most in a truly national industry. The cotton textile industry was brought into being by Swadeshi sentiment and nurtured to maturity by the patronage of the people. in the form alike of spontaneus preference of Indian Indian cloth to foreign cloth and high protective duties for a long period. It has during the last one decade come to meet by far the larger requirements of the masses for cotton cloth; and the change in our political and economic relations with Japan had landed the handloom industry in exclusive reliance on the Indian mills for its supply of yarn. Another important development which tended to make control inevitable is the increasing importance of the Indian industry in the Empire. While the progress of the war cut off the countries of the Middle East from their customary sources of supply of cotton goods, the Indian industry was looked up to fill the breach. There has thus been a series of developments which should have left no room for doubt in the minds of the millowners that their activities will before long be brought within a comprehensive scheme of Government control.

While there is no doubt a strong prima facie case for control of functioning of the cotton textile industry in India, it is difficult to overlook the fact that the Government have shown far less reluctance to bring under control industries which are predominantly Indian in ownership than those which are in the hands of foreigners. If one were to attempt a history of State interference in industry in India, the sugar and cotton industries will fill by far the larger part of the volume. Such a fact is too arresting to be dismissed as fortuitous, particularly when one notes that, when the jute industry was faced with more than one crisis in respect of regulation of output or entry of new mills, the industry was enabled, by various devices, to tide over the need for State control. Much however cannot be made of such facts. The place which the cotton textile industry occupies in the life of the people is such that the need to regulate the prices of cotton cloth cannot be dodged on doctrinaire grounds or on grounds of partiality for Indian idustry. In times like the present, the only way of avoiding State control is for the industry to evince of its own accord every respect and consideration for the needs and conditions of the common consumer. It would be too much to claim for the Indian cotton textile industry any such concern for the consumer as alone it can constitute a valid argument against State interference in the common interest.

The belated attempt of the representatives of the cotton textile industry to present a case against control by explaining the "reasons" why prices have risen to the present level only betrays the weakness of their case. In the statement that they made, they emphasised that the industry repeatedly approached the Government for a ban on exports and that, as the Government did not respond to that suggestion, they must hear the blame for the rise in prices.

The scheme now formulated by the Government may be said to fall into three divisions, the first referring to the materials entering into costs, the second, to the process of production and the third, to the methods of distribution. As the control of cotton price is a necessary preliminary to the control of cotton cloth and yarn prices, the Government gave early indications of their decision to prevent an undue rise in the price of cotton. They attempt now to safeguard on the one hand the interest of th cottongrower by the assurance that "Government will be prepared to buy cotton on their own account if prices fall below a level which they consider to be fair". On the other hand ,the millowners by assuring them that their requirements of cotton will be met by requisitioning cotton by whomsoever held at the maximum basic price of Rs. 550. As for the other items in cost Mr. Hydari has stated at the Bombay Conference that it is proposed to impose control over the prices and distribution of fuel and millstores and also over cotton. There have already been established control in certain of these directions; thus, for instance, the cotton textile directorate now controls the movement of raw cotton, import and distribution of mill stores and prices and distribution of reeds, healds, shuttles and bobbins etc.

The two principal measures now contemplated in regard to the processes of production, are firstly the reduction of the innumerable varieties of cotton now manufactured to about five or six and the increase in the number of shifts to the maximum possible in each case. It is said that an increase in output of about 20 percent is not impossible through these measures of rationalisation. There is no indication, however, of the reduction in costs which may thus be made possible. But in the present conditions, an increase in output, with an increased allowance for depreciation for incometax purposes, should be deemed a gain to the nation without any attendant privation for the industry.

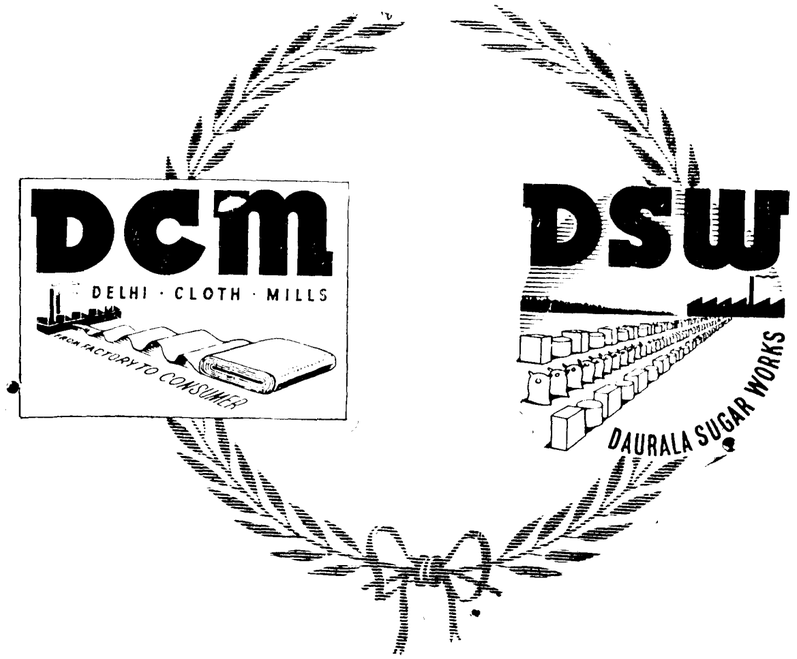
The main purposes of a reorganised distributive system should be firstly, to enquire quick movement of goods into consumption without any holdup of stocks for profiteering; and secondly, the benefits of rationalisation for the consumer. Towards these ends, the industry itself has made the suggestion that the retail prices and the date of manufacture should be stamped on the cloth. The margin between ex-mill and retail prices should be wide enough to provide adequate remuneration for such middlemen as actually perform the necessary function of linking the manufacturer with the retailer. The effect of thus pegging these prices will be to force the retailer to buy from the wholesale dealer only at a price which will enable him to make a reasonable margin of profit within the maximum retail price, the wholesale dealer will only buy from a mill at a price which will enable him to sell at profit to the retailer; the mill will only buy cotton at a price that will enable it to show a reasonable margin of profit on the price realised from the wholesale dealer. The date of manufacture printed on the cloth will bear witness to the time the goods were in stock. In addition, powers are to be taken to prevent stocks being held for more than two months and their being in excess of a certain proportion of stocks in a basic period of the past.

Comprehensive control of the cotton textile industry naturally presented great administrative difficulties. It was at first said that all cloth manufactured prior to August 1, 1943 should be disposed of before the end of October of that year and dealers and manufacturers were obliged to submit returns before the middle of August. The one great advantage of this census was the unearthing of large hoarded stocks of unstamped varieties amounting to 2700 million yards of cloth and 750 lbs. of yarn. As it was said that it would be impossible to dispose of this large quantity of unstamped goods before the end of October, the Government offered to buy up all unopened bales through the Textile Control Board. But even this procedure was found to be impracticable and it was finally decided to extend the time limit for the disposal of these goods to the end of December, 1943. In October, 1943, the Textile Control Board met and fixed maximum prices for certain varieties of cloth and dealers were vented from selling above the ex-mill price plus 20 percent margin of profit for retail selling. As from December 1, ex-mill and retail prices have been fixed for all varieties of cloth and yarn and it is obligatory on the part of every mill and dealer not to sell above the mill price and retail price respectively.

Since the introduction of the Cotton Cloth and Yarn Control Order, there has been a reduction in wholesale prices by as much as 40 percent. It is felt that with a progressive reduction in costs, it will be possible to effect a further reduction in ceiling prices. It should be said that, on the whole, the control of cotton cloth and yarn prices in cooperation with the industry has been successful and that the initial results are satisfactory.

The policy of maximisation of production with the increase in the manufacture of standard cloth and the reduction in the number of varieties produced. however, has not been very successful as there have been reports that the standard cloth varieties, as produced by the mills, have not been well received and large stocks are lying undelivered at mills' godowns. The Government of India and the various Provincial Governments are trying their best to dispose of stocks of standard cloth. Certain modification in the production of standard cloth varieties have also been made in the light of the suggestions made by the consuming public. The success of the standard cloth scheme, the regulation exports and a reduction in war orders should help the Government to a great extent in their effort and it is hoped that with the active co-operation of the industry a substantial decline in prices wll be achieved befor the end of 1944.

India is the birthplace of the cotton textile industry and even at present by virtue of its antiquity and importance it takes the first place among Indian industries. Alike in the capital sunk, in the volume of employment it provides, and in the net addition to the wealth and income of the country, it has hardly a rival among our industries. And what is more, it has a hold on the public



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imagination and affection that no other industry has. The decline of India's cloth manufactures since the latter half of the 18th century was regarded as the symbol as much as the result of the country's political subjection, and its revival in the second part of the 19th century and its progress since, has been in the public mind equivalent to the progress of a political and economic emancipation.

The excellence of Indian cotton manufactures secured a market for them in Europe, two centuries ago and even the jealousy of English weavers, expressed in riots, did not make the East India Company give up the lucrative trade in calicoes. The growth of the Lancashire industry as the consequence of the industrial revolution in England accompanied by the neglect and ill-will of the governors of India make the old puissant industry of India a mere ghost of its former self, but after 1850 when the East India Company sought to stimulate exports of Indian cotton, many appreciated the advantages that the development of the industry would obtain on Indian soil if the mechanical improvements of the West were adopted. Bombay was designed by nature to be the home of the cotton mill industry and the first Indian mill was established by Mr. C. N. Davar and started work in 1856 though the Bowreah Cotton Mills Company established at Fort Gloster near Calcutta as an English company in 1818 has the distinction of being the first. In the next few years six more mills were started in Bombay Island and the industry had also secured a foothold in Broach and Ahmedabad where the first mill was started in 1859 under the management of Mr. Ranchodlal Chhotalal. The American civil war gave a fillip to the Indian mill industry and by 1880 appreciable progress had been made as may be judged from the figures below:-

Year	Mills.
1878-80 to 1883-4	63
1884-85 to 1888-9	93
1889-90 to 1893-94	127
1894-5 to 1898-9	156
1899-00 to 1903-04	195
1904-5	203
1905-6	204

(In thousands.)

Year	Mills	Spindles	Looms	Labour
1851 ..	1	29	—	5
1866 ..	13	309	3.4	7.7
1876 ..	47	1,100	9.1	..
1877 ..	51	1,244	10.3	..
1880 ..	56	1,461	13.5	44.4

Statistical records of the progress of the industry since 1880 are more complete and the table below indicates the advance of the industry for the quinquennium period up to 1903-4 and for the two years thereafter:

Capital (in lakhs)	Labour	Looms (In 000's)	Spindles
657.6	51.0	14.5	1610.6
887.9	75.7	18.2	2296.8
1161.1	116.1	25.3	3263.8
1419.5	150	36.6	4046.1
1687.9	171.6	42	5000.9
1757.5	196.4	47.3	5195.4
176.97	212.7	52.3	5293.8

Progress in the succeeding years was well maintained and in 1913 the Indian industry had a complement of 237 mills with a total of over 6.2 million spindles and 90,000 looms. It is estimated that the output of the industry at the time was 688 million lbs. of yarn and 1,164 million yards of cloth as compared with 353 million lbs. of yarn and 422 million yards of cloth at the beginning of the century. Thus the beginning of the last war found the Indian industry a substantial one with crores of capital, mainly Indian, invested therein and affording work to over 244,000 persons. It had shown remarkable expansion since its inception and had undergone in its later stages a change from one based on spinning to one embracing weaving, both of home-produced and imported yarn. Whereas spindles had increased by 39 per cent looms had increased by 142 per cent and the ratio of spindles to looms had fallen from 119 in 1898-9 to 68 per cent in 1912-3.

Even more rapid was the progress of the industry during the Great War when the decline in imports assisted the progress of the industry though advance was hampered by the difficulty of obtaining plant and equipment from abroad. By August 1918, the number of mills increased to 252 with over 6.6 million spindles and 116,000 looms consuming over 2,085,000 bales of cotton. In the early years of the century the industry had an important trade in yarn with the Near East, Russia and the Far East but the trade was lost through the remarkable advance made by Japan in textile manufacture and the enlarged demand for weaving purposes. 1917 is considered the most prosperous of the war years and high prices and large exports accompanied the rise in production.

The end of the last war witnessed no diminution of prosperity and in the post-war boom orders for new and additional plant both for old and some new mills were freely placed when the Rupee value was fixed at 2 sh. But the exchange crisis left the importers unable to take delivery. In the piecegoods market also a very acute situation developed and indigenous goods were shunned as much as imported goods. The Indian mills' spinning production as mentioned previously was being elbowed out of foreign markets and this added to the difficulties experienced in the slump of 1921. The competition of Japan in piecegoods became a serious factor in 1922 and the depressed state of the industry received no help from the movement to popularise khaddar.

Shareholders in the mill industry after the intense boom experienced something like disaster and labour troubles accentuated the difficulties of the industry. These conditions led to the appointment of a Tariff Board to enquire into the industry with particular reference to the causes of the depression, whether permanent or temporary, and to examine the extent to which it was due to foreign competition and also advise on the necessity or desirability of protection. The Tariff Board confirmed the impression conveyed by the terms of reference that the plea for protection was made with far greater importunity by Bombay and Ahmedabad Mills than by mills situated elsewhere. And even as between them, more insistence was laid by the Bombay mills, for it was apparent that the industry there laboured under disadvantages imposed by higher costs, especially, wages, fuel and the distance from raw cotton areas and consuming markets. The examination of other questions revealed the contributory force of the loss of export markets like China, and the extent of competition from Japan was probably as serious as the losses occasioned by the growth of the industry in up-country centres.

The remedy which the Tariff Board suggested was the diversification of manufactures, and to this end, they suggested a bounty for stimulating the spinning of yarn of higher counts. The only action taken in regard to the majority and minority recommendations of the Tariff Board was the abolition of the duty on imported mill stores, for the Government stated, that on the facts as found by the Tariff Board, no case for protection had been made out. But as the result of protest and representations the Government issued a *communique* levying a specific duty of 1½ annas per lb. on imported yarn below the value of Re. 1-14 per lb. when the rate was to be 5 per cent *ad valorem* up to March 31, 1930. These concessions, which followed the abolition of the excise duty (first imposed in 1894) in 1926 after prolonged agitation, had little effect. The fixation of the rupee ratio at 18d. gave foreign manufacturers a definite advantage and the recrudescence of labour troubles in 1928 and 1929 left the textile industry, particularly, of Bombay in an enfeebled condition. Requests for relief resulted in the appointment of Mr. G. S. Hardy to conduct an enquiry into the changes in the imports of cotton textiles and to advise on the possibility of substituting specific for *ad valorem* duties.

Mr. Hardy in his report confirmed the popular view of the intensity of competition from Japan and he pointed out that one of the results was to displace not only Indian but Lancashire goods. He reported against the change from *ad valorem* to specific duties as unsuitable. The issues raised in the report were examined by Government in conjunction with representatives of the Bombay Millowners' Association and the necessity of a certain degree of protection was accepted. As a consequence it was decided to raise the revenue duty on cotton piecegoods from 11 to 15 per cent and under the Textile Industry Protection Act of 1930 they imposed on non-British goods an additional 5 per cent for three years, and a minimum specific duty of 3½ annas per lb. on plain grey goods, British and foreign. But the action appeared to be governed, mainly, by revenue considerations, and the necessity for protection was left to be adjudicated by a Tariff Board enquiry.

The Textile Industry Bill had a rather stormy passage in the Assembly and an amendment made grey goods from Lancashire subject to the specific duty. The Industry received some assistance from the intensification of the *Swadeshi* movement in 1930 and the surcharge of 25 per cent levied by the supplementary budget of 1931 on all imports conferred some advantage in addition to the changes made in the March Budget when the import duty was raised to 20 per cent on non-British goods. The emergency budget of 1931 raised the duty on rayon yarn from 10 per cent to 18¾ per cent and the duty on rayon and mixed goods was fixed at 50 per cent and 34⅜ per cent respectively after being subject to a duty of 20 per cent in the previous seven months.

The import trade in textiles is one that is frequently the subject of both description and comment. The Indian industry, hampered though it is by many difficulties, has made remarkable progress, that the British manufacturer has lost his hold on the market and that Japan remains the most formidable competitor. The last has of course been the outstanding feature since Japan went off gold in

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December, 1931. In the middle of 1932, the value of the yen was stabilised at a very low level in terms of sterling. Depreciation of the yen exposed the Indian industry to increasingly rigorous competition, and in its representation to the Tariff Board appointed on July 25, 1932 the Bombay industry rested its case principally on the depreciation of the yen. The report of the Board on the question of the depreciated yen and the related charge of dumping (published in September) was preceded by the resolution of the Government deciding on the raising of the duty on non-British piecegoods to 50 per cent subject to a minimum of 5¼ anna per lb. on plain greys. But the higher duty was to be in force till March 31, 1933 and after the Tariff Board reported there was a further decline in the value of the yen which rendered obsolete the figures employed by the Tariff Board in its calculations so that by the middle of 1933 recourse was had to further action, following representations from British and Indian Chambers of Commerce and the duty on piecegoods other than fents not of British manufacture was raised to 6½ annas per lb.

This was not the last development in the triangular contest for the Indian market catered by the Indian mill industry. Lancashire and Japan. At every step action taken by the Indian Government sought to confer some differential advantage to Lancashire and protection was sought to be kept down to a bare minimum. Piecemeal action had little effect in removing the troubles of the industry, and the acceptance of the Ottawa Preference prior to the belated publication of the Tariff Board report was followed by British-Japanese discussions in regard to the Indian market. At the same time, as the Lancashire mission headed by Sir William Clare Lees visited India a Japanese envoy, assisted by experts advisers, was engaged in negotiating a trade treaty to replace the old convention denounced in April, 1933. The only action taken by Government was to include the provisions of the Indo-Japanese trade agreement of 1934 and the Mody-Lees Pact in prescribing the tariff rates. The main principle underlying the former was to fix a quota for Japanese piecegoods imports and to see that it bore a relation to the quantity of cotton Japan took from India. In the arrangement concluded between Bombay millowners and the Lancashire mission the claim that the Indian industry made to protection was conceded. A lower scale of duties on rayon goods of British origin was agreed to and India was promised that in colonies and British territories she would enjoy the same advantages as the British supplier of piecegoods The most important point was an undertaking to increase takings of Indian cotton by Lancashire and the promise has been traslated into the efforts of the Lancashire Indian Cotton Committee.

In 1935, a special Tariff Board was appointed to examine the effectiveness of the import duties, the level necessary to afford adequate protection against United Kingdom goods and yarn inclusive of rayon and mixture fabrics. The appointment was in response to the request of Lancashire suggesting that import duties should be adjusted in relation to fair selling prices in India. In the cold weather of 1935 the Tariff Board conducted its work, and Lancashire sent a delegation to tender evidence on its behalf in accordance with a provision embodied in the Ottawa Pact giving the U K. or Dominion interest a right of audience. The Board finished its work before February, but the report was held up and its non-publication caused considerable anxiety. Towards the end of June, 1936. the Government of India released the report and put into effect immediately the tariff changes recommended. The duty on plain grey goods was reduced from 25 per cent *ad valorem* to 20 per cent or annas 4⅜ per lb. which ever was higher to 20 per cent *ad valorem* or annas 3½ per lb. whichever was higher (2) the duty on bordered greys, bleached goods and coloured goods was reduced from 25 to 20 per cent *ad valorem* (3) the duty on yarn of counts above 505 was fixed at 5 per cent *ad valorem* and on yarns below 50's was to be 5 per cent *ad valorem* or 1¼ per lb. which ever was higher. The Board considered that the existing tariff conferred adequate protection to the Indian mill industry which has led evidence for an increase in the duties.

The immediate acceptance of the recommendations, without waiting for the legislature's sanction, caused acute disappointment, though the recommendations were not surprising, in view of the fact that the agitation for concessions had been intensified. The chorus of representations against the report had little effect, but the tariff concessions led to no improvement so far as Lancashire was concerned, for a rise in cotton prices, the passing of the Spindles Bill and rising wages at home involved an adjustment of prices that rendered the tariff revision of no advantage, as the import statistics indicate. But the criticism of the Government action was not lost sight of in the negotiations for a new trade treaty with Britain and one of the consequences of the criticism was the appointment of a panel of non-official advisers to assist the Commerce member.

It were unnecessary to continue in detail this tale of adjustments of duties and quotas, if only because the outbreak of war in September 1939 opened an altogether new chapter in the industrial history of this country after more or less wiping out the past. To preserve historical perspective it is more important to realise that, though protection for the cotton textile industry has figured so largely in contemporary discussions, the progress of the industry has at every stage been far less dependent on it than on the nexus of more or less fortuitous circumstances that arose at short intervals to give a powerful fillip to the the industry. It is not generally remembered that the Tariff Board conducted only two enquiries into the question of protection for cotton textiles; and the first enquiry was as late as 1926 and was occasioned more by the aftermath of the war and the high exchange ratio than by any intrinsic weakness in the position of the industry. Besides, only Bombay was vitally concerned in the enquiry and to a less extent Ahmedabad, while other parts of India were hardly as importunate in their appeal for protection. If the exchange factor, in regard to sterling in the earlier stages of the post-war period and in regard to yen in the later, were eliminated, the cotton mill industry's need for protection will be seen to be less than it has been believed to be. But one thing, however, must be remembered that the depression of the early 'thirties of which dumping was a part also brought on a set of circumstances in which, first, a 25 per cent surcharge on import duties and later, elaborate systems of quotas arose to give sufficient aid to the mill industry in India.

In fact, the depression brought to an end the short period in which tariffs and protective duties were the chief concern of the industry. For, the post depression period, which may be deemed to have ended with the outbreak of the present war, was a period of bi-lateral trade pacts with two countries, who are at once the consumers of our raw material and the competitors of our indigenous industry. In our dealings with these two countries, we have, then, the intrinsically incompatible aims of increasing our exports of cotton and reducing our imports of cotton goods. The cotton textile industry had then come to be closely linked with the producers of raw cotton in the sense that their plans and their demands had to provide for the needs of the agriculturists. To the extent that the trade pacts fixed quantitative limits to the imports of cotton piecegoods the industry gained for the first time the degree of security which it had all along asked for in vain.

To the credti of the industry it must be said it made the most of this security as, indeed, it had made the most, at an earlier stage, of the security afforded to it by the rising tide of nationalist sentiment in the country.

The striking expansion of cotton textiles in India must perhaps be traced from the time the Bombay and Ahmedabad mills actively took up the suggestion of the Tariff Board and started to develop the manufacture of cloth of higher counts. From the middle of the third decade of this century, the industry had a many sided development (1) in the quality of goods (2) in the diversity of goods and lastly (3) in wider expansion over the country and increase in output.

It is not to be supposed that production in all the areas is more or less alike. In fact, historical and geographical causes have gone together to create special features in the cotton textile production of the principal centres; and the following taken from an account prepared under official auspices gives a succint summary of the facts relevant to this context.

"The range of cotton materials produced in the two great industrial Cities extends over a wide field, and it would be no exaggeration to say that they are capable of producing almost any grey, bleached, woven' coloured or printed cotton fabric in general demand. Normally, however, when catering for the Indian market, the bulk of the cloths produced in Bombay City consists of light texture cloths made from medium count yarns, but a number of mills during recent years have specialised on fine count cloths which compare in qualiy wih the best exported from England. Grey and bleached plain weave cloths, such as longcloths, shirting, T. cloths, domestics and sheetings account for about 600 million yards of the City's total production, and the bulk of the remainder consist of dhoties—about 400 million yards—and coloured goods between 250 and 300 million yards. No detailed statics are available as to total annual production of bleached, pice dyed, woven coloured and printed goods which Bombay City mills turn out, but it can be stated that during the last few years the outturn of printed giods and the better qualities of bleached shirtings, cambrics, voiles and mulls has substantially incraased.

"Ahmedabad normally produces approximately 1,000 million-yards of piecegoods per annum. Her production also covers a wide field, and the outturn of bleached goods, coloured goods and fine count cloth is somewhat greater than that of Bombay City. Ahmedabad also produces dhoties and saries

on an extensive scale, and has made considerable progress in recent years in the production of cambrics and prints.

"The Province of Madras has more than 50 mills, but many of them are purely spinning mills catering to the needs of the very important handloom weaving industry in that part of the country. Many of the mills are comparatively new and very well equipped. In the realm of cloth production, the main specialities of the Province are the famous Madras handkerchiefs produced chiefly on handlooms—high-class cotton coatings, bleached shirtings and drills and Service Khaki.

"The Cotton Mill Industry in Bengal has made exceptional progress in the last ten years, and this is not surprising in view of the fact that Calcutta is probably the largest single cotton piecegoods market in the world. Up to the present, production has been almost wholly confined to grey and bleached goods, with dhoties for home consumption predominating.

"The United Provinces, with Cawnpore as the chief centre, produces more than 225 million yards of cloth per annum. Grey and bleached goods account for more than 95 per cent of the production, and the cloths produced are usually coarser in texture than those manufactured in Bombay and Ahmedabad since local cottons are almost invariably used. The main production is dhoties of the type used in Northern India. Other lines of manufactures in which the Cawnpore mills are famous are Tentage and dosuti fabrics.

"Delhi and the Punjab specialise mainly in coarse count cloths made from local short staple cotton. Delhi produces considerable quantities of dhoties and tentage materials and excellent upholstery and tapestry fabrics, while the main line of production in the Punjab, where the mill industry is in its infancy, consists of longcloths and T. cloths.

"Production in Indian States has grown rapidly in recent years, and an extremely wide range of goods is being produced. Whilst most of the goods manufactured are made from coarse count yarns, there are a number of mills in Baroda State which specialise in fine count fabrics, and in centres like Indore, a large proportion of coloured goods are made."

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The boom of 1937 has in many ways been advantageous to this country. But for the large number of new company floations during that boom period, consumers of the various important commodities would have been very much in the same position as in the last war. The developments in the years 1937 to 1940 were noteworthy especially in the paper, chemical, glass, rubber and iron and steel industries and it is needless to say that we have to be entirely dependent on our own resources in regard to these articles manufactured by these industries in this war period. Before the war there was a cry of overproduction in the paper industry, and with the cut-throat competition between the various mills within the country, paper prices were very low and there was a heavy accumulation of stocks. With the large import of paper of the unprotected qualities, and, even of the protected varieties, the excess of the Indian industry's capacity was said to be as much as 50,000 tons!

With the complete cessation of imports and the dependence on home production, there is naturally an acute shortage of paper and prices in the black market are out of relation to ex-mill prices. The position was complicated by the decision of the authorities towards the end of 1942, following the promulgation of the Paper Control Order, that 90 per cent of the production of Indian mills should be placed at the disposal of the Government and that the balance of 10 per cent, about 9,000 tons, only was available for ordinary consumption. This naturally led to a considerable disturbance in the ordinary activities of the printing and publishing trade and even the mills had to represent that the quota allowed by the Government for ordinary consumption was far below the quantity needed by them and that some economies had to be made in Government consumption. Eventually, the Government agreed to place 30 percent of the production at the disposal of the mills. It was pointed out that 30 per cent of Indian production at the mills by the elimination of the manufacture of finer varieties of paper and the standardisation of output over a smaller range of products, would amount to more. The Government did succeed to a certain extent, with the cooperation of mills, in increasing production but recent developments threaten to upset completely the policy pursued by the Government and the industry. Apart from the difficulty in obtaining supplies of coal, due to the lack of which the Titaghur Paper Mills Company had to close down one paper machine at each mill in the half-year ended September 1943, considerable difficulty is being experienced in regard to supplies of raw materials, particularly bamboo. There is a large increase in the demand for bamboos from the military authorities to built huts-ments. It is reported that in order to relieve the scarcity of paper supplies the Government authorities are considering the import of about 20,000 tons of paper from abroad as the shipping position is very much easier. It is pointed out that a certain portion of the increase in the consumption of paper by the Government and military authorities should be met by supplies from abroad. This is perhaps the reason for the suggestion made recently that, with the approval of the Government of India, further steps are being taken to improve the efficiency and scope of the Paper Control and Distribution Association because, as anticipated, it has been found that the quota of 30 percent of the total production of paper made in this country is inadequate for the civil demand. It is not yet clear whether or not the 30 percent quota will be maintained during the period of short production, which must ensue as a result of the reduction in the coal quota, but representations have already been submitted to the Government with a view to securing a larger proportion of the total production of paper to meet the needs of war industries, education, the printing and publishing industry, and commerce and trade generally.

Paper making in India is of some antiquity. At least one writer claims that a hand manufacture process had been known and practised from quite early times. But we are not now concerned with the evolution of craftmanship so much as its establishment as a modern industry. This may be said to date from the year 1867 when the first paper mill subsequently absorbed into a larger concern, was established on the Hooghly. During fifteen years of solitary existence this mill made no very marked headway in either technical or commercial department. In 1879 a second paper mill in Upper India had come into production and in 1882 the third mill was registered as a public limited company. These three, with a couple of smaller concerns in Gwalior and Poona, were the early pioneers in an industry which in its early days does not appear to have made a very strong appeal to the industrial entrepreneur of last century. By 1925, the year in which the industry first made an organised appeal for protection by tariff, there were 9 mills in existence, whilst two more were projected. In the intervening years the number of mills in production has only been increased by two bringing the total to 11 in 1940. The relatively high capital outlay coupled with the admittedly difficult technical processes have tended to keep down the number of paper making concerns in India. For most of the time that paper has been made in India manufacturers have looked mainly to the domestic market for their sales, but the time has arrived when paper making in India may be ranked amongst the country's potential exporting industries.

In its early days the Indian industry considered the manufacture of high class white paper rather beyond its capacity, and this was to some extent due to its dependence upon rags and waste paper for its raw material. But this crude practice was soon to change. Routledge in 1860 proved the virtues of esparto—a semi-tropical grass— and in 1875 and 1879 reported upon the possibilities of Indian bamboo which served to draw attention to other Indian fibres. There are only incomplete records of the early experiments with Indian fibres, but it is known that two mills made use of Moonj (Saccharum Mooja) and Sabai (Ischcemum Angustifoilum) in their first years. Moonj seems to have held the field in the beginning, for it made a very good paper. Sabai, however, presented less difficulty as regards treatment, and, therefore, soon came into universal favour among Indian mills. Having found in Moonj and Sabai ample resources of plant fibre it was perhaps natural that the Indian mills then in operation should at that time have made no effort to follow up Routledge's researches in bamboo—a much more difficult problem. But it is an interesting speculation to think of the possibilities had the technique of bamboo pulp manufacture received simultaneously the attention given in other countries to the technique of wood pulp manufacture. Possibly, India might have come to the forefront as one of the world's most important producers of pulp and paper. What actually happened was that the industry based on Sabai grass, while relatively still in its infancy was almost put out of business by the competition of wood pulp. Nevertheless in bamboo it later found a new raw material of great value.

A few details about the homely indigenous fibre which provides the raw material for this great Indian industry may not be out of place at this point. Both the Tariff Board of 1925 and Tariff Board of 1931 found the supplies of bamboo in areas where the other conditions were favourable for exploitation were sufficient to meet the needs of all the paper mills in India and to leave a surplus from which an export trade in pulp could be developed. Apart from Assam and Chittagong, seven areas were specified as having been subject to regular survey, one in Orissa, two in Madras and one in Bombay, from which the estimated yield of bamboo was 291,000 tons, and three in Burma from which the estimated yield was 1,661,000 tons. The quantity of bamboo available from surveyed areas in India now exceeds 600,000 tons against an estimate of 291,000 tons in 1930-31. Additional supplies are obtainable from unsurveyed areas for which no estimates are available. Assuming that 2.38 tons of bamboo on an average are required to make a ton of paper, the quantity of bamboo at present required by mills is about 40,000 tons. There is, therefore, an ample margin of reserve supply available for an extension of bamboo pulp manufacture. In Burma, where supplies of bamboo are even more abundant, no paper mills have as yet been established.

The advantage of bamboo as a raw material in comparison with wood is that the cutting rotation is on an average 4 years as against 60 years for most species of wood. A disadvantage is that when bamboos seed, they die, and in any given area the supply may be curtailed for a period of 10 years. Bamboos seed 'gregariously' or 'sporadically' and the degree of sporadic seeding varies. Recent investigations indicate that the seeding of bamboos is more gradual than was at one time thought and does not extend to all species simultaneously. Further, the reed bamboo stems remain suitable for the manufacture of pulp for a considerable time, which tests have proved to be at least four years. The danger of a shortage of bamboo in any given area in consequence of seeding is not, therefore, considered serious.

After bamboo, grass is the second most indigenous material used in India. The species used for the making of pulp is "Sabai" grass which is grown mainly in the Punjab. Whilst bamboo is the principal material on which the future of the paper industry mainly depends, grass as a constituent of paper has a recognised value and will continue to be used in conjunction with other materials as a necessary ingredient in the manufacture of certain classes of paper for which special bulk or tensile strength is required, just as esparto grass is used by a

particular class of mills in the United Kingdom. It is probable that, with improvement in the quality of bamboo pulp, mills, which can obtain supplies of both bamboo and grass, will to some extent substitute bamboo pulp for grass pulp on account of its relative cheapness. But in the United Provinces and the Punjab, where adequate supplies of bamboo are not available, grass must continue to be the chief raw material. Waste paper and cloth cuttings are also used as ingredients in the manufacture of cheaper class of paper to a small extent by bamboo and grass mills and to a greater extent by other mills. The quantity used was 5,900 tons in 1936-37. Supplies are obtained by mills through contractors mainly from large towns where sufficient quantities are available for the collection of different qualities. White paper and paper cuttings are in most requirement. Coloured papers are sorted out from the white and used for the manufacture of inferior papers such as badami and brown packing. In most countries that make pulp, wood of the coniferous variety is the principal material used. In India, forests of coniferous trees—pine, spruce and fir—are available in the Himalayas, but difficulty of extraction and lack of transport feilities, have hitherto stood in the way of the utilisation of wood for the manufacture of chemical pulp. It is doubtful if use can be made of spruce and fir on account of the inaccessibility of the areas in which they grow except in the Kashmir State. The possibilities of using pinewood are more promising. A number of auxiliary materials are used in the Indian industry. Some of them are indigenous; some have to be obtained from elsewhere. A limited quantity of wood pulp is imported either as bleached pulp ready for admixture with bleached indigenous pulp or as unbleached pulp which requires bleaching along with other material. The chief qualities imported are bleached sulphite pulp, and easy bleaching and unbleached strong sulphite. Small quantities of special kinds of pulp such as aspen and kraft pulp are imported for special lines of paper.

As the manufacture of pulp from bamboo is exclusive to India, a brief description of the process should find a place in any survey of the industry, however brief. Imported pulp is no longer essential, though for certain purposes it is sometimes added, but the best qualities of printing and writing papers can be made without its admixture. One of the main trends of research in recent years has been the increasing use of indigenous materials, which has in fact been an essential condition of the protection in certain categories of paper which the industry has enjoyed for some time past.

The initial stage in manufacture is the crushing or chipping of the raw bamboo into a form suitable for the subsequent processes. This mechanical treatment is necessary in order to disintegrate the fibre and render it accessible to the chemical re-agents employed in the process of digestion. The experience of mills which manufacture pulp from bamboo, is that crushing in a series of rollers is more satisfactory than chipping the bamboo in chipping machines. The next process is the digestion or cooking of the disintegrated fibre, which is the chemical process by which the various substances other than cellulose are dissolved. These substances consist mainly of pectins and lignins in several forms. Two processes are in use, which may be described as the acid process and the alkali process. In the acid or sulphite process the chemicals used in the preparation form magnesium-sulphite.

The acid liquor is pumped into the digesters loaded with the bamboo chips by the direct overhead method and the temperature slowly raised by the admission of steam under pressure. The digesters consist of a mild steel shell lined with acid resisting brick and are of different capacities. After cooking is completed, the contents of the digester are blown off into a 'blow pit' from which the spent liquor carrying the non-cellulose material is drained leaving the bamboo pulp behind. The alkali process may be subdivided into two, the soda process in which the principal chemical used is caustic soda, and the sulphate process, and the soda process in which sodium sulphite is mixed with a small proportion of caustic soda. The application of the chemicals used can be made in more than one way. The 'fractoinal' and the 'cascade' methods are those at present in use in India. The average total period of cooking is 14 to 15 hours including washing of the pulp. Those mills using the alkali process have special plants for the recovery of chemicals. After the digestion or cooking process is completed and the pulp drawn off from the digesters, the next stage is washing and straining to remove impurities. The pulp is then pumped into a conceptrator where the water is extracted and the concentrated pulp passed to a storage chest ready for the process of bleaching.

Where grass is used it is first dusted and then loaded into digesters. The process of digestion or cooking of grass is carried out in one operation at a constant pressure with sodium hydroxide either by the direct overhead or by the 'fractional' system. The pulp after digestion is broken up, strained, washed and bleached. After completion of the process of bleaching the bleached pulp is passed to the bleating house. If imported bleached pulp is used, it is added at this stage. The process of bleaching is of great importance since the quality of the paper made depends largely on the attainment of the correct degree of consistency in the pulp. The length of time required for bleating depends on the nature of the material from which the pulp is made. After beating the pulp is passed through the paper machine to emerge finally as paper.

In recent years a good deal of attention has been paid by Indian manufacturers to bringing their pulping and beating processes up to date, and the rapid improvement in the quality of Indian paper has undoubtedly been due to the replacement of obsolescent machinery by more up-to-date plant. There has been a fairly general introduction of sizing plants, calendering machines, new cutting and reeling machines and guillotines for trimming, whilst as a whole the tendency has been to introduce the electric drive for plant where it was not already present.

For the sake of clarity we might very roughly classify those categories of paper which enjoy tariff protection and those which do not. Protected papers include all kinds of printing paper with the exception of chrome, marble, flint, poster and stereo containing no mechanical wood pulp, or in which the mechanical wood pulp amounts to less than 70 per cent of the fibre content. Writing paper is also protected. Unprotected papers include packing and wrapping paper, articles made of paper and *papier mache*, printing paper of all sorts which contain mechanical wood pulp and stationery. The report of the findings of the last Indian Tariff Board to enquire into the paper industry made some interesting calculations as to the future of consumption and the capacity of the industry to meet it. During the period 1929-30 to 1936-37 consumption increased by 6,656 tons, an annual average increase of 951 tons. They calculated that consumption in future may fluctuate from year to year in accordance with the effect economic conditions may have on the purchasing power of the population, but over a period of years may be expected to increase with the spread of literacy and the growing demands of educational institutions. They thought it difficult to estimate the rate of increase, but it was likely to be higher than in the period 1929-30 to 1936-37 unless any abnormal circumstances intervene. They considered the average annual rate of increase during the next few years might be estimated at 1,500 tons per annum, distributed over the protected and unprotected classes of paper in the proportion of 62 and 38. On this calculation the demand for protected classes of paper might be expected to have risen to 57,000 tons by 1940-41 and unprotected classes of paper to 35,000 tons, a total of 92,000 tons. By 1942-43 the capacity of established mills, they thought, would have increased to 63,900 tons. The capacity of new mills under construction or definitely projected was thus estimated at 95,600 tons, but it is unlikely that they will be in a position to manufacture to their designed capacities. Assuming an output of 80,000 tons, and allowing for the fact that three mills are designed to manufacture paper mainly of the unprotected classes, the production of protected classes of paper might exceed the demand by some 7,000 tons, but the total production would fall short of the total demand by 12,000 tons, taking protected and unprotected classes together.

These figures, which were compiled some two years ago before the situation had been so radically changed by the war, make an interesting comparison with a later calculation. The present annual production of the Indian mills is 90,000 tons, a figure which excludes the output of one mill that had changed hands and has been temporarily out of production. During the immediate prewar period, and since the commencement of hostilities, there has been a sharp jump in output. It will be observed that, by comparison with the present estimated annual production of 90,000 tons, the Indian mills a little over two years ago were producing at the rate of just under 60,000 tons per annum.

It will be seen from the foregoing that even with an output of 90,000 tons per annum there is a shortage. Government consumption was then only around 25,000 tons. If it is remembered that the consumption on account of Government departments has increased to 80,000 tons it is unnecessary to point out that there is an acute shortage of paper for ordinary consumption and the recent ordinances leave only about 30,000 tons of paper even after allowing for increased war production and economy in the use of paper by Government.



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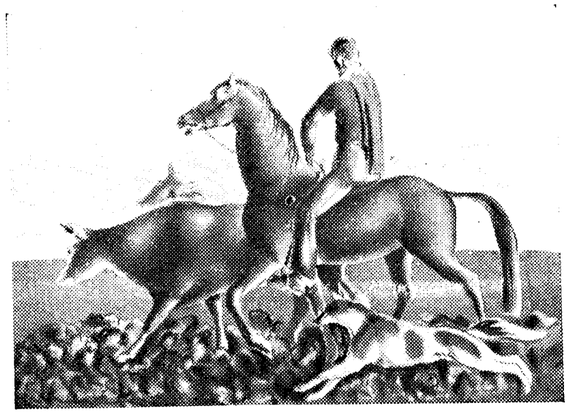
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THE British are a race of animal lovers. A sick beast is a matter of active concern. War has starkly reminded everyone in Britain of the close connection between the healthy man and the healthy animal. Today the well-being of every man, woman and child rests in part on the health of our livestock. Healthy cattle mean more and better meat, milk and butter; healthy sheep and lambs, more wool and food; fit poultry, more eggs; and horses sound in wind and limb mean more work on the farm. The maintenance of good health and the prevention of disease amongst farm animals are thus vital. Under the spur of necessity British veterinary medicine is playing an essential role in the national economy. Although the subject of veterinary science was studied in some European cavalry schools in the fifteenth century, it was not until 1790 that a veterinar college was established in London. The great advances made in preventive medicine in the nineteenth century were a stimulus to a similar attack on the scourges to which animals are subject. The results are seen today in the way many diseases have been eliminated or brought under effective control. In the British Isles the deadly rabies, so often transmitted to Man by the bite of a mad dog, belongs to the past. Rinderpest, the cattle plague that kills millions of beasts in Europe and Africa, does not now exist. Anthrax is no longer a farmer's nightmare. Destructive diseases of sheep and lambs due to gas gangrene bacilli can be prevented and cured. Foot and mouth disease is better under control than anywhere else in Europe. But these achievements, great in themselves, are no more than a beginning on a small scale. Similar problems on a much vaster scale remain to be tackled in India. Not to mention the need to extend the fight to diseases such as tuberculosis, contagious abortion, mastitis, sterility and ill-health due to parasitic worms—diseases which are estimated to cost £20 millions a year within the small compass of the British Isles alone! How much more do they cost India? In the era of preventive animal medicine, now opening, synthetic organic chemicals will play a decisive part. The worker in the biological research laboratory and the chemist in the factory are uniting to help the veterinary profession to control the diseases of animals and thereby sustain the health of the nation.

(ICI)

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IRON & STEEL INDUSTRY

The importance of the Iron and Steel Industry in the present war can scarcely be under-estimated for, as is well-known, the only two important materials required for the successful prosecution of the war are steel and oil. In this sense, the rapid strides made by the Indian Iron and Steel industry during the past few years has been opportune and of great strategic importance. Compared to the production in the important countries in the West, Indian production may still seem to be insignificant but it would be important to know that the real progress was made only during the 'thirties and that the war has found the Indian industry in a sound and prosperous condition. The progress made by the Tata Iron and Steel Company Limited, the biggest single unit in the Empire, and the successful floatation of the Steel Corporation of Bengal in 1937, and the coming into operation of the plant soon after the outbreak of war, are the important features in the history of the Indian Iron and Steel industry in recent years.

The important companies, the Tata Iron and Steel Company, Limited, the Indian Iron and Steel Company, Limited, and the Steel Corporation of Bengal Limited are at present engaged on the production of war materials. The task of the iron and steel industry has indeed become very difficult in the last two years as with the virtual cessation of imports and the sharp increase in demand, there is a scarcity of steel and deliveries for ordinary consumption can be had only after a long period. The Indian industry is placed in a very important position as with the fall of France and the growing importance of the Middle East, it has been entrusted with the task of supplying the steel and pig-iron requirements of Iraq, Egypt and other countries. More than the problem of supplying large quantities of standard products, the companies have been obliged to start the production of new alloys and new lines.

The industry has great natural advantages and Mr. Dunn of the Geological Survey of India has drawn attention to the mineral resources of the Singhbhum District of Bihar which can be compared to the northern part of Ontario. As regards iron ore, limestone and coal, India is now considered to possess great advantages and the average experiences of the small units working in the 19th century are now belied by the great success attained by the Tata Co., and the Indian Iron and Steel Co. The proximity of good class coal to the iron ore deposits must be regarded as the main factor making for rapid progress and although there have been fears that the coking coal supplies in India give out, proposals aiming at the conservation of the country's coal resources now render it improbable that the industry's advance will be retarded by the shortage of the right kind of fuel. In Europe and America, transport costs are appreciably higher and the cheapness and quality of Indian iron ore and its proximity to coal fields are not equalled in any other coutry. Nature has done more than her share in providing the essentials for the iron and steel industry and so far as labour is concerned, experience has gradually provided a trained labour force whose efficiency is steadily rising. There has never been any fear as regards any shortage of the volume of labour and the iron and steel industry during the last year has done enough to guard itself against labour unrest in any form.

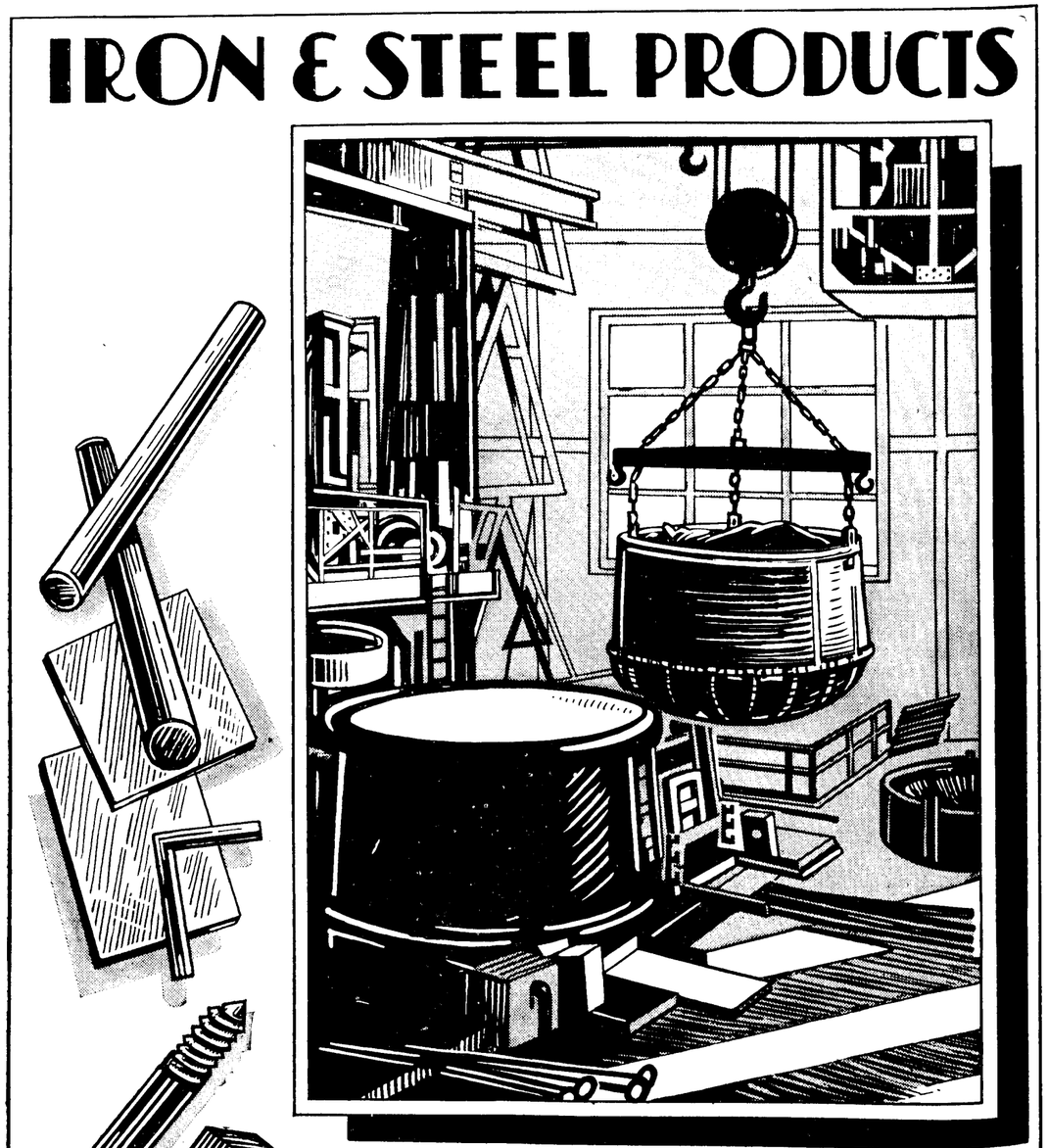
India's increasing consumption of iron and steel makes any anxiety concerning markets almost superfluous. India has been a large importer in the past and the domestic production can only satisfy part of the existing demand, the increasing industrialisation of the country makes it certain that the demand for iron and steel and manufactures thereof will not decline but will increase considerably. The substantial progress made by the subsidiary industries established in conjunction with the iron and steel industry during the past few years afford a reassuring indication of what a prosperous steel industry can do for the country. The benefits, obtained by the tinplate industry, the wire and nail products industry during the past few years have been real and tangible. The plants of the subsidiary companies located round Jamshedpur are all likely to share to the fullest extent in the present prosperity of the industry. The foundries and workshops scattered over all provinces are also likely to experience the benefits accruing from the expansion of iron and steel production after a period of depression in which progress was at a relatively slow pace compared with the very substantial expansion of the steel industry in America and Europe. Round Jamshedpur, as every one is aware, there are numerous plants based on the iron and steel produced by the Tata Company and their progress in the last decade despite unfavourable trade conditions is indeed a happy augury of what is to come. The industries, which have followed the establishment of the potentialities of industrial development in this country and the great natural advantages of the iron and steel industry and its growing prosperity have come to reinforce the hopeful prospects that these subsidiary industries have now before them.

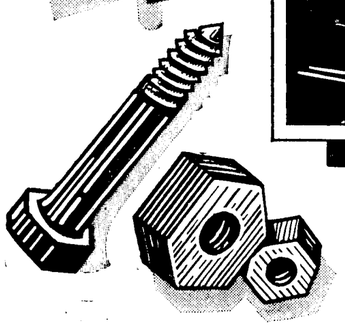
The iron and steel industry was the first to be investigated by the Indian Tariff Board. The Board appointed in 1923 reported in favour of protection and the Indian Legislature passed an Act recommending the levy of specific duties on imported iron and steel materials and the grant of bounties for the manufacture of rails, fishplates, etc. The engineering side also received the benefit of 25 per cent. duties on fabricated steel and the Act also made provision for the protection of the recently born tinplate and wire and nail industries. The scheme of protection was revised in consequence of a heavy and unexpected fall in Continental steel prices and the rise in the rupee exchange to 1s. 6d. The Tariff Board recommended an increase in the duties on imported fabricated steel. The Government of India accepted the findings, but held that a scheme of bounties was preferable to the steep increase in duties recommended, and the Board itself approved the proposal to grant a bounty up to Rs. 50 lakhs on steel ingots produced.

Subsequent tariff board enquiries adopted the scheme of bounties introduced in October 1924 and an act of the Indian Legislature in 1926 amended the former act and provided for higher specific duties. A later enactment in 1927 extended protection till 1933-34 and conferred power on the Governor-General-in-Council to increase the duties, if protection was threatened by dumping. Prior to this, the statutory enquiry of the Tariff Board reviewed the working of protection and recommended two scales of duties, basic and additional, the former applying to British manufactures and the latter governed by the price of Continental manufactures. Though the margin of protection was based on the Board's view that all possible encouragement to Indian Steel should be given through State purchases found favour, and in the case of fabricated steel also, the Board held that the use of Indian products should be encouraged by the railways and other consumers. Tariff changes since 1926 were not of any moment and the revenue duty on imported pig iron also was retained. The progress of the Indian industry was examined from time to time by the Tariff Board in connection with inquiries in relation to the wire, nail, tinplate and galvanised steel industries.

The working of protection was investigated thoroughly by the last Board appointed in August 1933 and its conclusions deserve to be set down. The Bord considered that the scheme of protection adopted in 1926 had proved successful and that the expected reduction in prices has been effected and that a stage had been reached when on all articles sold by the steel company in competition with Britain, it was possible to say that on imports either no protective duty is required at all or if any is required, the rates may be lower than the normal rates of revenue duty. The Board added that if Continental steel products were sold at fair prices the Indian industry could well stand their competition, and that the duties which needed were more in the nature of anti-dumping than protective duties. The Board recommended a duty of Rs. 43 per ton on the imports of untested structurals from the Continent: Rs. 10 per ton on British bars (tested): Rs. 39 per ton on Continental untested bars: Rs. 25 per ton on untested plate from the Continent. On rails, fishplates, structurals and tested plates from Britain the Board recommended no duties. On black sheets (tested) from the U. K. the Board recommended Rs. 10 per ton and Rs. 32 per ton on imports from the Continent. Galvanised sheets were recommended to be subject to an import duty of Rs. 10 per ton, irrespective of the country of origin. On imports of fabricated steel from countries other than Britain a duty of Rs. 40 per ton was recommended. The Board advised a duty of Rs. 38 per ton on British tinplate and Rs. 57 per ton on Continental. On imports of wire nails, the scale recommended was Rs. 25 on British and Rs. 60 on foreign. A duty of Rs. 57-8 per ton was recommended on cast iron pipes imported from foreign countries, while British pipes were to be allowed free entry. The more important part of the Board's proposals related to the recommendation that even the revenue duties on rails and tested structurals should be removed or in the alternative, countervailing excise duties should be levied on internal production. The Government of India accepted the recommendation of the Board, but preferred equalising duties to the removal of the revenue duties. The principle laid down in 1929 and followed since, that in the main amount of protection should be the difference between two prices (1) the c.i.f. price at which foreign steel is likely to be landed in India without duty and (2) the price at which the Indian manufacturers can sell at a reasonable profit which was termed the fair selling price. In the 1933 report also,

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the Board based its recommendations on the same principle after reviewing the working of the protective scheme in force for the previous seven years. The Board noted the large share of the Indian market now supplied by Indian manufacturers. The share obtained by the Tata Company rose from 30 per cent. in 1927-28 to 72 per cent. in 1932-33 Imports were consequently reduced and foreign plants were working at a level much further below their capacity compared with Tatas.

The reduction in costs obtained by the Tata Company as a result of expansion and experience formed the subject of approving remarks, but the view that even the revenue duties were superfluous induced the Government to levy an excise duty of Rs. 4 per ton on steel ingots and countervailing duties on imports by the Iron and Steel Duties Bill of 1934. The Board's report was the subject of serious criticism, and the objection in principle to differential duties, the introduction of the back door, and the practical termination of protection formed the main points of attack. In the succeeding year the industry passed through a period when the effects of the tariff changes made themselves felt. Imports increased and domestic production was affected to some extent by the levy of the excise duty. Prices too were lower and the Tata Company had to work for a reduction of costs in order to bear the excise duties which amounted to Rs. 35 lakhs and also the lower level of prices while freight rates also, especially, on the E.I.R., proved a source of disadvantage. But the Company increased the efficiency of the plant and raised the output thereby. Equipment was kept in first class condition and a second sheet mill was brought into production. Better results were obtained from the coke plant and a battery of coke ovens constructed.

The progress of the Tata Company in recent years does not form the principal feature. 1936 will be memorable for the reconstruction of the Indian Iron and Bengal Companies. After protracted negotiations to start a new steel company in conjunction with Tatas, the scheme was abandoned. While Tatas decided to carry out their own scheme of development independently, Indian Iron also decided to prosecute their scheme and sponsored the formation of a new plant at Hirapur to work with the hot iron provided from its furnaces and also to give facilities as regards land, water and lighting, etc. The Steel Corporation began operations in November, 1939.

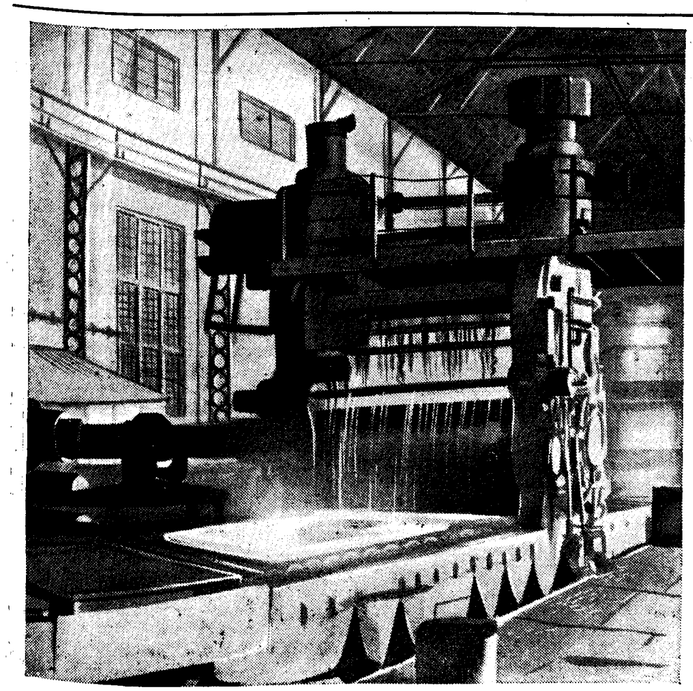
The progress of the industry in recent years will be evident from the following figures. Production of steel ingots has increased from 5,90,600 tons in 1932-33 to 1,070,400 in 1939-40 nearly double the former figure. Monthly production has been well over 100,000 tons since the coming into operation of the Steel Corporation of Bengal. Production of finished steel during the same period has increased from 441,600 tons to 1,065,600 tons.

The important part played by the iron and steel industry in the country's war effort will be evident from the fact that nearly the whole of the production is taken up by government orders and it has been necessary to ration steel consumption. Apart from the sharp increase in the production of steel a very good opportunity has been afforded to the industry to manufacture new qualities of steel. The manufacture of alloy steels and acid steel has not been hitherto undertaken in India. The Tata Iron and Steel Company is now in a position to undertake the production of these qualities of steel. Only recently the plant for the production of axles and tyres was put into commission.

Even before the outbreak of war imports showed a tendency to decline with the European countries busy on rearmament. Till May 1940 imports of steel were coming in at a fairly satisfactory rate but since then there has been a sharp decline and at the present amount to only very small quantities of special steel. There are practically no imports of the protected qualities. Apart from the decline in imports and the increase in internal consumption, there is need for catering to export markets. Exports have increased from 84,600 tons to 106,500 tons in 1939-40.

The products of the Steel Corporation are sold through the extensive selling organization of the Tata Iron and Steel Company. It will thus be clear that the industry is of great importance to the country at the present moment. The industry in its turn has been afforded a great opportunity to consolidate its position and manufacture certain lines, the production of which were considered hitherto unpracticable in India.

The part played by the Indian Iron and Steel Industry in the war period is very noteworthy, and it should be said that the intensified production with the extensions to plant came in very handy at a time when the United Nations were hard pressed for shipping space. It was thus that the production of the Tata Iron and Steel Works and the Steel Corporation of Bengal, two of the biggest units of the Iron and Steel Industry in this country, showed an increase month by month and year by year and the



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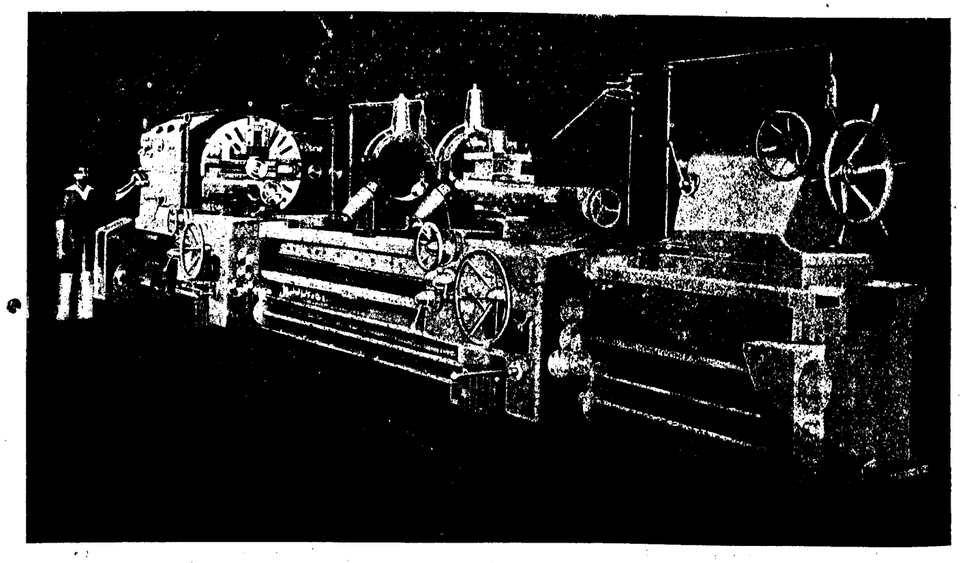
peak of production during the war, so far as the former was concerned, was reached in 1943. Almost the whole of the output of the industry was taken up by the Government and the control of the affairs of the industry in the last year was even more rigorous. Prices for billets, scrap, re-rollable steel were fixed and the distribution of these productions was regulated by the Government authorities. With the extensions to the Steel Corporation of Bengal nearing completion, and the large-scale imports of American steel, the position in respect of supplies of steel can be said to be very much easier, though by this it cannot be said that Indian companies can afford to relax their production schedule.

As has been pointed out on former occasions, the war period is notable for the great strides made by the industry in respect of both the voulme and range of production and the improvement in technical experience. The advance made in research work also should result in an appreciable decrease in production costs and place the Indian Industry on a firm footing in the postwar period. What is to be borne in mind at the present moment is that efforts for improving efficiency and production and completing the range of production should be pursued with vigour and the country be made almost independent for its requirements. This is especially important at the present juncture as, with the possibility of a National Mercantile Marine coming into being, and the plans for starting an automobile industry in this country, the Iron and Steel Industry should be able to supply the demand from these quarters and not be again dependent upon foreign producers. By this, it cannot be said that we can afford to ignore foreign production for, we have yet to make headway in regard to the manufacture of special alloy steels.

The achievement of the Tata Iron and Steel Company in the last year is something considerable and will be evident from the following: "The Acid Furnace at Steel Making Shop No. 3 tapped its first heat on June 8. The steel from this furnace is utilised for the manufacture of wheels, typres and axles. Another furnace, which is now making basic steel was started in October. The actual manufacture of steel on what is known as the Perrin process, has not yet started. Production at the wheel, tyre and axle plant increased steadily. The axle forging hammer came into operation in April, and the manufacture of axles has begun. The capacity of the axle forging plant is to be increased. The plant has been experiencing some difficulty owing to lack of experienced hands and proper equipment, but despite this its operation is satisfactory. Three bays were added to the Machine Shops and several new machines installed. A chamber klin was installed and put into production at the magnesite brick plant. With this addition, this plant will almost double the monthly output of dead-burnt magnesite. A temporary calcining plant was erected to supply burn lime to Steel Making Shop No. 3 and will operate until the new dolomite plant is ready. Research into the production of special steels and alloys was prosecuted with vigour and results in the development of a number of special tool steels, a new composition armour steel plate and various alloy steels. Experiments on the manufacture of ferro-vanadium have been completed and a plant for its manufacture will be installed in the near future. A plant for the manufacture of ferro-tungsten has been installed and will be brought into production shortly".

It has been proved in war time that American production is stupendous and can perhaps meet peacetime demand all the world over. But in the immediate postwar years, with the main producers in the West engaged on reconstruction work, this country might perhaps be called upon to satisfy the requirements of consumers in the Middle East and the Far East. Building activity within the country also has been slowed down on account of the high construction costs. There is no fear, therefore, of an immediate slump in prices after the termination of hostilities. But the time available should be utilised for a consolidation of the ground gained. The quarrel between re-rollers and the industry might crop up. Some comprehensive plan is, therefore, necessary and details worked out for the satisfactory conduct of affairs of the industry in the years that lie ahead.

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ALUMINIUM INDUSTRY IN INDIA

By Mr. KENNETH HALL

The outbreak of war, and in particular the early realisation that its outcome would be largely decided in the air, has sharply focussed public attention on the importance of aluminium as a primary metal for armament purposes. This fact was realised at an early date by the German Government, and since 1935 strenuous efforts were made to build up the production of aluminium in Germany, both as an essential material in the production of its aircraft, and in an endeavour to attain self-sufficiency by substituting it for other metals such as copper, which necessarily have to be imported from abread. However, Germany possesses no indigenous source of supply of bauxite, the essential ore of aluminium, nor of cheap and abundant electric power with the result that the large expansion of output which has been achieved remains on an artificial and insecure basis. The British Empire, on the other hand, is more fortunate in possessing ample deposits of bauxite as well as of cheap hydro-electric power. Some of these sources of supply, such as the bauxite deposits of British Guiana and the hydro-electric power of Canada and the British Isles, have already been developed, and are at present being rapidly expanded. In other countries including India, these natural resources have hitherto lain fallow, and the task which at present lies ahead of us is to ensure that they shall be utilised as promptly as possible, firstly, as an essential contribution to the winning of the war, and secondly, as an important factor in the development of the industrial and mineral wealth of this country after the war is won.

Prior to the war, a flourishing industry existed in India for the manufacture of aluminium cooking utensils in factories with modern equipment in the principal cities of India and Burma, and in recent years these activities have been extended to include the supply of aluminium castings, equipment for various industries and tea-gardens, and for architectural uses. As a matter of interest, the largest single manufacture of aluminium utensils in the British Empire is carried out by an Indian firm, staffed and operated entirely by Indians. A thriving export business was also built up with various parts of the Near and Middle East, such as East Africa, Palestine, Iraq, the Persian Gulf, Ceylon and the Straits Settlements. The industry was, however, dependent upon outside supplies for its requirements of aluminium, mainly in the form of sheet circles, with the result that since the war, with the shutting off of supplies of raw materials, coupled with the virtual loss of the export market due to restrictions on export, its position has been one of some difficulty. However, existing stocks have been husbanded, in part with a view to meet possible Government requirements. The industry is at present making an important contribution to India's war supplies in the form of utensils and water-bottles for the Army, fuse parts, dust goggles and gas masks, various castings and small stampings, and in the form of ingot. It may not also be generally known that aluminium for deoxidisation purposes is a necessary raw material in the manufacture of steel, and that throughout the war the industry has kept the vast steel works of Bihar and Bengal fully supplied with this essential ingredient.

It is probable that as the potentialities of its equipment are more fully realised, the activities of the industry will be still further extended.

The uses of aluminium in modern warfare are, however, legion. War is essentially a matter of mobility, whether on land, in the air, or under the sea, and here the advantages of the reduction of dead weight by the use of a metal which can give the strength of steel with only half its weight may mean, in the case of a bomber, increased bomb load, or in the case of a tank or battleship, heavier armour or larger calibre of guns. One naturally associates the use of aluminium with aircraft, and the modern plane is constructed for the most part of aluminium, or rather of its alloys. Here I would like to digress for a moment, for the benefit of the lay reader. Aluminium enters into the construction of aircraft in four main forms, sheet, extrusions, forgings and castings. Each of these forms represents different and highly specialised processes of fabrication, which in other countries have mostly been developed from existing industries. Again, aluminium is not used in the pure form common to cooking utensils, but in the shape of what are technically known as "strong alloys." The British Air Ministry lists no fewer than ninety different specifications for strong alloys of aluminium. These are produced by the addition of a small proportion of alloying ingredients, such as copper, magnesium or manganese, combined with a special fabricating technique—the procedure usually being patented—and followed by subsequent heat treatment to give a strength many times that of the pure metal

ALUMINIUM IN INDIA

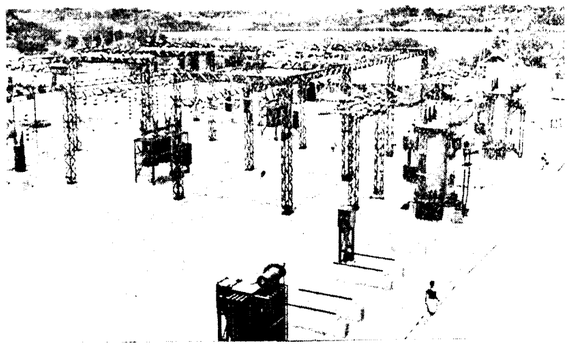
The Aluminium Reduction Works at Alupuram, Travancore State, have been in full commercial operation on the production of virgin aluminium ingot since March, 1943.

The Aluminium Rolling Mills at Belur, Calcutta, have continued operations at full capacity during the past year, and further extensions are now in progress.

The output of both Works is at present absorbed by war requirements, but enquiries are invited for the supply of aluminium ingot, sheet and circles for essential purposes.

ALUMINIUM PRODUCTION COMPANY OF INDIA LIMITED

Head Office: 5, COUNCIL HOUSE STREET, CALCUTTA Rolling Mills: BELUR, HOWRAH, CALCUTTA
Reduction Works: ALUPURAM NEAR ALWAYE, TRAVANCORE STATE



Aluminium Reduction Works, Alupuram.
Outdoor Transformer Yard.

and in some cases higher than that of steel. The production of strong alloys, and their fabrication in the four forms which we have mentioned above, has been the result of painstaking and extremely costly research, both on a laboratory and manufacturing scale, by the aluminium producers; and it will be realised that they represent specialised and extremely technical processes, in which rigid technical and laboratory control is essential, if specifications are to be successfully met. Before the production of aircraft in India—as distinct from their assembly or manufacture from imported parts—can be visualised, these industries will have to be set up and their problems overcome. The same will apply with added force to the manufacture of aircraft engines and parts and airscrew blades, which are also forged from aluminium.

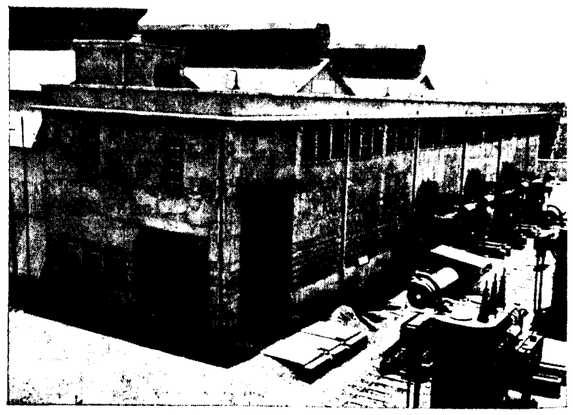
The mechanisation of modern armies has greatly increased the demand for the metal. Motor lorries and all forms of mechanical transport call for aluminium pistons, cylinder heads, crankcases, and gear boxes, as well as for many other minor parts. The same applies to tanks, whose speed and mobility are increased by the use of light-weight metal in engine, gear-box and track parts. The infantryman uses aluminium in the form of water-bottle, mess-tin, as well as gas mask. The signaller's field telephone and wireless sets are largely constructed of it. The gunner uses it in range-finding and sound-ranging instruments, and also in gun sights and fuse parts. The Lewis gun, still the most useful weapon in and against aircraft, is fitted with an aluminium radiator to cool the barrel. Aluminium powder, in the form of "thermit," is used in incendiary bombs, while the ordinary explosive bomb is largely constructed of aluminium. The Navy has used the metal for many years in various forms, including engine room equipment and deck fittings.

The foregoing gives a brief idea of some of the more important uses of aluminium. However, to us in this country, it is of more immediate interest to consider in what directions the aluminium industry in India can be of greater service to the Empire war effort, and in particular how the large natural resources which India possesses, both in bauxite and in the production of electric power, can best be utilized. Firstly, let us consider the aluminium world picture to-day, from the point of view of the Democratic powers, i.e., the British Empire, the United States and Russia. Within the British Empire, aluminium smelters are located in England and in Canada. These have been, and are being, rapidly expanded to keep pace with the steadily increasing demands of the aircraft industry, but, as we shall explain, have also had to face other large, and possibly unexpected, demands. The United States, prior to the war, did not export aluminium in any appreciable quantity, and it may therefore be presumed that its smelter capacity, while extremely large, was proportional to its normal peacetime requirements. A very large-scale programme of expansion is now under way, but it necessarily takes a certain amount of time to obtain production, particularly when additional power schemes have to be developed; and in point of fact very substantial shipments of aluminium are at present being made to the United States by the Canadian smelters. Russia, up to the time that she also became the victim of German aggression, had made great strides in the production of aluminium, and had developed large hydro-electric schemes with this object in view. However, the advance of the German forces into the industrial regions of the Ukraine and the Donetz Basin, and in particular the destruction of the Dnieperpetrovsk dam, has undoubtedly seriously affected Russian productive capacity. This has meant that the burden of the supply of this essential metal to our ally will now fall very largely on the shoulders of the other Democratic powers.

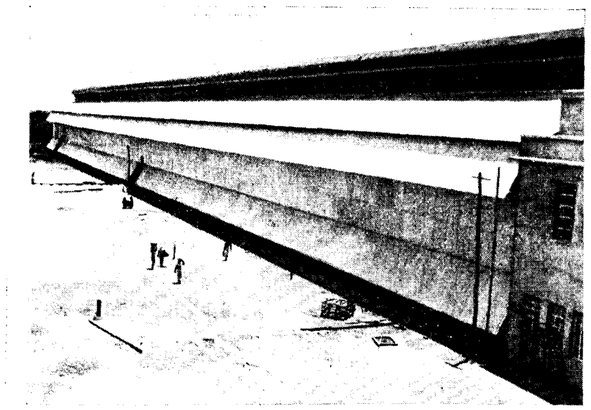
So far as the British Empire is concerned, the sources of supply at present available are therefore the smelters located in Canada and in England itself. Our command of the sea has hitherto insured immunity from enemy attack for the former and ample supplies of raw materials for the latter. Moreover, as we have pointed out, the Empire is fortunate in having other natural resources for the production of aluminium, such as those existing in this country, which have also so far been free from the danger of enemy action. These resources will ultimately turn the scale, as any increase in the output of aircraft is dependent upon the ability of the aluminium industry to produce the metal necessary to build them. It will also be clear that the greatest immediate service which the aluminium industry in India can render to the Empire war effort is in the development of the existing natural resources which are available for the production of aluminium in this country. Towards this end considerble progress has already been made.

The Geological Survey of India has over a number of years carried out a very valuable and comprehensive survey of the nature and extent of the Indian bauxite deposits, and concurrently with this a great deal of detailed prospecting work has been done by commercial interests. A considerable amount of experimental work has also been carried out on the processing of Indian bauxite for the production of aluminium. The project for the construction of works for the production of aluminium in India, plans for which were made before the outbreak of war, has, in spite of wartime delays in obtaining plant and equipment, now been brought to completion. The Aluminium Reduction Works at Alupuram, near Alwaye, Travancore State, began operations early in March, 1943, and for the past nine months have been in commercial production of virgin aluminium. India is now producing her own supplies of this important metal, and a large scale metallurgical industry for the utilisation in this country of India's mineral resources has been successfully inaugurated. Power for the operation of these works is being supplied by Travancore State, one of the pioneers and foremost advocates of hydro-electric power development in India.

Aluminium Rolling Mills for the production of sheet, located at Belur, Calcutta, and operated by the same concern, have also been



Aluminium Reduction Works, Alupuram.
Electrical Building.



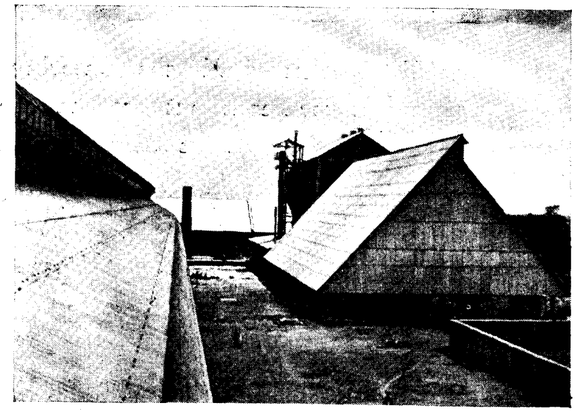
Aluminium Reduction Works, Alupuram.
One of the three furnace buildings.

in operation for the past three years, during which time some thousands of tons of sheet have been delivered for various war purposes, including aluminium sheet for aircraft. These mills are now being expanded, and additional equipment is being installed which will increase their manufacturing activities.

The various aluminium fabricating concerns located in the larger industrial centres have also been fully engaged in war work. Apart from the production of the many fabricated articles of aluminium required by the fighting forces, and by other essential industries such as rubber and chemicals, in many instances productive capacity has also been diverted to work in other metals such as stampings in brass and steel.

The primary object which will be attained by the production of aluminium from indigenous sources will be to relieve this country from its present dependence on outside sources of supply. This will mean that India will be self-sufficient in the production of this primary metal and will be free to respond to the demands which may be anticipated as a result of the increasing speed of rearmament in this country without drawing upon outside production which is already needed by the rapidly expanding aircraft industries of England, Canada and Australia. India, with its present degree of industrialization, may be regarded as the armoury for the forces of the Near and Middle East and indeed of the whole Eastern Group. It possesses large mineral resources, many of which are already being utilized, workshops and factories with their skilled craftsmen, and a vast and still comparatively untapped reserve of manpower. The increasing output of munitions of all kinds, which has now extended to the construction of tanks, armoured vehicles, ships and aircraft, coupled with the expansion of the already important steel industry, will all make demands on the aluminium industry which it will be possible to meet from sources within this country. Should a demand arise for the more specialized branches of aluminium fabrication, the industry will be prepared to meet it. And eventually, as the fabrication of aluminium in India increase, there should be no reason why any surplus should not be exported to other parts of the Empire, such as Australia, and thus relieve the demand on the British and Canadian producers.

In conclusion, the probable post-war position of the aluminium industry in India may be briefly considered. The war, like its predecessor, has given a considerable impetus to industrialisation in this country. And any expansion of industry, coupled with a rise in the standard of living, invariably results in an increased demand for metals of all kinds, of which aluminium is not the least. Apart from this, provided that a reasonable degree of protection and encouragement is given to the industry in its initial stages, there is no reason why, with the natural resources at its disposal, India should not become the main producer of aluminium for the East. As we have pointed out, prior to the war a considerable export business in finished goods was built up with countries in both the Near and the Far East. With the production and fabrication of aluminium in this country in place of metal previously imported from abroad, coupled with the strategic location of India as a shipping centre and the existence of well-equipped factories capable of turning out all classes of finished goods, it would seem probable that the export of aluminium should be capable of considerable expansion, apart from the probability of increased consumption in India itself.



Aluminium Reduction Works, Alupuram.
Electrode Plant Building.

PURE ALUMINIUM THE CROWN

ALUMINIUM
AND ITS ALLOYS

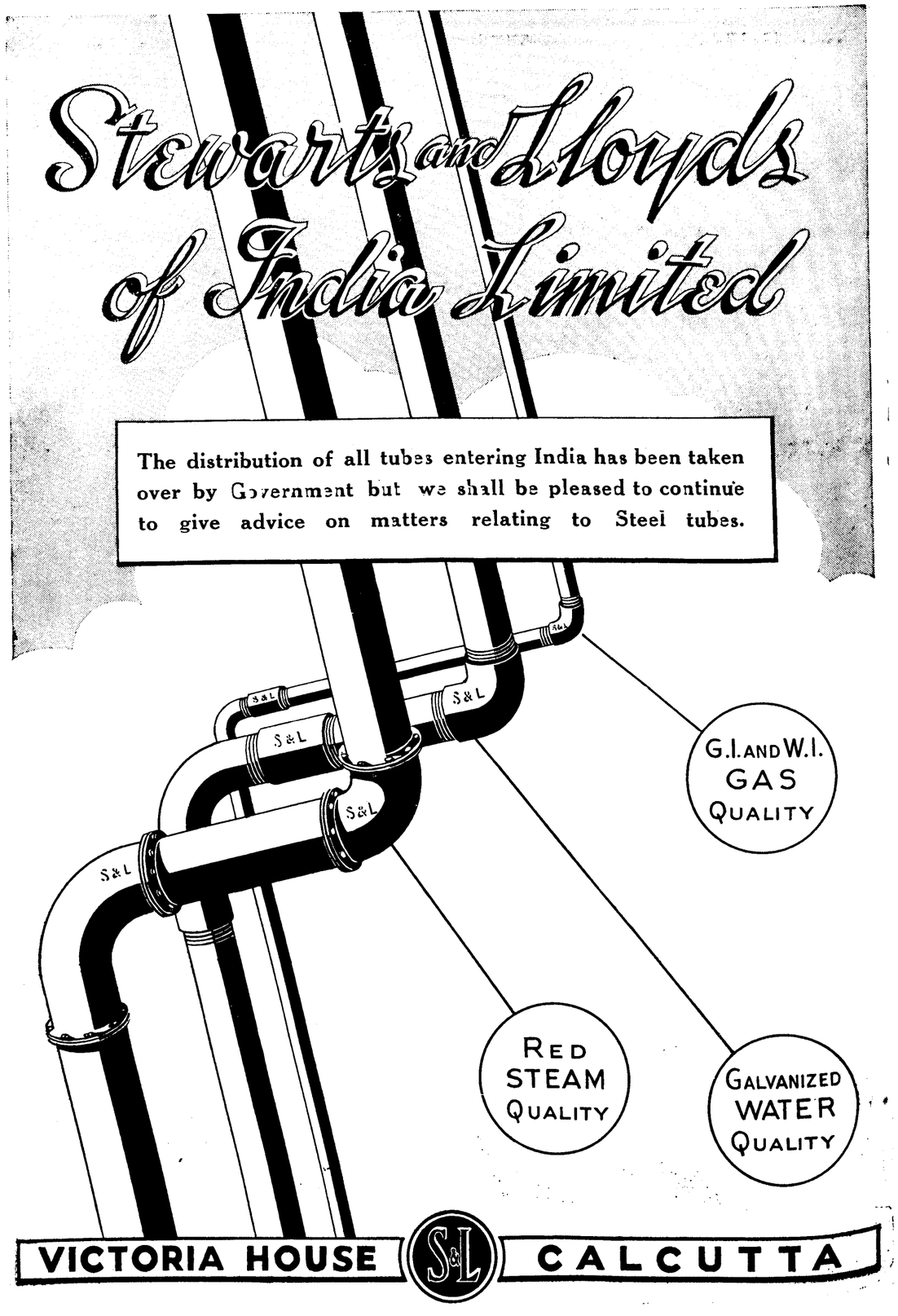
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PROGRESS IN CHEMICAL INDUSTRY

Except for reports as to special assistance for the production of fertilisers in India by way of assistance to importers of plant, there has been no outstanding development to claim general notice. The official production statistics do not indicate what quantity of sulphate of ammonia is being produced. The stoppage of imports is known, but there is no way of measuring either shortages or supplies. In the first year of war, departures in production were widely known and acclaimed. In the years after, progress, substantial though it be in the light of munitions production, can be only conjectured. What has been noted in regard to shortage explains the imposition of controls in regard to sulphuric acid, caustic soda and a wide range of chemicals. Direction of both import and use is established, and special efforts to place chemicals at the disposal of the textile industry in 1943 must be related to the plans to increase the output of cloth, paper and leather for the war and for civilian use. But enterprises set up before the war have made headway. In regard to alkalis though new plants are not in commission, there has been improvement. Distillation of coal tar has begun and the estimated output of 80,000 tons has begun to yield tolueric phenol and other products. The coal by-products industry is receiving the attention of the Ordnance Department and the Department of Scientific and Industrial research. Pilot plant for producing dislillates is ready.

The Geological Survey's utilisation branch has examined many minerals in relation to chemicals. The salt pans of Rajputana are recognised more as a source of chemicals. Company reports appearing in 1943 pointed to no striking advance in output. Construction is ot complete in the case of more than one company, and that is why the rebate on soda-ash drawn from abroad for the glass industry, has been maintained. That is, perhaps, the only point at which the tariff has touched the chemical industry. Sir S. S. Bhatnagar reviewing the progress made dwelt with satisfaction on the advance in sulphuric acid production in India to 80,000 tons per annum. When the Tariff Board investigated the claims of Indian heavy chemical manufacturer in 1927 it was noted that the Ordnance Department was anxious to see local production make a good start, and the Supply Development Committee's work in this war explains most of the increase in production of both heavy and fine chemicals. Initial examination of scope for dyestuffs has concluded and important results are hoped for as more than one conclusion has been made acquainted with the possibilities.

Continued difficulties as regards imports have been attributed to licensing and questions raised as to prices invariably dwell on the known handicap of manufacturers. Indian chemical manufacturers have complained that imports are costly and difficult to secure. Suggestions have been addressed as to the need for co-operative research at this stage of development and last years conference of chemical manufacturers was concerned mostly with the impact of control on both supplies and prices.

The end of shortage in regard to sulphuric acid alone was predicted. Baluchistan's sulphur ceased to excite much attention though what was accomplished received much notice. Indian industrialists readiness to sponsor projects for extended use of coal for producing chemicals was duly indicated after mining experts had argued that coal was more than a fuel—it was a raw material for industrial development. The backwardness of Indian producers was indicated mostly by the assertion that makers of drugs and pharmaceuticals had to depend on imports to the extent of 95 per cent for their own raw materials. Far more important is the need for developing fertiliser production. The food supply more than medicines or price control has been the principal issue of the last year, and manufacturers claimed that ammonium sulphate production should be stimulated by every means. The I.C.A.R. is said to have supported the view that received support in the foodgrains policy committee's report as to the need for fertilisers.

Except for the application of control to basic chemicals and the more recent plan to regulate prices of drugs of both Indian and foreign origin, State encouragement or interference has been less obvious than in the past. Complaints regarding licenses and permits have been common and, in one case at least, that of quinine, the lack of foreseight has been attended with unusual results. Output of Indian chemical manufacturers suffered through the competition of Government medical stores whose manufacturing activity appear to grow rather than decrease. The Indian Chemical Manufacturers Association made also representations in regard to opium policy, excise administration etc. and defined the views of producers in respect of price control under the provisions of the anti-hoarding and anti-profiteering Ordinance.

The work of the Department of Scientific and Industrial Research in regard to substitutes for rubber marks a departure in chemical investigations. But co-operative research by industry outside has been advocated by Sir S. S. Bhatnagar and the point has been also emphasised by Dr. H. S. Ghosh both in his defence of industrial research and a plea for a separate fund and setting up a research institution. Except for the grant to the Bombay University made by Tatas, there has been no important private endowment for applied chemical research. Offer of assistance by Tata Chemicals, Limited to other firms in regard to designs for plants and factory lay-out, however, has been made to the Board of Scientific and Industrial Research in the first instance. Plans for fuel research station are advanced in spite of the coal shortage of today and the scheme for a National Metallurgical Laboratory has been explained. The functional importance of research was explained only recently to the Indian Science Congress by Tisco's General Manager.

As for pictures of developments in progress, attention may be here drawn to the statements to shareholders. The enhanced importance of the chemical industry is duly reflected in share prices over a year, but the rate of earnings on capital invested cannot be indicated with confidence. More than one concern has passed the stage of construction or recovery as the case may be and stability of earnings is not compromised by taxation.

As to the future the appointment of a special committee to relate local scientific research to the development of industry must receive special mention. Professor Hill's visit to India, at the Government's request, resulted in eager discussion of projects and programmes. Beginnings in regard to dyestuffs have been noted as also in the fuller use of coal by-products. But coal shortage does not threaten to be a problem for chemical manufacturers, and the first hint of oil distillation projects has been furnished by an advertisement for an expert. The increasing intimacy between the chemical and mining industries is found in the attention paid to Rajputana's salt resources last year. The Geological Survey's new Utilisation Branch has examined prospects in Rajputana, apart from fresh investigations of non-ferrous deposits known to exist in India while Baluchistan's sulphur is no longer regarded as a very promising factor, the opportunity for larger imports has been created by the conquest of Sicily in July-August 1943.

The real importance of war developments for industrial growth was indicated in the relaxation of import control last year though, the import of consumer goods for checking the rise in prices of consumer goods produced in India, was not generally welcomed. The more important projects in connection with rayon manufacture have been lately examined and three suitable sites have been indicated along with estimates as to capital required and potential profits by the All-India Manufacturers' Organisation. The most suitable point of departure appears to be in regard to fertilisers in view of the Gregory Committee's specific recommendations as to India's ultimate manurial requirements. Lower costs and lower prices are demanded in the interests of competitive efficiency in the case of sugar as well as other industries. As may be inferred, the inception of a company in Bombay to set about fertiliser manufacture on a large scale was reported towards the end of 1943. Bihar's advantage have also been outlined in relation to super-phosphates lately. The progress of the scheme is not known but reference to the productive efficiency of existing companies indicates that market interest in chemical industry has grown very rapidly. The Board of Scientific and Industrial Research has been credited with plans for a workshop and special laboratories. A preliminary investigation under its auspices into dyestuffs manufacture only yielded the general conclusions as to the advantages without any mention of the conditions necessary for growth. The importance of developing industries in face of Germany's economic disarmament after the war is widely understood but the order of priority has not been settled since the views as to reconstruction have to be shaped by the special investigations undertaken. All that can be said in relation to the past has been set forth in a bulletin of the Industrial Research Bureau on the heavy chemical industry in India.

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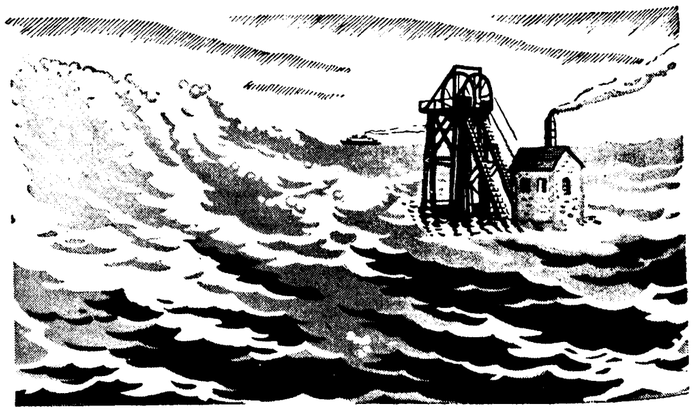
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THE INDIAN COAL INDUSTRY

In importance, the coal industry in India can hardly compare with cotton, or jute, or with the pure agricultural staples. In both raw cotton and cotton goods our production is a substantial portion of the world output, in jute we have a practical monopoly; and the agricultural staples have a significance in the national economy apart from, and independent of, their relation to the output, and markets of the rest of the world. But in coal, our annual production is an average of 21 million tons, out of a world production of about 1,250 million tons. The industry in India has comparatively less capital invested in it; and the chief collieries are confined to the provinces of Bengal and Bihar and Orissa. Yet, it is one of the most important industries, one in which the public can never afford to take a mere lukewarm interest. First, the welfare of the local industry, though it fills a smaller place in the whole of India, is of vital importance to Bengal, Bihar and Orissa. Secondly, coal is by every criterion a key industry. A good supply of coal is one of the basic conditions of industrial progress. Our railway system would be unworkable without a well-worked coal industry.

Joint-stock coal companies have invested more than Rs. 12 crores in the industry; and there is besides a small knot of coal-fields owned by the railways for which details of capital are not available. Though Raneegunge and Jharia tower over all the rest of the coalfields in India the progress made by the latter is by no means insignificant.

The railways, which form the chief consumer of Indian coal have acquired and been working their own coal mines. Objection has been taken to this development on the ground that as the railways are owned by the State, the establishment of railway collieries would mean an unjustifiable and unwarranted encroachment of the State into the sphere of private industry. It is, of course, contended in reply that as the railways are commercial enterprises, they must have freedom to develop their business interests and devise combination of a vertical nature, if they deem it profitable to do so. The railway collieries have been developed in the face of natural opposition.

The industry's economic position underwent a definite change for the better during 1936-37. Though the export trade, except to Ceylon, continued to shrink, internal consumption was on the upgrade and the industrial developments in progress led to enlarged use of coal. The price of coal improved in sympathy and after the beginning of 1938 there was a sharp reduction in stocks

The amendments to the Indian Mines Act and the passage of the Sandstowing bill by the Central Legislature are obviously major events for the coal industry. The average trend in coal prices from the beginning of 1939 showed that the stability of the industry was not above question and only the urgency of reforms in extraction methods compelled the Government to go ahead with its programme. The Statutory Board with an official chairman is to work at Calcutta, and arrangements have been made for the collection of the cess from the industry. Opposition to the proposals has died down, and the improvement in the labour situation has induced the coal mining industry to accept the case for safer, albeit for expensive, mining.

Until the middle of 1939, the export trade was in an improved state. and the Sino-Japanese war brought about an increase in the volume of exports to the Far East. Total production in India recorded a rise from 23.47 million tons to 25.06 million tons during 1939-40. To judge from the output figures the coal industry must have had a good year, but few of the coal companies can report an increase in profits. The active demand for first class coal was advantageous to only a few companies but the increased consumption in industries did not alter the key position the railways still retain.

The coal industry, like the sugar industry, has not derived any advantage from the presence of war conditions. In fact the important coal companies have been finding it hard to maintain their earnings at the record level of 1937-39, for the post-war period. Prices have remained more or less steady, there being only a mild flutter in the last season.

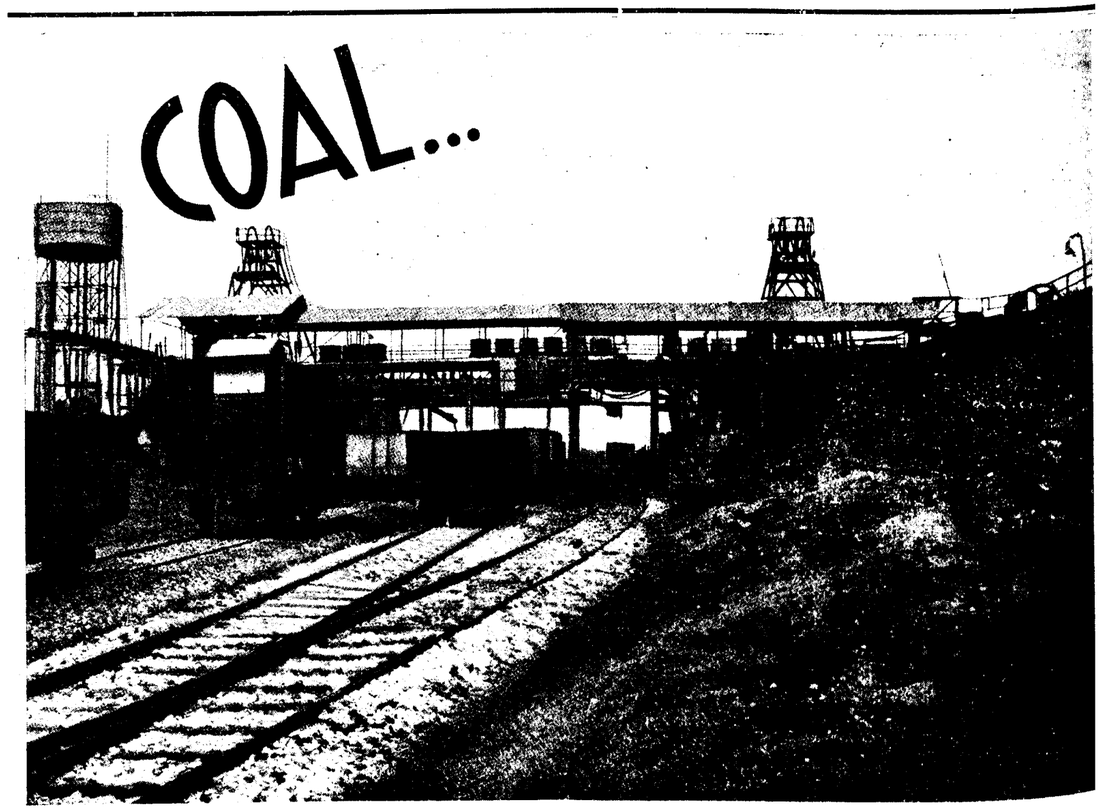
No attention was paid to the problems of the Indian Coal Industry in the first three years of the war. In fact, it was said that no problems existed for the coal industry from the point of view of war effort. There was a cry of chronic shortage of wagons from the industry but this shortage was never at any time, considered so serious as to effect production of the war industries. That is the reason why the Indian coal industry did not benefit in any way from the improved conditions in the industry in the early stages of the war period. Recently, however, it has come into the limelight. The drop in coal production to such a low level as to leave idle even a small number of wagons supplied to the industry for the conveyance of coal from the pits due to the acute shortage of labour, and the demand from the United Nations for export to the extent of 1¾ million tons from this country to the Middle East areas, have been mainly responsible for the feverish activity that has been noticeable in the latter half of 1943. The industrial centres in Western India experienced a shortage of fuel while nearer the coalfields, the jute industry had to cut down production on account of lack of supplies of this essential fuel. In the earlier stages, the authorities were not inclined to be serious in their efforts. Only after repeated protests and the demand from the British Government immediate arrangements were made to rectify the position in the industry. A rationing scheme was introduced according to which industries were allotted a special quota, the essential requirements of those engaged in war production being taken into account. Women labour was permitted underground at first in the coalfields of Central Provinces and Berar and later on in Bengal and Assam. It is said that this retrograde step in regard to labour welfare was inevitable as, owing to the shortage of labour, there was need for giving inducement to men for permitting their womenfolk to work underground along with them. Food supplies also were arranged on cheap terms. The loss in production in the latter half of the year alone is estimated to be 1.5 million tons. If the goal of 25¾ million tons fixed by the Government is to be achieved, efforts should be at first made to make up the lost production and then plan for an increase. The fear at present is that, as in the case of rice, the requirements of industries might be ignored and the export of coal encouraged. This should not be allowed as, in the present circumstances with the easier shipping position a slowing down in the rate of production of Indian industries might be viewed with complacency. It will not be a waste from the point of view of Allied war effort but it will certainly be a waste from this country's point of view.

But for the increase in the costs of production and the lower level of raisings coal companies might possibly have done better in 1943. It is, therefore, satisfactory to note that even with the difficult conditions in the industry, the important coal companies have been able to more than maintain their earnings. 43 companies reporting in 1943 were able to earn Rs. 98.86 lakhs against Rs. 98.28 lakhs for the same number of companies reporting in 1942 and Rs. 80.65 lakhs in 1941. There was an increase in the provision for taxation but it was possible to distribute higher dividends than in 1942 though the total amount paid by way of dividends was still lower as compared with 1941.

The difficulties in regard to shipping and production have resulted in a lower level of exports. On the last occasion, the attention of our readers was drawn to the difficulties in regard to exports and the loss of remunerative sources of income for coal companies. It will be noticed from the table given below that in the year 1942-43 coal exports are at the lowest levels for some time:

	(In tons 000)		
	1940-41	1941-42	1942-43
April ..	220.19	62.41	16.09
May ..	191.06	91.37	3.08
June ..	200.82	131.71	18.82
July ..	123.83	244.87	18.03
August ..	165.98	141.05	8.69
September ..	97.47	225.66	35.61
October ..	50.49	172.99	34.15
November ..	335.87	172.93	49.39
December ..	164.15	100.81	23.12
January ..	165.76	123.34	13.36
February ..	143.59	65.35	44.34
March ..	81.44	17.48	56.39
Total ..	1,940.65	1,549.97	320.96

The total of exports for 1939-40 was 2 million tons, 1940-41 1.94 million tons, and 1941-42 1.55 million tons. It was only .32 million tons in 1942-43. The demand by the Allied Command for the restoration of the level of coal exports to 1¾ million tons in the near future might therefore not appear very extravagant. The coal industry had a record production in 1940 and as much as 28 million tons of coal was raised but it is feared that with the loss in production in the latter half of 1943 by over 1½ million tons, it will not be possible even for the Government of India to achieve the goal of 25¾ million tons for the whole year. With the increase in internal consumption, the demand for exports to the extent of 1¾ million tons cannot therefore be fully met. In any case, it should be made clear, as indicated in the earlier portion of this article, that internal needs should be met first and then only exports could be increased. It is saisfactory to note in this connection that production at the iron and steel works in this country will continue uninterrupted and that the maintenance of a high rate of output is the first consideration of the Government. Imports have been on a very small scale. In 1937-33 total imports were 83,900 tons. They were only 5,360 tons in 1942.43.



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COTTAGE INDUSTRIES IN HYDERABAD

Hand-Loom Weaving.

The most important cottage industry in the State is hand-loom weaving next in importance and usefulness only to agriculture as a national occupation. This industry is pursued by 3% of the total population and consumes imported yarns of the value of Rs. 64,00,000 and clothes nearly half the total population of the State. Besides the imported raw materials it uses local mill-spun yarn of the value of nearly Rs. 20,00,000 and hand-spun yarn of the value of nearly Rs. 20,00,000. The classes of people chiefly engaged in hand-loom weaving are the shalis among Hindus, and the Momins among the Mohammadans. The weavers as a class are illiterate, poor and deeply involved in debt, conservative in their methods and outlook. Of the 1,00,000 looms working in the State nearly 55,000 are of the throw shuttle type and 45,000 are equipped with fly shuttle sleys as a result of the endeavours of the Department of Commerce and Industries.

Nearly 95,000 looms are engaged in weaving cotton and mixed fabrics the most deserving of mention among which is the Nandersela which approaches in fineness of texture and excellence of finish the far-famed muslins of Dacca. But unfortunately the sales on account of their high cost are gradually becoming extinct.

There are about 4,000 looms engaged in the silk weaving industry which is more or less a monopoly of the Khatris. The Himroo, Mushroo and Kimkhab of Aurangabad, now woven with artificial silk and comparatively cheap in price, are eminently suited for use for curtains, upholstery and the like. Saris and especially the gold thread sari borders manufactured at Paithan, near Aurangabad, are very attractive. This industry is in the hands of only 6 families.

Nearly 14,000 looms are engaged in the kambal weaving industry and kambals valued at Rs. 3,10,000 are exported.

Dyeing Industry.

Allied to weaving and complementary to it we have the Dyeing Industry which is widely practised in the different weaving centres of the Dominions. The dyeing industry alone consumes imported dyes and chemicals of the value of Rs. 9,00,000 annually.

Carpet Industry.

At Warangal only 87 looms were engaged in the carpet industry in 1933 Fasli. It was in fact decaying. Then the Government established an Experimental Carpet Factory there and under its stimulus the number of looms has increased to 350 and rugs and carpets of the total value of Rs. 1,20,000 are exported annually from the Dominions whereas formerly the exports amounted to Rs. 30,000 only. Carpets manufactured at the Factory are unsurpassed in excellence of quality and design by anything of the kind produced elsewhere in India.

Bidri-Ware Industry.

The industry is named after the place of its manufacturer, *i.e.*, Bidar. It seems to be of antique origin probably being in existence during the days of Bahmani Kings. The basic material employed for the manufacture of Bidri-ware consists of an alloy of zinc and copper mixed in certain proportions. The peculiarity of the alloy is to assume a jet black colour when treated with materials of alkaline nature. The first process is to cast the articles that are to be made. Then the rough castings are filled or turned in black lathe if round and then finished off with emery paper, charcoal and sweet oil. The surface is then temporarily blackened by being moistened with a solution of copper sulphate. Next the design is drawn and engraved. Pure silver in sheets or wires is hammered and inlaid in the groves, filed and polished off. Then the articles are gently heated and a certain earth found in Bidar containing salt-petre is smeared to get the black ground as a contrast to the design of silver. Articles similar in appearance to our Bidri work would show that it is merely an imitation of the original work done at Bidar.

The designs employed are of variegated nature and unique in conception. The more attractive of these designs are adopted from the ornamentations of Bidar Fort and the surrounding tombs. Animal designs are rare on Bidri ware, but the fish ornament in water bowls seems to have been introduced from very early times. The original uses of Bidri-ware were in connection with the smoking of huqqa, the offering of pan and superi, water drinking, ablution and few miscellaneous purposes. Next comes the Ugaldan and small boxes, either rectangular or oval, for holding cardomon. Of late newer designs have been introduced and articles of modern use produced such as cigar and cigarette-boxes, ash trays, match-boxes, vases, bangles, buttons, links, pins and numerous other articles.

Nirmal Toy Industry.

The toy making industry of Nirmal is very famous. The screens, chess sets, ganjiphas, fruit and vegetable sets, birds, animals, etc., are the most famous among the products.

Karimnagar Filigree Works.

In Karimnagar there are about half a dozen silver smiths who are engaged in the art of making Filigree ware of silver. Every year they produce Filigree articles worth Rs. 3,000 in addition to the other kinds of silver ware.

Steps Taken to Revive the Cottage Industries.

In 1933 Fasli a thorough and detailed survey of the hand-loom weaving and dyeing industry of the Dominions was undertaken by a Special Officer of this Department and the survey report has been published.

After studying the actual condition of the various artisans in the District by constant and extensive touring the following schemes were submitted to and sanctioned by the Government.

Cottage Industries Institute.

A Central Technical Institute where weavers, dyers and other artisans could be trained in up-to-date methods of their crafts was found indispensable and accordingly a commodious building costing Rs. 1,25,000 was constructed Departmentally in the year 1349 Fasli.

The Institute has the following sections:—

1. Weaving.
2. Dyeing and Printing.
3. Knitting.
4. Durrie and Drugget Weaving.
5. Woollen Spinning and Blanket Weaving.
6. Embroidery and Needle Work .
7. Rattan Work.
8. Toy making and Lacquer Work.

Besides these, a store of weaver's requisites and workshop for the manufacture of appliances, etc. has been attached to the Institute. For the District Students who come for training free lodging is provided and the students are paid scholarships during their courses. Again, lately, a silk weaving section was added to the Institute financed by the Industrial Trust Fund.

The Cottage Industries Institute has trained in up-to-date methods 166 boys in weaving and 50 boys in dyeing besides many others in other cottage industries such as rattan work, knitting, embroidery and needle work, toy making and lacquer work, Namda making, etc. In all about 600 boys have been trained during the past 5 years.

Each of the above sections is in charge of qualified and trained instructor. Besides stipendary students professional artisans are also taken on a piece work basis to execute outside orders. A show-room is attached to the Institute where the products are exhibited for sale to the public. The annual expenditure of this Institute comes to Rs. 94,856. It is expected to show receipts to the extent of Rs. 43,000 per annum. The Institute is equipped with up-to-date machinery worth nearly a lakh of rupees.

District Demonstration Parties.

One effective method of improving the hand-loom industry has been recognised to be the introduction of fly shuttle sleys, dobbies and other improved appliances and for this purpose a scheme for the District Weaving and Dyeing Demonstration Parties was sanctioned costing Rs. 35,306 per annum. There are 7 District Demonstration Parties working in 7 centres each under a qualified L. T. M. assisted by 2 to 4 Artisan Assistants and a Dyer Maistry who demonstrate, at the artisans' very doors, improved methods of weaving and dyeing. They teach them new and artistic designs and keep them in touch with the public demand regarding clothes, etc. A sum of Rs. 20,000 has been set apart by the Government for supplying the weavers' requisites on the hire purchase system and easy instalments. When it is found that a centre has benefited by the Demonstration Party it is shifted to another suitable place requiring their presence. The work of Demonstration is supervised by the Superintendent, District Demonstration Parties and the Dyeing Expert who tour the districts and give advice and guidance whenever necessary.

Cottage Industries Sales Depot.

The universal grievance of artisans is the lack of proper facilities for marketing their products and this has been rectified as far as possible by the establishment of a Cottage Industries Sales Depot at Hyderabad, where all products of Cottage Industries are stocked and exhibited for sale. The Sales Depot is located in a commodious building costing about half a lakh and the nett budgetted ex-

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penditure on this scheme comes to Rs. 10,807 per annum. For the purchase of articles a sum of Rs. 30,000 has been sanctioned by the Government interest free as a plus and minus grant.

The Depot has been instrumental in reviving many of the dyeing industries of the State more particularly the Bidri-ware industry, the Nirmal Toy industry, and the Warangal carpet industry. The Depot brings the consumer and the small scale producer into closer contact. The small scale artisan is able to advertise his products through this medium and obtain better prices for his goods as this does away with the middleman's profit. The Sales Depot undertakes all advertisements on behalf of the smaller manufactures and brings in larger business for them. The Sales Depot participated in the Indian Trade Exhibition Train which gave tremendous publicity to our products. The train went all round India through important commercial centres, etc., and our cottage industries products were widely advertised in all those places. Besides, the Sales Depot sends different Cottage Industries products to the various Uruses, Exhibitions and Jatras within and outside the Dominions for exhibition and sale.

Government Carpet Factory, Warangal.

Warangal was once famous for its carpet industry, but in later years the industry deteriorated and was almost extinct when the department took up the matter and established an Experimental Carpet Factory there with the co-operation of a well-known firm, the East India Carpet Co., with the ultimate object of reviving the dyeing industry and the immediate object of manufacturing almost all the high class superior carpets required for the Delhi Palace of His Highness the Nizam. The scheme was financed by the Industrial Trust Fund at a cost of Rs. 52,328 with a recurring expenditure of Rs. 3,728 per annum. The Factory started work in the middle of 1339 Fasli and it is gratifying to note that within its short life it has wonderfully revived the carpet industry of the place. Even experts in the line, like Mr. Robertson Taylor of the East India Carpet Company, after his recent visit to Warangal said that Warangal carpets equal if not excel those made elsewhere in India.

To encourage the cottage carpet industry, an order for the supply of 500 rugs per month of cheaper quality was secured by the Factory from the Oriental Carpet Manufacturers, London.

A revised scheme to continue the factory has been submitted to the Industrial Trust Fund for sanction. The Factory has been shifted to a commodious building and an additional shed is being put up for housing bigger looms to cope with orders for wider carpets.

Weaving Institute, Paithan.

Paithan was noted for its sari, gold lace and pagri industries, but owing to the import of cheaper machine-made goods these industries began to decline and weavers emigrated to foreign parts such as Yewla, Ahmadnagar, Poona, Bombay, etc. This institute was sanctioned by the Industrial Trust Fund at a cost of Rs. 20,757 for 1339 Fasli and Rs. 15,000 for 1340 Fasli. The total non-recurring expenditure at Rs. 7,758 for the Institute and a sum of Rs. 10,000 was provided as advance for raw materials, etc. The real needs of Paithan necessitated some changes in the working of the scheme and instead of Jacquards the weavers were taught fly-shuttle weaving and given yarn to reproduce Nagar Pattern saries which were flooding the local markets. About 50 weavers were helped by advancing raw materials on credit on an easy-instalment repayment system. The yarn was supplied duty-free also. Recently the pagri weavers also have been helped by the Institute Stores. The staff has been retrenched considerably and with the minimum expenses maximum results are obtained.

As it was decided that the original object of this Institute, *viz.*, the revival of gold embroidered sari industry should not be lost sight of, two looms have been fixed at the Institute and an experienced weaver engaged to teach the stipendiary boys the art of paithan gold thread embroidered saris, pagris and cholkans. The attempt is expected to hold the gold thread industry also. However, the work of these saris and cholkans is being continued with a view to find a sale in the Cottage Industries Sales Depot.

Bidri-Ware.

There are two factories at Bidar where about 30 artisans are engaged and articles worth Rs. 10,000 are manufactured every year, out of which 5 or 6 thousand rupees worth of articles are purchased by the Sales Depot. Of late attempts are being made to find a market for the Bidri-ware in foreign countries also. For this purpose photographs showing the craftsman at different operations and the articles at different stages of manufacture, etc., are being sent to the Imperial Institute, London, for exhibition.

Nirmal Toy Industry.

At present there are only 3 master craftsmen engaged in this noted industry. They receive many orders, but the number of manufacturers being limited, it is not possible for them to supply the articles in time. To overcome this difficulty and to keep the industry alive a scheme was sanctioned by the Government and 8 boys are undergoing training in this industry under the 3 master-craftsmen. These boys are paid a stipend of Rs. 2 to Rs. 4 each per month. When these boys complete their training and are able to produce the output will increase.

Apart from the above steps taken by the Government loans are also given to small scale industrialists to enable them to expand their business, *e.g.*, Auguyya Sidram Bandari of Alir who had a limited number of looms previously was granted a loan of Rs. 3,000 and it is gratifying to note that to-day there are 48 fly-shuttle looms working in his factory while 75 workmen are engaged in the manufacture of saris. He produces saris worth Rs. 3,000 per month and they find a ready sale in Hyderabad and the Mahratwada Districts. Likewise Vithoba Venkiah Gajjar of Alir was given a loan of Rs. 1,300. There are 26 fly shuttle looms located in his factory. He produces saris worth Rs. 1,700 per month. About 50 workmen are engaged in his factory. Malla Narsayya of Alir was granted a loan of Rs. 500, Abdul Aziz of Udgir was granted a loan of Rs. 200, Abdul Aziz of Bhir was granted a loan of Rs. 2,000 and Abdul Hamid Khan, himroo weaver of Aurangabad was granted a loan of Rs. 7,000.

The question of the hand-loom weavers can be improved by:—

(1) Teaching them improved methods of production.
(2) Providing them with loans on low rates of interest and repayable in easy instalments.
(3) Supplying them with raw materials on credit.
(4) Keeping them in touch with the prevailing trends in the tastes and fashions of the consumers.
(5) Helping them in finding sales for their products.

In Hyderabad the Department of Commerce and Industries is trying to do all these through the Institutes, the District Demonstration Parties and the Sales Depot and they can, without being guilty of immodesty, claim to have achieved a larger measure of success than similar departments in British Indian provinces.

The only thing that the Department has not attempted hitherto is the formation of co-operative societies either for production or sale of goods because the Department feels that this lies within the province of the Co-operative Department. Further, the experience of such co-operative societies in Madras, the Central Province and other Indian provinces has not been encouraging. As they are still in an infant stage, conducted on experimental lines, it would be inexpedient and inadvisable for the Government to risk any large sum in the Artisan Co-operative Societies organised either for production or for sale of goods.

Scholarships.

Every year a certain number of scholarships are granted from the Industrial Trust Fund to deserving students to undergo training in some technical subjects such as weaving, dyeing, carpentry, tailoring, etc., in foreign institutes. Our scholarship holders are undergonig training in various schools such as the Victoria Jubilee Technical Institute, Bombay; the School of Arts and Crafts, Madras; the Technological Institute, Cawnpore; the Khala Bhavan Institute, Baroda; the Phadav Tailoring College, Poona, etc. When they return successfully after their course they are either entertained in our Department or helped to secure a footing in suitable industries.

Rural Development Centres.

These centres receive our best attention and help. We send out Demonstrators, the Artisan Assistant, etc., to train boys of those centres.

Women's Home Industries.

This had been helped by our Department by a grant from the Industrial Trust Fund and their products are allowed to be kept in the Sales Depot for sale.

The Industrial Trust Fund has been very useful in helping various dyeing industries of the Dominions. Small-scale manufacturers have been advanced loans to put their industries in proper working order or for purchase of new and up-to-date machinery. Liberal donations also have been granted to deserving associations such as Anjuman-e-Taraqqi Dastakari of Aurangabad.

For the revival and sustenance of various cottage industries of Aurangabad Suba such as himroo weaving, gold lace work, handmade paper industry, etc., the Trustees of Industrial Trust Fund have of late sanctioned a scheme at a cost of Rs. 34,500 for non-recurring expenses and Rs. 11,664 as a recurring grant. A depot is proposed to be opened at Aurangabad from where the artisans, etc., will be supplied with raw materials and their finished articles taken for sale. The Department has deputed one officer for giving necessary technical assistance. For the present the work of the following cottage industries has been taken in hand:—

(1) Hand spinning, tat patties weaving, nawar weaving, rope making, dyeing and printing.
(2) Badla, Gota patta, Gold thread.



PRICE-TRENDS DURING THE WAR PERIOD

A close study of the behaviour of price trends in India during the past four years of war reveals the inherent defects of India's economy and administration. From an initial up-swing of prices during the first few months of the war to a general collapse of the price structure in different parts of the country leading to unprecedented famine and misery, the course of prices shows the absence of a suitable plan for controlling the price level, as distinct from control of prices of a few commodities. A comparison of Indian price level with those of important countries reveals that by January 1943, the Indian prices had gone to perilous heights. From 100 in 1939 the index of wholesale prices had gone up to 257 in January 1943 according to the June issue of the Monthly Bullletin of Statistics of the League of Nations. Taking the Empire countries alone for comparison, we find that the movement of the index has been as follows:— (*Vide-Appendix*).

Canada 100 to 136 (May 1943); Union of South Africa 100 to 143 (March 1943); Australia from 100 to 135 (February 1943); New Zealand 100 to 140 (April 1943) and the U. K. 100 to 167 (May 1943).

With all their imperfections, the figures are clear in pointing out that India has been the worst hit within the British Empire and very few countries outside have recorded greater heights in the wholesale price level.

The following table indicates the movement of wholesale prices by groups of articles:—

INDEX NUMBERS OF WHOLESALE PRICES AT CALCUTTA BY GROUPS OF ARTICLES.

(PRICES IN JULY 1914=100).

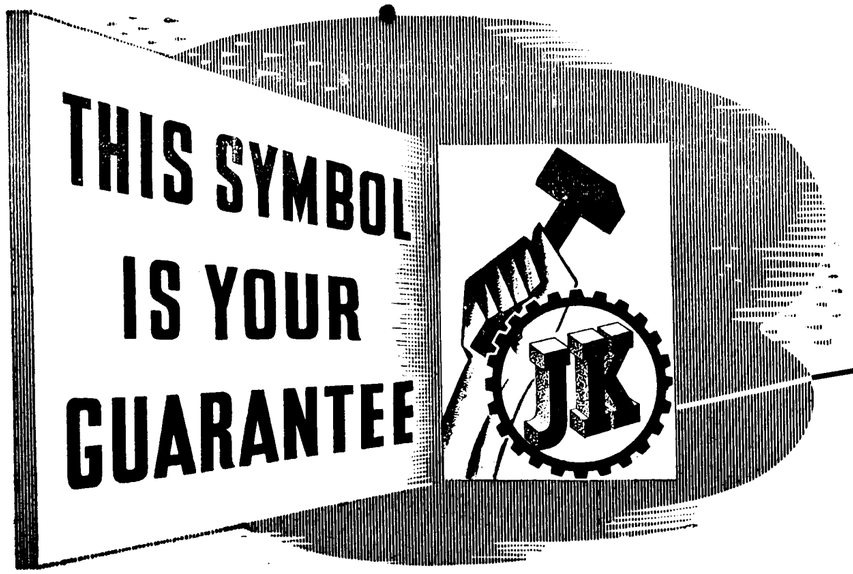
Period.	Cereals.	Pulses.	Sugar.	Tea	Other Food Articles.	Oil-seeds.	Oil, mustard.	Jute, raw.	Jute manufactures.	Raw Cotton.	Cotton manufactures.	Other Textiles (Wool and Silk).	Hides and Skins	Metals.	Other raw and manufactured articles.	Building materials (Teakwood).	All commodities.
No. of items included .	8	6	5	3	9	3	2	3	4	2	7	2	3	6	8	1	72
1914, End of July ..	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1939 „ „ ..	86	99	164	142	125	105	31	80	102	75	106	110	67	147	95	123	108
1940 „ „ ..	99	101	157	149	146	106	78	79	107	87	122	146	72	175	115	127	120
1941 „ „ ..	112	105	145	202	178	103	78	77	137	77	179	166	74	209	126	132	139
1942 „ „ ..	157	162	208	241	298	143	85	77	137	96	..	146	86	273	147	..	185
1943 January ..	260	238	258	299	434	196	..	125	175	143	..	194	95	322	159	..	250
February ..	266	280	260	246	444	178	..	110	167	152	..	204	98	331	162	..	253
March ..	334	309	298	199	457	189	143	122	168	166	..	246	100	331	170	..	272
April ..	375	307	280	189	505	252	189	144	184	185	..	257	98	339	183	..	293
May ..	473	374	311	192	545	281	197	147	195	199	..	262	95	354	183	..	325

It can be seen that during the first two years of the war the non-food group rose up to greater heights than the food group. But since 1941 the increase of prices in the food group has outstripped the former. While the index for all commodities has increased from 108 in July 1939 to 325 in May 1943 cereals recorded an increase from 86 to 473, pulses from 99 to 374, sugar from 164 to 311, tea from 142 to 192 and other food articles from 125 to 545.

The course of wholesale prices since August 1939 can best be studied under five periods, viz., (1) From September 1939 to December 1939 when the prices rose sharply under the first flush of war news and speculative activity. This instinctive upward swing is a common feature of prices in all countries. The impending uncertainty regarding transport, communications, imports and exports naturally pushed up prices. During the first four months of war, price trends did not raise any anxiety in the public mind. (2) During the period between January 1940 and May 1941 there was in evidence a tendency to decline at first and steady upward move subsequently. This period was on the whole marked by an easy price situation and if the government had planned to strengthen the Indian economic structure during this period, they could have made a good beginning. (3) From May 1941 to March 1942 the prices moved up to higher levels; but the course even at this stage was steady. (4) From April 1942 to March 1943 is the period which witnessed the serious spurt in prices. During this period the Calcutta index rose from 157 to 272, the Bombay index from 196 to 256 and the Economic Adviser's index rose up from 146 to 214. Great concern was expressed at the price movements and the country required urgent measures to deal with the situation. (5) The months after March 1943 have witnessed further deterioration ending in nationwide scarcity and thousands of people died for want of food in Bengal, Rajputana, Orissa, Malabar and other areas. The position has not yet improved appreciably.

The Government of India has been slow to realise the necessity of devising an effective policy for controlling the price level. In the last war, the responsibility for price control was thrust on the shoulders of the Governments unwilling to deviate from the laissez-faire tradition. But in this war every Government had understood the vital necessity of regimenting national life for the successful prosecution of the total war. A degree of totalitarianism was imposed even on the most democratic of nations. This, together with the practical difficulty of restricting the scope of price control and the financial and economic exigencies have urged nations to pitch their aims high and spare no effort in attaining them. The cost of living index in countries like Great Britain shows that the Governments have met with singular success in this regard. Their success must be accounted for by the fact that the problem has been attacked from many sides instead of being regarded only as a matter of assertion of governmental power.

The same can hardly be said of the Government of India and of price control in this country. The only point of similarity lies in the alacrity with which ordinances were published immediately after the war by way of attempts to control prices. The Government were also careful to construct a machinery and a technique which would ensure that, where Govt. were involved as buyers, private profiteering would not go unchecked. In all matters of supply to the Government the Supply Department soon evolved and put into force a system of estimating costs and fixing prices by allowing for a reasonable margin of profit. But this is not, strictly speaking, part of the problem of price control which is meant to regulate prices in transactions between any two private individuals. Besides, price restriction in the interest of the Government as buyer or seller tends to expand slowly over a wider orbit when the Government is obliged to restrict the price of certain raw materials in the interests of the manufacturer whose prices have been cut to the bone. But the problem of price control cannot be solved only with reference to the suppression of the unscrupulous profiteer. As the war progresses, it is expected that economic conditions and financial exigencies alike contribute to the emergence of the problem of price control in an acute form. War causes interference with transport and communications and reduces the supplies of goods and at the same time sets up a heavy demand for them. Scarcity, both relative and absolute, is often the direct result of war. Further, there is the evergrowing necessity for currency inflation which contributes for higher price level. Thus economic and monetary factors work in the same direction resulting in a steady rise in prices. But as prices rise, the costs also increase, particularly because the labourers succeed in getting dearness allowance etc. on the basis of rising cost of living. This process of higher prices leading to higher costs and higher costs resulting in higher prices is generally known as the vicious spiral of costs and prices. Advanced countries have realised the inevitability of this spiral and have



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begun tackling the problem from the monetary as well as the economic side. On the economic side shortage in the supplies of commodities, whether due to low stocks or to the necessity for providing for the contingency of cessation of supplies in the future has been frankly accepted and the task of rationing the scarce goods amongst the consumers concerned has been faced as an administrative problem. Production, both agricultural and industrial, has been maximised so that civilian needs might not suffer to any harmful degree. Every effort has been taken to make the country self-sufficient in the essential commodities. In the case of the consumer's goods the popular appreciation of the exigencies of war together with the deserved confidence of the public in the impartiality of the Government enables the smooth working of the system of rationing.

Conditions in India are quite different from those prevailing in self-governing countries abroad. The Government of India does not choose to be dictatorial in matters in which dictatorship might be of practical advantage to the people. Popular enthusiasm for war is very low here compared to Great Britain or other belligerent countries. Besides, there is the unspoken fear of the common people that measures of price control or regulation of the distribution of scarce goods are apt to be conceived more in the interests of the Government and of foreign nations than of the people at large. There has been from the administrative point of view initial difficulties which could have been overcome only when the system had a measure of demonstrable success to show to its credit.

The two Price Control Conferences held on October 1939 and January, 1940 did not consider it necessary to interfere with the trends of agricultural prices. The Third Price Control Conference which met in October 1941 gave some consideration to the problem of cloth prices which soared high as a result of the freezing order against Japan. The question of controlling agricultural prices did not seem to the representatives to be causing anxiety. Some representatives even went so far as to object to any import of rice from Burma. The conference ended with a proposal to watch the trend of the need for the control of foodstuffs and they were led on February 6, 1942 was mostly engaged in discussing the transport bottleneck which had by then developed so as to give much anxiety to the general public. It was affirmed that price control should be left to the Provinces and the need for free inter-provincial trade was stressed. The Fifth Price Control Conference held on April 7th and 8th, 1942 emphasised the importance of linking control over distribution with price control and recommended the licensing of wholesale dealers by Provincial and State Governments. Under the Foodgrains Control Order of May 1942 Provincial Governments were empowered to license wholesale dealers in foodgrains and to require returns of their transactions. No All-India policy regarding price was evolved and the representatives of the Government of Bengal, C.P., Bihar, Orissa and Assam who met for the purpose could not come to any agreement. The Provincial Governments possessed neither the machinery nor ability to cope with hoarding and profiteering. The position became worse when the whole country was covered with unilateral inter-district and inter-provincial regulations lacking coordination or uniformity. When the channels of trade were choked stocks began to be built and scarcity grew more severe than ever before.

The Government did not start with a frank and full acceptance of the need for the control of foodstuffs and they were led on to it only step by step. It may be imagined that in a vast agricultural country like India the control of food stuffs and food prices is beset with innumerable and almost insuperable administrative difficulties. The system of licensing wholesale dealers and restricting movements of grain from one part of the country to another was tried only half-heartedly for over a year till the unsatisfactory nature of its working, and the growing certainty of the shortage of food stocks forced the Government to attempt more comprehensive systems of control. For the food problem in its earlier phase the Government had, on the one hand, a campaign for encouraging the people to grow more food, and on the other, a number of speeches from official spokesmen assuring the people that the fears of shortage were exaggerated. But as soon as the shortage became apparent, the necessity for fuller measures was recognised and a separate Food Department was constituted in the Government of India. One of the immediate results of the Constitution of the Food Department is the de-controlling of wheat which is tantamount to a confession that the earlier measures of regulation were a more or less complete failure. In fact, the Government's efforts in the region of food and of other consumers' goods have been restricted to providing certain amount of relief partly through the acquisition and control of a part of the production and partly through the stimulation of production. In the case of cotton piecegoods, the Government have succeeded in persuading the Indian mills to secure a part of their production for what is known as standard cloth, which is to be made available to the people through recognised dealers at reasonable prices. To the extent that production in commodities like sugar and salt has risen, though not proportionately to the demand, the provincial controls have been successful in mitigating the scarcity, and in making the goods available to the general body of consumers.

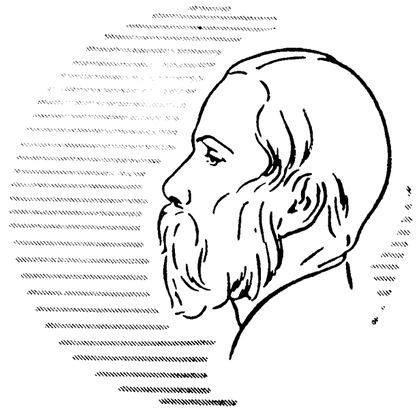
DIFFICULTIES IN PRICE CONTROL

It must be conceded that problem of price control has been beset with peculiar difficulties in India. In this vast country a very wide variety of articles are produced and there is no standardisation in production or consumption. Production is being carried on by millions of petty agriculturists or small producers. Money economy has not yet fully covered national life. Barter and traditional rules governing economic transactions still hold their place in rural economy. The people are illiterate and the organisation of wholesale and retail trades is imperfect. Consumers are not organised as in several European countries. The velocity of circulation of money is very low compared to foreign countries because people here have not yet fully given up the habit of hoarding their money incomes instead of spending them out. During the recent years when prices have gone high as a result of inflation and other factors the hoarding habit has lessened the rigors of inflationary spiral in so far as it reduced the tempo of the velocity of circulation. There are some who argue that but for this hoarding habit the Indian price level would have reached greater heights at earlier dates. Thus the background of Indian economic life is such as to make any scheme of price control very difficult of achievement. Further, when the war broke out the public opinion was actually in favour of leaving the prices, particularly those of agricultural commodities, to themselves. It was argued that increase in the prices during the earlier stages of the war could not be condemned outright in view of the fact that during the decade before 1939 Indian prices had slumped so low as to deserve an increase after 1939 so that the effects of the slump could be averaged up. Then, if the prices are classified according to the well defined group of articles it is found that the factors governing the prices of foodstuffs and other agricultural commodities are different from those determining the trends of the price levels of non-agricultural commodities, raw materials and manufactured goods. Price fixing for imported articles is comparatively easy but when actual shortage of supply in essential articles is suspected mere price control, without rationing, cannot control the situation. If the price control collapses and if the merchants and producers fear that scarcity is the bottom of the trouble, reckless hoarding, profiteering and black-marketing would result. All the above factors have to be borne in mind and the price control policy should have been so devised as to meet the requirements of the nation at every stage of the war and internal economic developments.

The best criterion of an optimum degree of price control is that the desired supplies must be forthcoming to the community. While a certain good margin of profits has to be allowed both to the agriculturist and the industrialist as incentive to increase production, the central aim of price control should be to regulate the effects of price on the standard of living of the masses. In a country like India where the masses live almost on the verge of starvation, this problem is of exceptional importance. High prices, either regional or all-India, should not have been allowed to go out of control and the transport system should have given more attention to civilian demands than it has till now. Price control could have been a success only if sufficiency of essential foodstuffs had been assured. In the absence of a precise calculation as to the exact requirements of the people and when exports were allowed to flow out of this country with no thought of sudden emergencies an air of unreality has been lent to the policy of price control. The Government failed to note that the bulk of the rise in prices during the last war came about only towards the end and after peace, but the trends during this war are clear that even before the expiry of two years of war the position has given rise to anxiety. Even the "War Profits" were not evenly distributed over all parts of India or over all classes of population. The growers of raw cotton and groundnut, for example, have not been realising a higher price for their products than what they have been called upon to pay for their food, fuel, and clothing. The agriculturists did not prosper even during the period of rising agricultural prices. When, after 1941, the scarcity of foodstuffs was suspected the village population suffered a further deterioration in their standard of living.

DEVELOPMENTS DURING APRIL 1942—MARCH 1943

The trend of prices during the period March 1942 to March 1943 has served as a writing on the wall. The Economic Adviser's index records an increase of all commodities from 144.2 to 184.7 in December 1942. The Calcutta index points a steep rise from 185 average for 1942 to 272 by March 1943; the corresponding rise under cereals is from 157 to 334, under pulses 162 to 309, under sugar 208



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to 298, and under other food articles 298 to 457. The Bombay index records that while the general index rose from 197 in March 1942 to 256 in March 1943, the non-food group rose from 226 to 274 but the food group increased by 79 points, viz., from 143 to 222. The same story is told of the index number of wholesale prices in Bangalore. There the general index (base year 1914=190) has risen from 136 in February 1942 to 238 in February 1943. Food grains and pulses increased from 131 to 226, oil and oilseeds from 112 to 334, other food articles from 114 to 226, textiles from 141 to 267 and the others from 175 to 250.

The cost of living of the labouring classes increased at an accelerated pace as can be inferred from the following table:—

WORKING CLASS COST OF LIVING.

	Bombay. (Base year ending January, 1934=100).	Ahmedabad. (Base year ending July, 1927=100).	Cawnpore. (Base August, 1939=100)
March 1942 ..	137	96	150
June 1942 ..	152	111	175
Sept. 1942 ..	170	117	202
Dece. 1942 ..	188	149	224
March 1943 ..	208	173	246
August 1943 ..	227	293	339

	Jamshedpur.. (Base five years preceding 1914=100).	Madras. (Base year ending June 1936)	Lahore. (Base 1931 35=100).
March 1942 ..	140	115	174
June 1942 ..	192	128	194
Sept. 1942 ..	229	146	220
Dec. 1942 ..	226	158	252
August 1943 ..	—	275 (July)	185

In Bombay the index rose by 90 points, in Ahmedabad by 197 points while Cawnpore recorded an increase of 189 points. Lahore pointed a rise by 11 points while the increase in Madras was 160 points during the period March 42 to August 43. Everywhere the percentage increase has been rapid and heavy.

BENGAL FAMINE

Bengal which is on the border of battle fields had certain special factors working for a sudden rise in prices. The cyclone and floods already damaged agriculture in certain fertile regions of the province in 1942. The stationing of enormous number of troops and the consequent pressure by the military for supplies had worked to raise the price of all articles required for civilian consumption. On the 4th of May, 1943 Mr. A. K. Fazlul Huq—who resigned his Chief Ministership in March—accused the Government of India and Bengal of putting into effect a 'denial policy' in Bengal. It was alleged that the severe restrictions on the movement of boats and largescale purchases of rice and paddy in the rural areas by the Agents authorised by the Government had resulted in general and regional scarcity in Bengal. That the export of rice to Ceylon and other places continued at a time when the people were starving added a powerful argument for scare mongering. Hoarding became widespread and Government machinery would not cope with the situation at the proper time. Prices shot up and most of the essential foodstuffs almost disappeared from the market. The following table gives a clear picture of the situation in Bengal when the famine was just beginning:—

COST OF LIVING INDEX ON THE BASIS OF RETAIL PRICES PREVAILING ON THE 11TH MAY, 1943, FOR THE WORKING CLASS IN AND AROUND CALCUTTA.

Item.	Pre-war Price Index.	Index on 11th May, 1943.
1. Dal	100	300
2. Sugar	100	222
3. Ghee	100	245
4. Atta	100	386
5. Flour	100	400
6. Spices	100	232
7. Kerosene Oil	100	171
8. Mustard Oil	100	262
9. Salt	100	275
10. Coal (Jharia)	100	325
11. Coarse Cloth (average of four varieties)	100	475
12. Rice (average of 7 varieties)	100	742
13. Matches	100	180
14. Tea	100	300
15. Milk	100	125

The figures give an idea as to the degree of scarcity felt by the people and the position in rural areas has been no less acute.

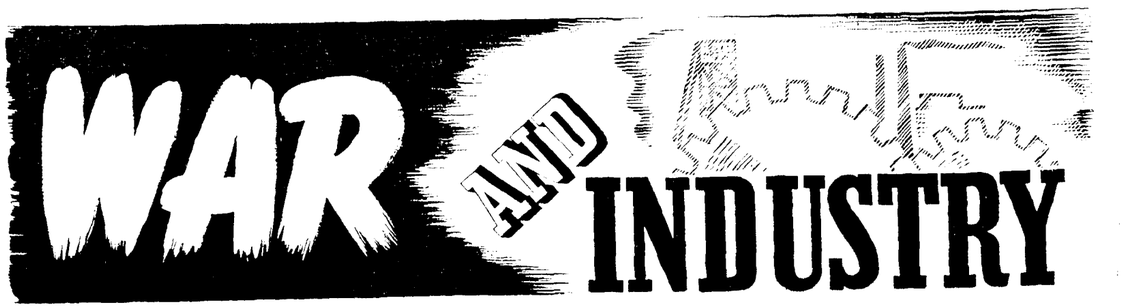
Food Policy.

Eearly in 1942 the position was one of planning a satisfactory distribution of foodstuffs and not mere intensification of the price control drive. The Food Grains Control Order of 21st May 1942 placed the responsibility of checking and regulating the flow of stocks of rice on the Provinces. The Provincial Governments failed to control the situation for want of administrative machinery. A web of inter-district and inter-provincial regulations was the result and trade channels were blocked and the flow of goods seriously curtailed. While the problem of feeding the deficient areas was growing in urgency Bengal desired to have freedom of action and the first Food Conference held at Delhi in December 1942 ended without any effective all-India solution of the growing crisis. Madras C. P., Assam, Bombay and the U. P. opposed fixing the price of rice and lack of unanimity as to who should determine the surplus or deficit of different areas further postponed the trouble even in February 1943. The truculence of certain provinces together with the unwillingness of the centre to override the provinces in the matter of food prices resulted in masterly inactivity for some time. No Basic Plan of food policy could succeed when it was not backed up by centralised authority and co-ordinated plan. Transport bottleneck made the situation worse, and traders and producers of food-grains were left free to develop the art of hoarding, cornering of stocks, profiteering etc. While the authorities were bungling the poorer sections of Bengal, Orissa, Rajputana and Malabar could no longer bear the sufferings. Famine ravaged in several parts of the country.

THE FUNDAMENTAL FACTORS

The fundamental factors which threw the price structure out of gear have been overlooked. When the war began India's industrial potential was very low and her agricultural resources were hardly sufficient for her own needs. The lukewarm industrial policy followed by the Government of India during the decade before this war and even afterwards weakened India's capacity to cope with the war situation. It is a matter of common knowledge that Government remained apathetic, if not openly hostile, to the development of key industries in India. India's industrial resources are great and if she had been allowed to develop automobile, ship building, machine tool, heavy chemicals, locomotives, and other heavy engineering industries, she could have easily produced most of the articles imported from abroad, manufactured fertilisers to speed up agricultural production and would have eased the transport difficulties. The scarcity of manufactured goods, which started pushing up the cost of living index and the agricultural prices, could have been easily solved. While the Government did not delay in increasing the output of munitions and other war materials the production of civilian supplies has been woefully forgotton. The examples of Australia, Canada, Africa and New Zealand present a striking contrast. The deliberate policy of keeping India in a low industrial stage had proved a great menace when the war clouds had gathered fast.

Coming to the agricultural policy of the government we find that the deeper forces of agricultural stagnation were not fully appreciated by the authorities. The net area sown in British India in 1939-40 has been approximately the same as it was in 1929-30 and the decline since 1936-37 has been pronounced. The decline occurred in the face of an increase in area under irrigation from 50.16 million in 1936-37 to 54.95 millions in 1939-40 and suggested that considerable tracts of marginal land was going out of cultivation. The fallow land which stood at 45.78 million acres in 1929-30 had increased in 1939-40. If 1939-40 is compared with 1929-30 we find that the production of foodgrains and pulses had increased by 0.8% only, for British India as a whole, while Provinces like Madras, Bombay, Punjab, Bihar, Orissa, and N. W. F. P. recorded decline. During the period under review the area under foodgrains increased by 1.5% but the outturn decreased by 4%. The rice production had recorded a decline of 3.5% during the period. All this happened when India's population increased by 15% in a decade with 20% as the figure for Bengal which could increase her rice production barely by 3%. It is therefore very clear that on the eve of the war India was on the brink of a nation-wide scarcity in the matter of foodstuffs. The real magnitude of insufficiency could not be felt as normal imports from outside sought to fill the gap. When the war broke out India was made the supply base for the field armies in the Mideast and the countries on the East. The activities of the United Kingdom Commercial Corporation proved that there has been an enormous flow of commodities from India. While we may be glad to know that Indian supplies saved Persia from famine in 1941 we cannot overlook the scarcity Indian exports created in India and the tendency for the prices to go up as a consequence. The growing surplus of exports over imports operated as a double edged weapon. On the one hand the stoppage of imports raised the prices of manufactured articles generally imported into India and, on the other hand, the exports of foodstuffs induced a severe scarcity and worked as an inflationary force. When the Burma Government assured the monopoly of export of rice in the middle of 1941 rice situation in India definitely became worse. The Japanese war in



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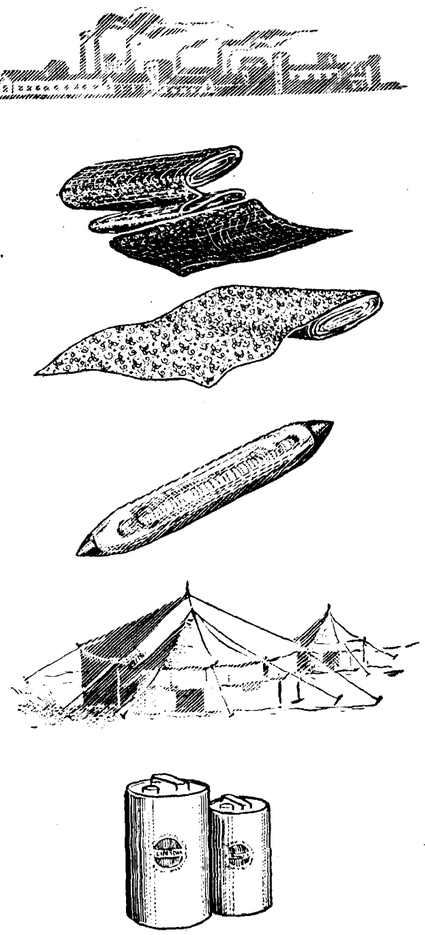
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December 1941 and the quick loss of Burma by April 1942 deprived India of a valuable source of rice supplies. The Government having failed to speed up the production of foodgrains there was a scare of severe scarcity and hoarding emerged as a new factor by January 1942 accelerating the upward swing of prices.

Inflation of Indian currency has been a very forceful cause of the rise in prices. Prof. C. N. Vakil pointed out that since the declaration of war the volume of currency had expanded out of all proportion to the increase in production. This phenomenon known as inflation has been caused by the Government of India agreeing to supply rupee finance for His Majesty's Government. The accumulation of sterling securities and the sale of *ad hoc* securities by the Reserve Bank of India resulted in an increase in note circulation. The ever increasing war expenditure necessitated greater taxation, new floatation of loans and currency expansion. The total amount of note issued by August 1939 stood at 179 crores and in June 1941 the figure was as high as 278 crores. The pace of expansion was greater after February 42 than ever before. In March 1942, 402 crores worth of notes were in circulation. In December 1942 the figure had risen to 561 crores and in August 1943 the height was 766 crores. Even making the necessary deductions for increase in bank deposits, loans by Government etc., the actual amount of notes and coins in circulation had been very heavy. The inflationary momentum had gathered sufficient force by August 1941, and together with other factors like the war in Pacific, it wrecked the price structure in several parts of India. The anti-inflationary measures adopted by the Government of India and the Provinces and the States could not mitigate the evil. The tempo of inflation has not yet lessened.

There are some who find it convenient to attribute rocketing prices to psychological factors. Dr. L. Nemenyi has pleaded that the volume of currency is quite normal and the rapid rise in prices is due to 'accumulated effects of speculation, hoarding, general ignorance about monetary matters and the outcome of statements, speeches, pamphlets etc.' There is no doubt that psychological factors operated as accelerating cause of raising prices since 1942 but these factors have been later developments. Actually it is the currency expansion, general and local scarcity of foodstuffs and other articles which induced profiteering and hoarding. When leading men spoke of scarcity and when the Government tacitly admitted the dismal failure of the price control policy, the economic phenomenon of hoarding was the direct result. Lack of coordination in the price control policies and food prices of the Government of India, the Provinces and the States gave rise to anti-social activities in the market. Psychological factors have been the effect and not the cause of the rise in the price level before 1943 and since March these factors have assumed greater force and publicity.

How to Arrest the Rising Prices.

There are signs to-day that the economic situation in India, comprising, as it does, a large-scale inflation of currency and of more or less acute shortage of commodities, has begun to exercise the minds of the Government. While civilian supplies and price control are largely the domain of the provincial governments, the responsibility for neutralising, as far as possible, the inflationary forces rests with the Government of India. The Ordinance in respect of advance payments of the Excess Profits Tax is the first sign of the Government's recognition of the fact of inflation. But it will hardly be pretended that advance paymens of E.P.T. and the multifarious and, if only for that reason, chaotic measures of price control will suffice to secure the necessary improvement in the economic conditions of the country at large. Clearly much more has to be done by way of reducing the volume of currency. Price control measures have got to be designed with greater care and circumspection. The administrative efficiency has to be improved a great deal. And above all, measures have to be taken to overcome the undue shortage of consumer's goods of every description. While these are practical measures, which can be taken only against a clear understanding and wider acceptance of the basic facts and principles the controversy as to whether or not there is inflation in this country continues to befog the public mind and reduce the pressure of public opinion on the Government for undertaking the necessary measures.

We have to consider measures to mitigate and neutralise the inflationary forces at work. It will be conceded on all hands that, as a beginning, it is incumbent on the Government to declare that they recognise the harm that inflation has already done, and they bind themselves not to effect any further additions to currency or allow any further increase in the accumulation of the sterling balances in London. Such a declaration can be of little avail if measures are not taken on the one hand, to prevent the growth of sterling balances in London and on the other, to obviate the need for further additions to currency at home. A beginning in such measures has already been made by the publication of the Ordinance in respect of advance payment of Excess Profits Tax. The energetic application of this measure will result in the absorption into the Government coffers of a large amount of redundant currency. This measure will, doubtless, have to be reinforced by the floation of a large defence loan of Rs. 100 crores, for the success of which the necessary changes in the political situation must perforce be brought about by the Government. Such a defence loan together with the advance payment of E.P.T. will effect a very considerable reduction in the volume of circulation. While the amounts so got can be utilised for financing the expenditure on war account, whether it be on behalf of the Government of India or on behalf of other foreign governments, the only way by which further increase in sterling balances can be prevented is to make it clear to the British Government that for financing their purchases in this country, they must come into the Indian market as borrowers without the mediation of the Government of India. Little need be said in justification of a measure which, strictly speaking, should have been adopted as soon as the programme of the repayment of sterling loans was well advanced.

APPENDIX.

INDEX NUMBER OF WHOLESALE PRICES.

(January-June 1939=100).

	Average.			Monthly Bulletin of Statistics—League of Nations, (June 1943).
	1940	1941	1942	1943
1. Union of South Africa ..	112	123	159	143 (March)
2. Egypt	115	148	204*	——
3. Canada ..	113	123	131	136 (May)
4. U.S.A. Bur. of Lab.	103	114	129	136 (April)
5. Argentina ..	120	141	182	195 (March)
6. Chile	114	133	180	197 (February)
7. Cota Rice ..	96	102	132	182 (May)
8. Mexico	103	109	121	130 (February)
9. Peru	119	140	176	199 (April)
10. Venezuela ..	98	107	110	——
11. China (Manchuria)	131	143	156†	——
12. India (Calcutta) ..	121	141	187	257 (January)
13. Iraq	138	179	468(1)	——
14. Iran	116	146	243(2)	——
15. Japan	117	124	134	137 (February)
16. Palestine ..	130	179	276(3)	——
17. Germany ..	103	105	107	109 (April)
18. Bulgaria ..	115	145	200(4)	——
19. Denmark ..	157	185	193	194 (April)
20. Spain	125	147	162	179 (January)
21. Finland ..	141	174	214	232 (February)
22. Hungary ..	118	143	175	194 (March)
23. Norway ..	136	167	177	179 (April)
24. Portugal ..	131	153	177	193 (January)
25. U. K. (Board of Trade) ..	140	157	164	167 (May)
26. Sweden ..	134	158	173	180 (April)
27. Switzerland ..	135	173	198	205 (April)
28. Czechoslovakia ..	130	146	162‡	——
29. Turkey	120	159	238‡	——
30. Australia ..	110	117	131	135 (February)
31. New Zealand ..	114	126	135	140 (April)

*May 1943.

†September 1943.

(1) October 1942.

(2) July 1942.

(3) September 1942.

(4) December 1942.

‡April 1942.

‡April 1942.

HYDERABAD FIGHTS INFLATION

One of the inevitable consequences of the present war is universal inflation caused by the violent disturbance in the normal ratio between transactions (exchange of goods) and the currency available for carrying them out. There has been a great contradiction in the volume of consumer goods and an equally large, if not larger, expansion of currency rendered necessary by the ever-increasing financial demands of the war. This scarcity of consumer goods has been accentuated by hoarding resorted to by various sections of the population for different reasons. The result has been a keener competition for ordinary goods and a greater willingness to pay higher prices for them—and this, in common parlance, is termed inflation.

IS THERE INFLATION IN HYDERABAD?

Hyderabad has not escaped this world-embracing calamity though the causes of inflation here are somewhat different from those operating in the rest of India. The point requires elucidation. With the abnormal increase in the circulation of paper currency in British India and the easy conditions obtaining in the money market, a portion of surplus capital has been diverted for investment in Hyderabad. This partly accounts for increase in the volume of paper currency in Hyderabad but the inflationary tendency is not evident there in the sense that increase in paper circulation in Hyderabad (about 89.9%) over the pre-war figure has not been *accompanied by a corresponding* increase in the total currency circulation which has risen only by 57%. Paradoxical though it may seem, the issue of additional metallic and paper currency by the Hyderabad Government has been necessitated by inflation elsewhere and is therefore the effect of general inflation rather than the direct cause of it.

The Government of Hyderabad seem fully to be alive to the situation and to realize that inflation can only be checked by restoring the normal relationship between transactions and the means of carrying them out. In other words, they are addressing themselves to the problem of increasing the volume of consumer goods by stimulating production and, at the same time, mopping up surplus capital.

STEPS TO COUNTERACT INFLATION

To achieve this end the Hyderabad Government have already taken a number of important measures intended, directly or indirectly, to arrest the inflationary tendency. A "Grow-More-Food" campaign has been waged vigorously for the last two years. With a view to increasing the production of foodstuffs Government spent, by way of concessional measures, Rs. 16,20,900 last year while a sum of Rs. 33,20,000 has been set apart for the current year and a provision of about the same amount made for the next year. Efforts made in this direction have already yielded encouraging results—an increase of 16% over the last year's figures has been registered in the production of food crops.

ANTI-HOARDING & ANTI-PROFITEERING MEASURES

An allied problem, which is now under active consideration of Government, is to bring to the market foodstuffs and other commodities hoarded by certain sections of the population. For this purpose a full-fledged Department of Civil Supplies has been set up, fully equipped to deal with the control of prices and the acquisition of foodstuffs, cloth and yarn as also the importation of standard and other cloth from British India.

The Cotton Cloth Control Order has been promulgated under the Defence of Hyderabad Rules. The question of fixing the prices of cotton etc. is under consideration. Regulations for the levy of excise duties on tobacco and vegetable products have been sanctioned and steps are being taken for their assessment and collection.

ONLY "INESCAPABLES" ALLOWED

As a further step in this direction capital works programmes have been curtailed and only such of them are being allowed to be undertaken as come under the category of "inescapables".

EFFECTIVE CHECK ON MUSHROOM CONCERNS

Then, in order to check the growth of mushroom industrial or commercial concerns, a special regulation known as the Hyderabad Companies (Amendment) Regulation has been promulgated and a new Rule has been added to the Defence of Hyderabad Rules. Under this Regulation no banking company, whether registered in Hyderabad or elsewhere, is allowed to start business without the previous sanction of Government. Similarly, the Rule newly added to the Defence of Hyderabad Rules provides that no new company can be formed or floated without the prior consent of Government. A special committee has been set up to examine all applications for the issue of fresh capital.

LOAN TO BE FLOATED

The proposal to float a Development Loan at this stage might be regarded as somewhat immature; as, due to shipping and other difficulties, H.E.H's Government may not be able to obtain the necessary plant and machinery for the various projects which they have in view for the post-war period. But, on the other hand, there is plenty of surplus money in the market and the need for checking the effects of inflation is real. Government have, therefore, decided with the sanction of His Exalted Highness, to float a loan in the first week of Azur 1353F., bearing interest at the rate of 2½% per annum.

The loan is repayable at par on the 16th Azur 1373 F., but Government have reserved the right to repay the loan or any part thereof, at par, on or after the 16th Azur 1363F., on giving 3 calendar months' notice in the Jareeda. As usual, there would be a sinking fund, for the redemption of the loan, the annual contribution to which would be met at a figure sufficient to wholly discharge the loan on maturity. The Hyderabad State Bank have offered special facilities to small investors to subscribe to the loan in easy instalments under a special loan Scheme.

EXCESS PROFITS TAX ON THE WAY

One of the most effective measures which the Nizam's Government are taking to meet the situation is the proposed levy of Excess Profits Tax. This may appear somewhat anamolous in a State where there is no income-tax, or any other form of direct taxation. But Excess Profits Tax is in the nature of a specific tax, and taxation is generally begun in its specific form before it develops into more personal form. The growing complexity of modern economic life has created new problems and enlarged the field of State activity. Realising the implications of the situation as well as their own obvious responsibilities in this respect, the Government of His Exalted Highness have decided to bring in this new measure of taxation.

The Excess Profits Tax Bill as passed by the Legislature has now, with some modifications, received the assent of His Exalted Highness. The Bill envisages imposition of a tax on only such of the profits as are in excess of the pre-war normal profit of a business, and contains no provision for assessing to tax agricultural income, or the professional earnings of a doctor, lawyer or accountant, or the income from salaries, property or investments. Thus the scope of the Act is restricted to the taxation of business profits only when such profits exceed the minimum standard of Rs. 24,000 or the standard pre-war profits whichever is greater. Although the charge will be made on a tax-payer, year by year he will, in effect, pay tax only on the net amount of profits which he makes in the period during which the Act is in force. It is, therefore, provided that, if in any year there is deficiency instead of an excess, the deficiency will be set off against the excess profits made in other periods. The Act is designed specially to suit the peculiar requirements of Hyderabad where, unlike British India, income-tax is not levied. The incidence of tax is kept considerably lower than what it is in British India. As industries in the State are not fully developed, it has been decided to tax industrial concerns at a lower rate than that applicable to business in general. To take the example of a company liable to be assessed at the highest rate in Hyderabad on an income of Rs. 1,00,000 with a standard profit of Rs. 40,000, the aggregate amount that such a Company will have to pay by way of Hyderabad Excess Profits Tax and deposit will be Rs. 36,000, as against Rs. 71,125 which that company will be liable to pay in British India on account of income-tax, super-tax, excess profits tax and deposit. If the compulsory deposit which is refundable in both the places is ignored, the company's net liability on account of tax alone in British India would be Rs. 59,125 as against Rs 24,000 in Hyderabad. The deposit scheme is another important feature of this legislation and has for its object compulsory savings which may be available to industries and business for post-war developments. The deposit will be returnable within three years after the end of the present hostilities with simple interest at 2% per annum. The revenue will be devoted exclusively to ameliorate the conditions of the poorer sections of the community and low paid Government Servants by way of supply of foodstuffs and other necessaries of life at comparatively cheap rates.

These are some of the measures that have already been taken in Hyderabad to fight inflation while others are being contemplated. It will be noticed that everything possible is being done in Hyderabad to check the upward trend of prices and other concomitant tendencies by discouraging profiteering and by impeding the growth of mushroom industrial and commercial concerns inspired both by the easy conditions prevailing in the money market and a reckless yielding to the gambling instinct. This may enable the fundamental economic laws to prevail over the transient phases and stages through which the world is passing and may even lead to a state of normality or something approaching it.

ORGANISATION OF SCIENTIFIC RESEARCH

PRESENT POSITION & FUTURE NEEDS

By J. J. GHANDY, C.I.E., GENERAL MANAGER, TATA IRON & STEEL CO., LTD. JAMSHEDPUR

That research is the chief instrument of progress there can be no question. The entire industrial structure of the West has been reared on research. It serves no practical purpose to seek shelter behind our ancient cultural and philosophical heritage. We live in a competitive world in which it is not necessarily the best nation in the cultural or ethical sense, but the best fitted for economic survival that survives. Life, to-day, is a veritable battle, a chemical-mechanical battle, a battle of industries, a battle of fuel and steel and, in the last resort, a battle of research. Divorce research from industry and you ensure the beginning of the end of a nation.

Against a background such as this, one cannot but view with grave concern, our country's relative deficiencies in the field of research.

(a) *At the time of World War I.*—At the time of the first World War, research in India was chiefly confined to the official scientific services, like the Geological Survey, the Botanical Survey, the Departments of Agriculture and Meteorology and the Forest Department. The Board of Scientific Advice constituted by the Government of India in 1902, which was eventually disbanded in 1924, co-ordinated the work of the various official agencies. The Indian Research Fund Association founded in 1911, carried out researches on diseases. The chief institutes of research were the Indian Institute of Science at Bangalore projected by our late Mr. J. N. Tata, the Forest Research Institute at Dehra Dun and the Agricultural Research Institute at Pusa. There were four engineering colleges at Roorkee, Madras, Sibpur and Poona, which concerned themselves mainly with the turning out of recruits for the Public Works Department. For mining education, there were courses at the Sibpur College and evening classes on the coal field.

Whilst the achievements of the official scientific services have been of outstanding benefit to India, it cannot be denied that those services were inadequately staffed, and, except in the Geological Survey and the Agricultural Department, the functions and powers of the experts employed were not properly classified or defined. The institutes of research also suffered from an inadequacy of staff. The four engineering colleges confined themselves to the relatively narrow requirements of the Public Works Department. The accommodation at the Sibpur College for students of mining was entirely inadequate, while the evening classes on the coal fields in the absence of a proper school of mines could provide no more than a limited range of instruction. The School of Mines at Dhanbad recommended by the Macpherson Committee in 1913-14 was yet to come into being.

The first World War brought the realisation in India—as in England, as we shall see later—that in a nation's struggle for economic survival, applied research was a major necessity. The Indian Industrial Commission appointed by the Government of India in 1916 to "examine and report upon the possibilities of further industrial development in India", reviewed the existing research facilities in the country and made detailed recommendations for their improvement and expansion.

(b) *During the interlude.*—With the return of peace, the enthusiasm for research waned, the lesson did not completely perish. During the period between the last war and the present war, the old scientific bodies continued to render outstanding service to India, and new bodies like the Imperial Council of Agricultural Research, the Indian Central Cotton Committee, the Indian Central Jute Committee, and the Indian Lac Cess Committee appeared on the scene. Many of the universities improved their laboratories, added engineering, and, in a few cases, also metallurgy, to their curricula, and increased their staff.

The Tata Iron & Steel Company which had been busy on research connected with iron and steel, particularly since 1926, and had been feeling more and more the necessity of extended research facilities as it progressed with the years, completed new Control and Research Laboratories at Jamshedpur in 1937, which are perhaps the finest laboratories attached to any single steel-producing unit in the world.

Yet the fact remains that industrial research in India was still sporadic and unsystematised.

(c) *During World War II.*—The outbreak of the present war, laid even greater stress than the first war on the need for industrial research in India. The World had made rapid advances in science in the brief interlude of peace. Mechanization had almost reached its zenith. India's strategic position and the gradual diminution of imports with increased shipping difficulties rendered it imperative for her, as never before, to develop her own war potential to the maximum. But this could not be accomplished except through systematic experimentation and research for which no adequate facilities existed in the country.

BOARD OF SCIENTIFIC AND INDUSTRIAL RESEARCH

In April 1940, in order to meet the imperious needs of the war, a Research Body known as the Board of Scientific and Industrial Research consisting of a number of scientists and industrialists and presided over by the Commerce Member was brought into existence by the Government of India. This organisation has undergone considerable expansion since its inception, and to-day comprises

(a) A Council of Scientific and Industrial Research,
(b) A Board of Scientific and Industrial Research,
(c) An Industrial Research Utilization Committee, and
(d) A Committee for the publication of a Dictionary of raw materials.

The Council consisting of officials, industrialists and scientists is the sovereign body. Its main functions are to initiate proposals, exercise administrative control over the work of the lower bodies, and examine and approve or reject research proposals received from these bodies or from other research institutions, universities, individual scientists and industry, and secure funds from Government and the public.

The Board somewhat similarly composed as the Council is purely an advisory body which aided by some 20 research committees examines each research scheme submitted by official or non-official scientists, refers it to one of its many research committees and if necessary, gets it further examined by its technical committee and then forwards its recommendations to the supreme Council for final approval.

The Research Utilization Committee composed largely of industrialists advises on the commercial utilization of researches completed by the Board.

Another Committee has been set up to compile for the benefit of Indian industrialists a Dictionary of Indian Raw Materials to replace the now out-of-date Watt's 'Dictionary of Economic Products'.

As the Board maintains only one Research Laboratory of its own, it has to get most of its research work done in other laboratories largely by staff not directly connected with the Board. I think it will be generally agreed that during the few years of its existence, the Board has been able to complete a number of researches valuable both from the point of war effort and for the industrial development of India.

It is not possible in the limited time at my disposal to set out in detail the various achievements of the Board. I can only make a passing reference to a few of the many items that have been investigated. Its work on coal-tar and its products, synthetic drugs, the preparation of vitamins, paints and varnishes, plastics, vegetable dyes, de-colourising vegetable oil and, mineral oils, the design and construction of electro-accoustical and high frequency apparatus, X-ray transformers, and the extraction of sulphur from the sulphur-bearing rocks in Baluchistan, has been of considerable practical value.

With the help of the Board, the Forest Research Institute, Dehra Dun, has turned out packing cases for army boots, timber for aircraft construction and for machine nailing tests, for ammunition boxes and for shuttles; and the Government Central Weaving Institute, Benares, has designed and constructed an automatic tape-loom, a twisting machine and a multiple treadle winder.

The importance of the synthetic dye industry which was first developed in Germany, is today commonly recognised as the basis of the synthetic chemical industry. The investigations of the Synthetic Dyestuffs Committee have considerably increased the possibility of the establishment of this industry in India.

Though much has been done by the Board, it cannot yet be said to be much beyond the prefatory stage. The paucity of laboratories, apparatus, and trained staff in the country cannot but hamper the progress of research in the country. Aware of this deficiency, the Board has had under contemplation the establishment of a National

Chemical Laboratory at Poona, a National Metallurgical Laboratory at Jamshedpur, a Fuel Research Laboratory at Dhanbad, a National Physical Laboratory, a Central Glass Research Institute, a Food Technological Laboratory, etc. Not until these laboratories are brought into existence will it be possible for industrial research to keep pace with the needs of this age.

There is a number of scientific institutes in the country, like the Indian Science Congress Association, the National Institute of Sciences, the Royal Asiatic Society of Bengal, the Indian Academy of Sciences, Bangalore, and the National Academy of Sciences, Allahabad, but in the absence of a supreme national academy, there can be no assurance that their work is properly co-ordinated or there is proper collaboration between them, with no unnecessary duplication of effort.

TATA'S LABORATORIES AT JAMSHEDPUR

I mentioned the new Control and Research Laboratories of the Tata Iron & Steel Company at Jamshedpur in an earlier section. They represent the first large-scale research laboratories constructed by private industry to reap the full fruits of research. Time has more than justified their construction. Thanks to these research laboratories, the Steel Company today, is able not only to turn out unprecedented tonnages of ordinary carbon steel and structural products, but also develop and supply a rich variety of special steels for machine tools and surgical instruments, for armour plate, explosive and armour-piercing shells, helmets, parachute harness equipment, etc., to meet the varied requirements of the War.

As industrial development today depends largely on special steels, it may be said that the special steels developed by Tatas, in addition to being most essential to the War in the immediate present, constitute an insurance for the future industrial development of India.

INDUSTRIAL RESEARCH IN THE WEST

Though the realisation has come that organised research, pure and applied, is an absolute necessity in the present-day economic conditions of life, our research organisation in this country is still in the stage of infancy and the fields of industrial research yet to be covered are vast and boundless. How best this organisation can be improved, developed and expanded must be uppermost in many minds. Let us turn to the history of research in some of the advanced industrial countries of the West, and see what lessons it provides to guide our infantile steps

(a) *Research in Germany.*—The first country to organise industrial research was Germany. The war of 1870 brought the realisation that State aid to science was an absolute necessity if the new Reich was to maintain its position in the world. This led to the foundation of the famous Reichsanstalt in Berlin in 1886-87.

The Reichsanstalt.—Of its two divisions, the one concerned itself with pure science, dealing largely with questions connected with the fundamental units and standards of physical measurements, and the other with the application of the results of these investigations to German industry and manufacture. Technical colleges were also established as at Charlottenburg and Darmstadt, and a flow of scientific discoveries of industrial value came from their professors and students. Chemical, metallurgical and electrical industries, amongst others, were quick and farsighted enough to take full advantage of the discoveries of research and some of them eventually set up their own laboratories to develop for themselves the results of scientific investigations.

The work of the Reichsanstalt has been of historic importance in the growth of scientific and industrial research in Germany. Much of the standard equipment for measurements of precision, which is in use all over the civilised world today, has been developed by the Reichsanstalt. To it is also due the credit for the application of the precision methods of measurement to the establishment and control of the legal units.

Nor has the Reichsanstalt worked in isolation from the rest of the world. It has freely co-operated with foreign State industries with similar aims, such as the Bureau of Standards at Washington and the National Physical Laboratory at Teddington, and has participated in international scientific conferences dealing with questions connected with physical and technical units of measurement.

Co-operative Research.—I have dealt so far largely with the Reichsanstalt, which is a state organisation for research. Reference must be made to the organisation of co-operative research by industries themselves. The outstanding society for the promotion of sciences in Germany is the Kaiser-Wilhelm Gesellschaft founded in 1911, which maintains a number of institutes, one for natural sciences, a second for applied chemistry and physics, a third for research on coals, a fourth for research on iron and steel and so on.

Of these institutes, perhaps the best known is the Kaiser-Willelm Institute for Eisenforschung in Dusseldorf for research in ferrous metallurgy. It is financed chiefly by the German iron and steel industry through its organisation, the Verein deutscher Eisenhuttenlute.

The Institute has seven sections for research—for research on iron ores, and for metallurgical, technological, chemical, mechanical, physical and metallographic research. The work done at the Institute has undoubtedly been of paramount importance to the German iron and steel industry.

The State Council for Research.—No account of industrial and scientific research in Germany can be complete without a reference to the State Council for Research, founded in March 1937. It was not to replace the Kaiser-Wilhelm Gesellschaft nor disturb its status. The two were to work in co-operation, both being under the common supervision of the Reichminster, Herr Rust.

The rise of the Council symbolised the rise of a spirit that was at once old and new in Germany the spirit of subordination of all learning to narrow, national ends. As Herr Rust himself said: "The Council is initiated at a moment when the German people is preparing, in a manner hitherto unprecedented and by an unexampled expenditure of its utmost effort, to win its rightful foundations of existence, independent of its environment . . . . . With the foundation of this Council of new principle of scientific behaviour is introduced. . . . . What is new is the determinate and planned co-operation of technology and of science for the self-sufficiency of the Germany economy".

These words were spoken in 1937, two years before the outbreak of the present War. Research was to be regimented towards one single end, the glorification of the State—an end towards which every other effort was to be directed with a single mind. The inevitable outcome of this spirit has been the present War, which has called for an unprecedented sacrifice of blood and treasure. Here was an instance of perversion of science, the fault lying, not with science itself but its application, with the people who planned the co-operation of science, not with constructive but with destructive ends.

(b) *Research in England.*—In England, the history of scientific and industrial research prior to the outbreak of the first World War was largely a history of individual inventors and investigators like Bessemer and Parsons, Newton, Watt and Faraday. Organised research was unknown. The rich natural resources of England and her strategic geographical position had brought her incomparable prosperity. Industrial opportunities were so numerous and so easy that the industrialist did not feel the same impelling need for research as in countries like Germany with inferior natural resources. The establishment of the National Physical Laboratory at Teddington in 1899 for the maintenance of physical standards, the testing of instruments, and the assistance of industry by advice and experiment, and a system of grants-in-aid to the Universities and the Royal Society for the advancement of science, were considered sufficient to ensure the progress of industry.

The Department of Scientific and Industrial Research.—The outbreak of the first World War revealed numerous gaps in England's industrial structure. She was found wanting in a number of essential war industries, such as the fine chemical industry and the scientific instrument industry. The realisation dawned that research and industry must be brought into close co-operation not only to meet the future needs of peace, but also the more immediate, vital needs of the war.

Happily, the availability of a numerous body of University men of liberal education, possessing trained minds capable of easy adaptation to new situations, solved the question of scientific manpower.

What was needed was an organisation to mobilise the scientific talent of the country to the immediate ends of the war, and subsequently, to those of peace. The answer was the Department of Scientific and Industrial Research formed by Government in 1915 for scientific and industrial research, the Medical Research Council in 1920 for medical research, and the Agricultural Research Council in 1931 for agricultural research.

The formation of the Department of Scientific and Industrial Research marked the beginning of a new era in England, the era of organised research. The Department consisted of a committee of the Privy Council at the head to lay down research policy and secure financial assistance from Government, and an Advisory Council, comprised of scientists, to initiate specific researches, establish scientific institutions, and encourage scientific students by means of awards. Though the Committee was the superior body and received reports from the Advisory Council, it never interfered with the decisions of the Council, which was, thus, virtually autonomous.

The new Department soon came to grips with its tasks. It set up a Fuel Research Board, with a large laboratory at Greenwich to conduct research work on coal; a Building Research Station near London to investigate problems connected with the better housing

of the people; a Forest Products Research Laboratory for the study of problems connected with food, including its storage and transport; a Road Research Station at Harmondsworth to grapple with questions of road construction; and a Chemical Research Laboratory at Teddington for chemical research.

The mother department also took under its wing, the National Physical Laboratory at Teddington, and administered aid to the work of the aeronautical research committee, which has contributed in no small measure to the science of aviation.

These organisations benefited industries as a whole by bringing research to bear on problems connected with the day-to-day life of the people, but left the specific problems of individual industries unsolved. Whilst large-sized concerns, such as, in the metallurgical, electrical and chemical industries, were able to set up research stations of their own, small-scale factories, which constitute the greater bulk in England, could not afford the expenses of a private research laboratory. For the benefit of such small-scale firms, a Research Association Scheme was formulated in 1917 and £1,000,000 provided for its operation.

Co-operative Research.—Financed partly by Government and partly by member firms and based on voluntary co-operation between contributing members and with other bodies engaged in scientific research, the Research Association Scheme has fully justified itself. Today, there are some twenty research associations covering a wide range of industries in Great Britain, for example, the British Non-Ferrous Metals Research Association founded in 1919 and supported by nine Trade Associations, the British Cast Iron Research Association, and the relatively recent Welding Research Council.

For co-operative research on iron and steel, there is the Iron & Steel Industrial Research Council, which operates as a section of the British Iron & Steel Federation and works in close association not only with the Federation, but also the Iron and Steel Institute. Having no laboratories of its own, it conducts its researches in the laboratories of member companies and also in University Laboratories. The Council thus represents an excellent example of co-operation between Government, Industry and the University for the benefit of the community at large.

The University.—The British universities have provided a flow of research workers for industry in the past. Yet it is felt that the collaboration between the universities and industry is not close enough. At present, the bulk of technologists comes not from Cambridge or Oxford, or London, but from the provincial universities, and most of them are from secondary and elementary schools. The public schools have a decided preference for the humanities. It is therefore advocated in certain responsible quarters and there should be a large financial provision to cover scholarships and grants to attract sufficient scientists to the universities and technical colleges and that the possibilities of extending the universities and setting up new foundations should be explored.

This should serve to indicate the importance that has come to be attached to the role of the university in the national scheme of industrial research and should serve as a lesson to us in India.

RESEARCH TODAY

The outbreak of the present war made new demands on the scientific talent of the country. The Board of Industrial and Scientific Research, created during the last war, was fortunately available to measure up to these demands, whilst the war-time appointment of three scientific advisers to the Ministry of Production has tended to supply whatever deficiencies there might have been in the research organisation. Yet it is stated that there is room for better integration of research with the Supply Ministry. Mr. E. D. Swann proposed on behalf of the executive of the Association of Scientific Workers last year that a Central Scientific and Technical Board with wide executive powers should be established to work in direct contact with the War Cabinet, so as to bring the country's scientific talent into closer relation with the strategy determined by the Cabinet. Authorities like Dr. P. Dunsheath and Dr. H. Moore have commented on the inadequacy of the proportion of the annual turnover now being allocated to co-operative research and have advocated a manifold increase. This serves to show that research is essentially progressive, and its organisation, no matter how perfect at one time, may have to be altered and adjusted from time to time to suit changed sets of conditions.

(c) *Research in America.*—In America, both individual research by companies and co-operative research by trade associations has made great headway in recent years.

Research by private Companies.—Of research organisations maintained by companies, mention may be made, by way of example, of the Bell Telephone Laboratories, Inc., in New York City, which employ some 5,000 to 6,000 research workers on telephonic communication, the laboratories and chemical organisations of E. I. du Pont de Nemours and Co., Wilmington, and the laboratories of the General Motors Corporation at Detroit; and the General Electric Co., at Schenectady.

A number of companies, for example, the Graselli Chemical Company, make grants for research to educational institutions and a number take advantage of the research facilities offered by certain commercial laboratories in the country.

Co-operative Research.—Co-operative research takes many forms in America. Some associations have founded their own laboratories, some sustain fellowships or scholarships in educational institutions, some make use of the laboratories of professional consultants, some take advantage of what is known as the industrial fellowship scheme, nd others co-operate with Government departments and bureaus under the "research associate plan."

Of these various forms of co-operative research, the industrial fellowship scheme and the research associate plan have proved of such great importance as to deserve more than a passing mention here.

The Industrial Fellowship Plan.—The father of the famous industrial fellowship idea was Robert Kennedy Duncan. During his travels in Europe in 1905 and 1906, he observed that in Germany, France, Italy and England, new scientific knowledge was being harnessed to the service of industry and much money spent on intelligent experimentation. Denied the fruits of applied Science, particularly of chemistry, American manufacture was naturally in a state of chaos and confusion, with an endless array of vital problems unsolved.

The example of European countries Duncan visited, inspired the belief that with the aid of the Universities and their laboratories and libraries, the American industry could be drawn out of the doldrums and set on the path to progress. The appointment of Duncan as Professor of Industrial Chemistry at the University of Kansas after his return from Rome in 1906 furnished a suitable opportunity for experimentation with this idea. A company engaged in the manufacture of launderer's materials, which believed that research could discover improvements in the chemistry of laundering and was prepared to pay for such research, provided the practical stimulus. Bringing the University of Kansas to the help of the Company, Duncan created the first industrial fellowship in American history on the basis of an agreement drawn up between the university and the donor company, the Fellow selected being W. F. Faragher, who, later, entered the services of the same company.

The first fellowship achieved such great success as to encourage Duncan to start further fellowships. Soon the number reached ten.

The Mellon Institute.—Further successes awaited the Fellowship plan. Impressed with its possibilities, the famous Andrew W. Mellon and his brother Richard B. Mellon prevailed on Duncan to organise a Department of Industrial Research in Pittsburgh in 1911 with eleven fellowships. In March 1913, came to be established the now famous Mellon Institute of Industrial Research and School of Specific Industries at the university of Pittsburgh, a symbol of co-operation between the factory and the university. If an individual or a company or a group of individuals or of companies wished a problem to be investigated, it would propose its investigation. If the problem was such as to require the services of a whole-time man for not less than a whole year and was not already under investigation, the Institute, subject of course, to limits of accommodation, would accept it for investigation, engage a trained worker and provide him with a laboratory, a machine shop, and secretarial and other assistance. The individual or company interested would contribute the foundation sum of the fellowship and meet all operating expenses. The results of the fellowship belonged exclusively to the donor and could not be published without his consent. The Institute received no financial benefit from any fellowship except the satisfaction that it was furthering the cause of American industry.

The Institute has always looked ahead during the last thirty years of its existence. It is now housed in a new building, modelled on the style of the ancient Grecian architecture, which took many years to plan and six years to construct and was completed in 1937. Combining beauty with utility, and providing the most up-to-date facilities for research in most pleasant surroundings, the building, should enable the Institute to fulfil its purpose even more amply in the future than in the past.

The research spirit has spread to many other states and educational institutions in America. The Battelle Memorial Institute in Columbus, Ohio, founded in the 20's the Purdue Research Foundation at Purdue University, West Lafayette, Ind., incorporated in 1930; the Ohio State University Research Foundation established at Columbus, Ohio in 1936; The Armour Research Foundation incorporated in 1936, and the Institute of Paper Chemistry founded at Appleton, Wisconsin, in 1929, and other research associations symbolise the same spirit as the Mellon Institute.

The Research Associate Plan.—*The Research Associate Plan has its basis in a legislative enactment which makes the scientific and technical research facilities of various Government departments available to duly qualified workers. Associations or specific groups have their research workers employed in these departments to further research on problems of interest to them and the results of the investigations of these research workers or "associates" are made available to the industry concerned.*

Co-operative Agencies.—America has also a number of agencies for the promotion of co-operative research, such as, the National Research Council, which is a general "clearing-house" of research information, and the American Engineering Standards Committee and the American Engineering Council which collaborate with trade associations and individual concerns for the furtherance of research.

Federal Research.—In America, the Federal Government has greatly assisted the progress of research not only through its research associate plan, but also through the direct activities of its own research departments. In 1938, the immediate pre-war year, the Federal Budget showed an expenditure of 57.7 million dollars for different categories of research, the bulk being for natural sciences, engineering, and surveys and mapping.

Federal research in America is organised on a vast scale and embraces varied fields. The Department of Agriculture in America, considered to be the largest single research institution in the world, has done much for agriculture. Fundamental aeronautical research conducted by the National Advisory Committee for Aeronautics at Langley Field, Va., has practically revolutionised concepts of national defence. The geological survey has been responsible for the discovery and exploitation of mineral resources. The Bureau of Agricultural Chemistry and Engineering has done much useful work on farm products, fertiliser resources and agricultural engineering, whilst the Bureau of Dairy Industry of the Department of Agriculture has concerned itself with the development of diverse aspects of dairy products. The Bureau of Plant Industry has been able to make notable improvements in crops and agricultural practices, and that of Entomology and Plant Quarantine has developed improved insecticides for counteracting the damage done by parasites. The Bureau of Fisheries has been of considerable aid to American Fisheries. The National Bureau of Standards, now of international fame has developed new measurements and new standards of ever-increasing accuracy to meet the new demands of industry. The Bureau of Mines aided by regional experiment stations spread over the country has done singularly useful work on mining methods, on treatment of ores and other mineral substances and has successfully grappled with the nation's fuel and metallurgical problems.

(d) *Research in Russia.*—In Russia, organised research has come into its own only during the last twenty years or less. The Russian Academy of Sciences, founded by Peter the Great in the eighteenth century, possessed no constructive programme under the Tsars: it was more of an ornament to add to the pomp and lustre of the State than an instrument of organised research. It was only after the rise of the Bolshevik regime soon after the first World War, that the value of organised research came to be recognised in Russia. The problem that faced the country was one of transition from the agricultural to the industrial stage. In the new world born after the War, agriculture by itself was not enough to secure the economic survival of a nation. A nation had to industrialise or perish.

The new-born Russia applied itself with unequalled vigour to the problems of the time, and incorporating a carefully planned science organisation in the structure of the State, has pressed scientific research fully to the service of industry.

SCIENCE ORGANISATION IN RUSSIA

The main instruments of research in modern Russia are the Council of People's Commissars and the rehabilitated Academy of Sciences, both responsible to the Supreme Council, the highest elective assembly in the Soviet Union.

The Council of People's Commissars supervises the People's Commissariats of Education, Health and Heavy Industry.

The People's Commissariat of Education, as the name signifies, is in charge of education. It sees that a proper scientific bias is given to education. "Pioneer Palaces" or children's clubs, with their science laboratories and their exhibitions help the growth of a scientific outlook in the minds of young students, while, science courses at the schools and the universities and facilities for the conduct of research at the university laboratories in collaboration with the Scientific Research Institute of the Academy of Sciences, complete the scientific training of students and turn out a regular flow of scientific workers for the benefit of the community at large.

On October 3, 1940, a decree signed by President Kalinin introduced a system for the replacement of schools under the control of individual factories and commissariats by Government-controlled schools organised on a national plan. It was not long before a network of industrial technical schools came into existence in Russia, Moscow alone having seventy such schools towards the end of 1942, each specialising in a particular branch of industry.

Offering the attractions of a free education, free uniforms, and three free meals a day and guaranteeing decent employment at the end if a diploma is obtained, these schools have drawn hundreds of thousands of youths, including girls, in their middle teens, and have already provided tens of thousands of qualified workers for war industries.

The People's Commissariat of Health is responsible for medical research, and is in charge of hospitals and medical research institutes.

The People's Commissariat of Heavy Industry is responsible for power, and for metallurgical and electrical industries. It operates through a technical Education Sector, a group of industrial sectors, and a Scientific Research Sector.

The Technical Education Sector is responsible for technical training colleges and research laboratories.

The industrial sectors, responsible for different industries, administer production and distribution through what are known as State Trusts, and maintain research institutes for technical research on problems of general interest. For research on specific problems, each factory is provided with its own laboratory.

The Scientific Research Sector is concerned more with pure or fundamental research than applied research. It controls some of the best research institutes in the Soviet Union, like the Physico Technical Institutes at Leningrad and Kharkov, the Institute of Chemical Physics at Lelingrad and the Karpov Institute of Physical Chemistry at Moscow; it apportions research work to these institutes as well as to the different factory laboratories and co-ordinates their activities in general.

Alive to the possibility of a German invasion and the danger of centralising research in regions relatively easily accessible to the enemy, Russia has also set up research institutes at Dniepropetrovsk and in the remote Ural area.

The Academy of Sciences, now located in Moscow, and interested mainly in natural sciences, sociology and technology, is responsible for the general planning and direction of scientific research and, in the drawing up of the Five-Year Plans in Russia, has been of immense scientific assistance to the supreme, national planning body, which is styled as the State Planning Commission.

INTERNATIONAL STANDARDS OF MEASUREMENTS.

The progress of industrial research in various countries soon brought the realisation that it was essential to have international standards of measurement. Various laboratories and other bodies concerned with standards in various countries came to collaborate, leading to the formation of the Bureau International des Poids et Mesures at Sevres and a number of other international associations, such as the International Electrotechnical Association or the Association for Testing Material.

This brief survey of the growth of organised research in Germany, England, America and Russia should serve to indicate our own vital weakness in this field. According to Professor Bernal, the Soviet expenditure on science is estimated to be 1 per cent of the national income, the United States' expenditure three-tenths of 1 per cent and England's one-tenth.

If the Soviet Union is now able to roll back the Germans like a carpet from occupied Russia, and America and England aided, of course, by the rest of the British Commonwealth, are striking vital blows from the air at the very heart of Germany and freeing Italy from the Axis grip, it is due, in no small, measure, to the cumulative fruits of research, particularly those gathered during the recent years.

RESEARCH TO-DAY AND TO-MORROW.

Research has revolutionised our economic civilisation, particularly during the immediate pre-war and the war years, helping to swing up war production to the maximum with the minimum expenditure of materials, using substitutes for articles in short supply. It has improved radio communications, electric transformers, generators, motors and lighting equipment. It has discovered new applications for aluminium, such as in architecture, in marine construction, in the building of rail-road passenger cars, and in the manufacture of textiles; and found new uses for plain carbon steels and cast irons.

Thanks to research, America is now able to manufacture chemical rubber for petroleum, recover magnesium from sea water, design trans-oceanic planes and think in terms of air trains of gliders.

Looking to the future, research opens up new vistas. Powder metallurgy, spectographic analysis, the ever-improving X-ray technique and the electron microscope, and colour cinematography will yield new wonders in the future. And, as Charles M. A. Stine, Vice-President, E. I. du Pont de Nemours & Co., writes in an article, "Molders of a Better Destiny", published in the journal, *Mining and Metallurgy*, December 1942: "We will have unbreakable glass and, glass that will float, wood that won't burn, and lamination of plastics and wood that will compete with the structural metals. Hosiery derived from air, water, and coal, a wonder of pre-war days, is but the fore-runner of many innovations from the same source, ranging from shoes that contain no leather and window screens that contain no wire, to machinery bearings that contain no metal".

Science has revolutionised not only the various industrial processes, but also our managerial concept. As stated in editorial comments on Dr. Dunsheath's Atkinson Memorial Lecture, in the magazine, *Chemical Age*, dated, the 27th March, 1943: "Rightly or wrongly we are coming to the conclusion that the control of business by commercial man is obsolete and will pass. . . . . While financial skill is necessary for the sound operation of business, control should be vested in technically trained men. In our opinion, this would be the greatest single step towards making the fullest use of science in industry".

WHITHER INDIA?

Where is India in this world of progress? We are not able to manufacture aircraft or automobiles. A proper ship-building industry is still unknown. Our requirements of heavy machinery have to be supplied from abroad and we are content to utilise the great reservoir of scientific talent that exists in the country for the purpose of maintenance and operation of machines designed and constructed in foreign countries. What heightens the sense of tragedy is the fact that a country so unusually rich in natural resources as India should be so backward in industrial development.

It is often urged that the War has filled many gaps in India's industrial structure. The statement is misleading. The gaps filled are relatively few and, by no means, of great importance: the major gaps are still unfilled. Even Australia and Canada have been able to accomplish much more in the industrial field than India and are now several paces ahead of us.

We have heard of long-range programmes of economic development for India, covering a whole range of large, medium and small-scale industries. But unless the magic wand of research can touch the country's raw material resources, no major industrial advancement is possible. And what facilities have we for research as compared with the countries of the West?

There are no national laboratories for physical, metallurgical, fuel, glass or cement research, no organisation for the promotion of co-operative research among relatively small concerns, no bureau of standards and measurements, no proper liaison between industry and the universities.

There can be no doubt to-day that if India is to survive in the post-war world of progress and competition, in which there will be more of international co-operation and less of national tariff protection, and efficiency will be the main criterion of success, we must draw up a blue-print of what our research organisation should be after the war, and do so now. There is no time to be lost.

RESEARCH ORGANISATION FOR INDIA.

To my mind, national research must be planned on national lines in order to prevent clashes of sectional interests, territorial and occupational, and obviate unnecessary over-lapping of work and the consequent waste of money and effort. It must be adjusted to the economic structure of the country and not be a blind repetition of some foreign model. The Government, the University and Industry, each must be assigned distinct research functions, though all three must work in close collaboration towards the same end. The changes necessary, in my opinion, to ensure proper progress of research in India will be indicated in the succeeding paragraphs.

THE ROLE OF GOVERNMENT.

The existing Board of Scientific and Industrial Research in this country has come in for much criticism, particularly of late. It is said to be a defective imitation of the Department of Scientific and Industrial Research in England. Some critics have gone so far as even to suggest that it should be disbanded and replaced by an entirely new department constituted on exactly the same basis as the British model. I for one feel that this is going too far. The Board has proved its usefulness though I must admit, on a very limited scale, and there is no reason why, with certain changes in its composition and a better classification of the functions of its constituent bodies, as indicated later, it should not be able to fulfil its purpose.

The main constituent bodies of the existing department are a Council of Scientific and Industrial Research, a Board of Scientific and Industrial Research and an Industrial Research Utilisation Committee.

The Council of Scientific and Industrial Research which is the supreme body should correspond in its functions to the Committee of the Privy Council for Scientific and Industrial Research in Great Britain and consist of prominent industrialists, economists and scientists, and be presided over by an appropriate member of Viceroy's Council.

Its main function should be to lay down broad principles of policy for the guidance of the technically subservient bodies, co-ordinate their activities and receive financial grants from Government.

Of the other two constituent bodies, the Board should concern itself largely with science and the Committee largely with industry, or rather, with the industrial application of scientific research, both working in close collaboration, under the general guidance of the supreme Council.

In order to enable the Board to discharge its scientific functions properly, it will be essential to select, preferably in consultation with the leading scientific societies and academies in the country, representatives of all branches of science and include them as members, except in branches already covered by the existing membership. Bureaucratic control must be removed and research de-politicised, if it is to fulfil its purpose.

The broad functions of the Board, as I visualise, then should be:

(*a*) To plan national, scientific and industrial research in collaboration with the Industrial Research Utilisation Committee under the general direction of the parent council;

(*b*) To develop facilities for the execution of the national research programme, by setting up national laboratories for chemical, metallurgical and physical, fuel, food and other types of research, institutes and laboratories, introducing and encouraging the American fellowship plan in the country, etc., for this purpose;

(*c*) To apportion research schemes to its own and private and university laboratories;

(*d*) To control, supervise and co-ordinate scientific research activities as well as technological education in the country, thus ensuring proper collaboration between Government, industry and science;

(*e*) To distribute grants to research institutes and individual research workers, when necessary; and

(*f*) To formulate and submit its general recommendations annually to the parent council for approval.

The Board should continue to operate, as at present, through a number of research committees, each committee being in charge of research in a particular branch of science. Eash branch should have a director, who may be attached to a particular institute, but should work as secretary of the research committee covering that particular branch, so that the research committee on the one hand and the scientific institutes on the other may work in close collaboration under the general supervision and control of the Board.

To illustrate the general functions of these committees, I shall take the example of metallurgical research.

The metallurgical committee will collect statistics relating to the metallurgical possibilities of the country; plan metallurgical research Board; assume responsibility for the design, construction, manning and supervision of a national metallurgical laboratory; examine the suitability in practice of metallurgical schemes that may be referred to it by the Board for opinion or put up by universities or individual scientists.

The committee should also gather and possess information about the various laboratory facilities available for metallurgical research in the country, the type of research work already in progress, and the qualification of various research workers; and on the basis of this information, apportion research schemes to different laboratories and scientific societies, and provide the necessary funds for the prosecution of research.

The other committees will function along similar lines in their respective branches of research.

The Industrial Research Utilisation Committee should consist largely of industrialists and economists under the chairmanship of a non-official industrialist. The Director of a Commercial Statistics and Intelligence and the Economic Adviser to the Government of India should collaborate as members of the Committee.

I think the Committee should be more than a mere research utilisation committee. It should be proper Industrial Committee with much wider functions. It should co-operate with the Board in the formulation of a national research programme suited to the industrial resources and the economic conditions of the country, under the general direction of the parent council, the Research Utilisation Committee furnishing the industrial basis and the Board the scientific basis for the programme; devise methods for the industrial and commercial utilisation of researches completed by the Board; and formulate rules concerning the taking of patents and collection and distribution of royalties to facilitate the utilisation of scientific researches by industry.

This Committee will also operate through a chain of industrial committees, which, like the research committees, will cover the

different groups of industries, collect industrial data, and advise on various industrial problems, both old and new.

The Board of Scientific and Industrial Research should also make its own laboratory facilities availble to duly qualified workers and allow industries to have their own research workers employed in these laboratories to conduct research on specific problems on the lines of the American Research Associate Plan.

THE ROLE OF SCIENCE ITSELF

At present, there is no proper co-ordination between the existing scientific institutes in the country, so that there is every possibility of unnecessary duplication of work and waste of scientific energy. I think there should be a supreme academy of sciences, as in the U. S. S. R., composed of representatives of private research associations and academies and eminent scientists drawn from the ranks of university science professors and lecturers.

Such an academy should collaborate with the Board of Scientific and Industrial Research in the general planning and direction of scientific research in the country, and also, provide, the Board with some of its new members and act as a link between it and the various scientific societies.

THE ROLE OF THE UNIVERSITIES

I am aware that most Indian Universities today provide for the teaching of mechanical and electrical engineering courses, and the Benares Hindu University includes mining and metallurgy also, and the School of Mines at Dhanbad provides special facilities for education in mining and geology. But the teaching of science in our universities is not properly related to the needs of industry and is, in consequence, more academic and less practical. It is limited in scope and does not cover, or inadequately covers, many of the new branches of engineering essential to industry. Besides, science does not attract a sufficient number of students to meet the requirements of the country.

The first essential appears to be that the Universities should be provided with funds by the Board of Scientific and Industrial Research and the public, in order to enable them to add to their science curricula, improve their laboratory facilities and engage additional staff, wherever necessary.

The same Board should also provide sufficient scholarships for post-graduate research, so that it may be possible to utilise the growing reservoir of graduates possessing a natural aptitude for assuring industry of a growing supply of trained scientists.

It is further suggested that the last stages of education of science students include a study of subjects like economics, law, and sociology in general, so that they may be able to wield not only scientific or technical posts in later life, but also administrative posts, requiring qualities of leadership and general business ability.

Also, the Universities should give facilities to industries to set up university fellowships for the purpose of investigations into specific problems of practical interest to industries and arrange with industrial companies and the railways for the practical training of its science students in factories and workshops during vacations.

Another type of education on which inadequate stress has been laid in the past is technological training. Facilities for such training should be provided on an adequate scale under the aegis of the provincial departments of industries, as a necessary preliminary to practical training in a workshop.

If a proper scientific outlook is initially developed in the school stage and finished off in the university stage, we shall be assured of a regular stream of scientific leaders not only for the universities but also for other research organisations in the country.

THE ROLE OF INDUSTRY

If it has not been possible for Government to promote industrial development on a scale commensurate with the needs of the country, we must look to private enterprise more and more to fill the gaps in our industrial structure. This can be accomplished only through research.

Relatively large companies can set up research laboratories of their own, as the Tata Iron & Steel Company has done at Jamshedpur. Smaller concerns can form trade associations in particular fields of industry as in England and America, and set up common laboratories of their own for co-operative research for their mutual benefit.

Also, there is no reason why industry should not introduce and stimulate the growth of an industrial fellowship plan on the American model.

To my mind, the fellowship plan holds vast possibilities. It will encourage the universities to become more and more practical, add new science courses to their curricula, improve their science laboratories and staff, so that they may be able to cope with the growing demand for industrial research. It will benefit industry also by bringing the universities to its aid. Industrial concerns unable to afford the expenses of private laboratories of their own will be able to avail of research facilities at the universities at a relatively small cost.

Besides, the plan will enable promising scientists to get established in life and encourage youth to take up science in the future in much larger numbers than at present.

Financial considerations should not be allowed to prevent the expansion of research facilities at the universities, if the fellowship plan is to be a success. Government, industry and private individual should be able to provide the necessary funds for this purpose.

It will be agreed that research can be of little value unless its results find practical application. This brings the average factory worker into the picture.

Means must be devised to educate him in the relatively elementary principles of science so that he may be in a position to apply the results of research to the working processes of industry. He cannot be expected to join a technological institute or college on a whole-time basis, nor has he the necessary equipment for university training. He must stay at his work in order to earn his living and yet receive his education in science. The answer appears to be part-time evening technical instruction at a technical night school, or, as some would prefer, part-time day instruction with evenings devoted to independent study of a wider nature, under careful guidance. There is no reason why part-time technical schools close to industrial workshops should not be set up in all industrial areas. It is a necessary step to ensure the day-to-day application of research to industry.

PRESS AND PUBLICITY

Research, pure or applied, cannot be said to fulfil its purpose, unless its results are interpreted to the community. At present, such results are published in the form of articles and reports only in a limited number of technical periodicals. The daily press, which reaches the masses and moulds public opinion crams its columns largely with sports news and sensational events, devoting little space to scientific intelligence. If a scientific article does happen to be included, it is, as a rule, not properly edited, as most editors are non-scientific men who have confined themselves to arts studies.

In the future, in order to make the public science-conscious and create the correct environment for the development of scientific research, it will be essential to use the daily press more and more as an organ for the dissemination of science knowledge. The technical articles will have to be written in terse and lucid prose employing rhetoric, if necessary, to appeal to the popular mind. The editorial staff of the papers will have to include scientists, to ensure proper editing of these articles.

Also, there should be a Scientific News Agency, just as we have "Reuters" for general news, and its function should be to provide scientific news in readable language for publication in the daily press for the benefit both of grown-ups and children. The subject matter and style should be adapted to the needs of children, if it is for the "Children's Corner"; for adults, it may be a little advanced, but, in no case, above the head of the man-in-the-street.

In addition to the printed word, we should utilise exhibitions, the film and the radio as media of popular publicity. In fact, no possible medium should be left unexploited.

SUMMARY AND CONCLUSION

To summarise my proposals; The existing Board of Scientific and Industrial Research should be retained, but its membership should include a larger number of scientists than at present, so as to cover all branches of science, and the functions of the constituent bodies of the department should be slightly re-classified to prevent over-lapping. The official scientific services should be autonomous in their daily operation, but should co-operate with the above-mentioned department of research. A supreme National Academy of Sciences representing the existing scientific societies should be brought into existence to co-ordinate the work of the various scientific societies and co-operate with the Board of Scientific and Industrial Research in general scientific direction. Provision has also been made for bringing industry into contact with science, and both, into contact with Government, and some indication given of the media of publicity that can be usefully exploited.

Many years ago, Andrew W. Mellon wrote: "It is science, not Government, nor wars of conquest that opens to us new horizons." Never were these words so true as to-day. It is research, and nothing else, that can develop our industries and improve our agriculture. It is research, and nothing else, that can bring us wealth and prosperity in this age of competitive efficiency. Today, research is progress, research is life.

INDUSTRIAL PROGRESS OF BARODA STATE

Baroda State is industrially one of the most advanced regions in India and as regards the level of industrial development the State can well stand comparison with the British Indian Provinces and other progressive Indian States. The position attained by the State in this respect has been achieved by a steady process of industrialisation during the last fifty years as a result of the systematic policy of industrial development which has been followed by the State.

The number of workers engaged in factories during the year 1940-41, 1941-42 and 1942-43 was 41,104, 41,079 and 43,088 respectively.

Industrial Progress in Recent Years.

The rate of progress in the State's industrial expansion during the last 12 years is really remarkable. The number of operatives employed in the State has more than doubled itself in increasing from 17,000 in 1927 to 43,088 in 1942-43. Together with these figures a brief account of the expansion in some of the major industries in the State in recent years, will give a better idea of such expansion.

Textile Industry.

In the textile industry, the number of mills in the State increased from 14 in 1932-33 to 18 in 1942-43. During this period, the capital invested increased from Rs. 1,95,03,994 to Rs. 4,06,65,833 respectively. The number of looms increased from 4,284 to 6,932 and the quantity of yarn produced increased from 231 lakhs lbs. to 431 lakhs lbs. As during this period there has been a tendency to produce more and more yarn of finer counts, the actual progress would be much greater if we considered the value of the yarn produced.

Cement Industry.

The Cement Factory at Dwarka has made a remarkable progress which is comparable to the growth of the textile industry in the State.

Chemical Industry.

Perhaps the most notable industry in the State is the Chemical Industry. The Alembic Chemical Works Ltd., is one of the biggest Chemical Works in India and the increase in its sales from Rs. 6 lakhs in 1927 to Rs. 16 lakhs in 1940-41, indicates the progress the Company is making The starting of heavy chemical industry at Mithapur will constitute an important landmark in the history of industrial development of the State.

The Tata Chemicals Ltd.

This company started in the year 1939 has made considerable progress. Necessary buildings, process house, sheds, godowns, roads, etc., are being put up, and machinery is erected. The chemical plants for the production of liquid Chlorine, Caustic Soda, Bleaching powder, Zinc Chloride, Potassium Bromide commenced working in April 1943. The work of the Soda Ash plant will be completed as soon as possible. The manufacture of salt and its bye-products was continued.

The Hindusthan Colour, Chemicals and Mfg. Co., Ltd., Kathwada.

It is organised with an authorised capital of Rs. 50,00,000. The concern is already manufacturing modified starches, ultra marine blue and has a programme to undertake manufacture of Paris Green, etc.

The Pankaj Products, Baroda and The National Chemical and Pharmaceutical Works, Navsari are two small concerns manufacturing textile and other chemicals.

The Vishnu Industrial Works manufacture white paint and Paris Green on a small scale, as also malaria oil and other disinfectants, mosquito coils, textile soaps, insecticides, etc.

The Petlad Turkey Red Dye Works, Petlad.

They have a plant for the manufacture of sulphuric acid with a capacity of about one ton per day.

The Hira Chemical Works at Baroda.

They also manufacture Sulphuric, Hydrochloric and Nitric Acids. Their capacity is 1½ ton per day.

Match Industry.

There is only match factory at present in the State, viz. the Match Factory at Petlad.

Oil Industry.

The Baroda State is an important oil seeds producing area and there is good scope for the development of oil-crushing industry. The total number of oil mills increased from 5 in 1929 to 13 in 1942-43. During the same period the value of output increased from about Rs. 7 lakhs to Rs. 15 lakhs.

Straw Boards Factory.

A straw boards factory has been recently started by an industrialist at Antalia near Bilimora.

Dry Cell Batteries.

A factory for the manufacture of dry cells and batteries has recently been started near Goyagate, Baroda.

Surgical Instruments Factory.

Government have granted certain concessions to an industrialist for starting a surgical instruments factory at Bilimora.

Miscellaneous Industries.

As regards miscellaneous industries mention may be made of the China Clay Works at Ransipur which commenced operations in 1934-35. The quantity of China Clay recovered and refined increased from about 280 tons in 1935-56 to 910 tons in 1941-42.

A new concern has also been started at Vijapur for crushing and refining coloured earths and refining chalks.

Enamel Industry.

The Vijay Enamel and Metal Works Ltd. at Goyagate is manufacturing Gabhel Gas and enamelwares, signboards, etc. Sheet enamelling is also done on a large scale.

The Gujarat Rubber Works Ltd., Baroda.

The factory undertakes the manufacture of rubber and ebonite articles like rollers used in textile and sugar mills, and stoppers, corks, ground sheets from brass and other metal scrape.

The Bharat Rolling Mills.

Messrs. N. Jivanlal & Co. of Bombay have constructed a rolling mill in Baroda. It manufactures bars and sheets from brass and other metal scrape.

In the last few years, four power loom factories have been established in the State which are weaving artificial silk yarn wholly or partly. Another important industry which has been developed in the last few years is the wood work factory at Navsari which is manufacturing bobbins, hanks and other textile equipment. In two years, its output in value has reached Rs. 2 lakhs a year and it is able to sell its products in Bombay, Ahmedabad, and Calcutta as also in the State.

Prospects for Developing New Industries.

There are also very good prospects for starting the following new industries:—

(1) Paper Industry.
(2) Cigarette manufacture.
(3) Wood work factories.
(4 Oil and allied industries.
(6) Manufacture of electric bulbs.
(7) Plastics industry.
(8) Biscuit manufacture.
(9) Marble, granite and flooring tiles industries.

New Industries Started or Likely to be Started Owing to War.

The present war has given impetus to establishment of many new enterprises of which special mention may be made of the following:—

(1) The New Great Insurance Co
(2) A Chemical & Pharmaceutical Works by Messrs. Karamchand Premchand Ltd., Ahmedabad.
(3) Messrs. The Jyoti Ltd. (Sister concern of the Alembic Chemical Works Co., Ltd., Baroda).
(4) The Baroda Batteries Ltd., Baroda.
(5) The Surgical Instruments Factory at Bilimora.
(6) A factory at Bilimora for manufacture of strawboards and paper products.
(7) Several Bobbin Factories in the various parts of the State.

Chemical and Pharmaceutical Works at Vadi Vadi.

Messrs. Karamchand Premchand Ltd. of Ahmedabad intend to start a Chemical and Pharmaceutical Works at Vadi Vadi in Baroda on a large scale.

Distilleries.

Government have granted permission to start distilleries to the following parties in the State:—

(1) Messrs. T. M. Thakore & Co., Bilimora.
(2) Messrs. D. Gordhandas & Co., Dabhoi.
(3) Messrs. Vithaldas Makanji & Sons, Navsari.
(4) Mr. Phirozshah P. Contractor, Baroda.

Out of these Messrs. D. Gordhandas & Co., Dabhoi have already started working.

Scientific Investigations and Experiments.

One of the important functions of all investigations and experiments of a State is to carry out scientific experiments for the industrial development thereof and the utilization of raw materials, minerals and other resources therein.

In recent years, the work of carrying out scientific investigation has been given a new impetus by the establishment of the Technological Laboratory in the Science Institute which has been started in commemoration of the Diamond Jubilee of His late Highness Maharaja Sir Sayaji Rao. Similarly, the Industries Board which was established in 1937 has been carrying out several experiments to investigate the possibilities of starting new industries in the State. The following experiments have been either completed or are being carried out during the last three years:—

(1) Manufacture of ultramarine.
(2) Manufacture of Dry Cell Batteries.
(3) Manufacture of Lime washes.
(4) Manufacture of Lime juice and wine.
(5) Manufacture of Oil and fruit jellies.
(6) Experiment regarding uses of lac.
(7) Experiment regarding manufacture of inks.
(8) Experiment regarding the polimerisation and sulphonisation of vegetable oils.

Financial Assistance to Industries.

One of the most important features of the policy of the Baroda Goverament is the grant of financial assistance to industries.

During the period between 1931 and 1940 loans to the extent of Rs. 6,39,500 were granted to 45 concerns.

Development of Cottage Industries.

Many important measures have been taken in recent years for developing cottage industries in the State. The establishment of Diamond Jubilee Cottage Industries Institute and a Sales Depot is a special significance not only because of its great value as an institution for training in various cottage industries but also because it indicates a new orientation of the policy of the Government for developing cottage industries. New training classes for developing the leather goods industry, the metal industry and metal and wood engraving industry have been opened in the Cottage Industries Institute and a leather class has also been started at Ladol in Vijapur Taluka. The number of training centres for improved methods of tanning and the number of students receiving training have increased from 31 in 1937-38 to 122 in 1940-41. Two centres have also been started for introducing sericulture as a cottage industry in the State. A demonstrator was also appointed for introducing improved Wardha Ghancess in the place of ordinary country ghanees for oil seeds crushing. Proposals for starting additional classes for imparting training in cutlery, smithy, gota-weaving as in Bangalore and Surat are sanctioned by Government. Two handmade paper factories were started at Vyara and Navsari recently.

As regards development of the handloom weaving industry, not only new designs are being introduced, but new kinds of cloth as table covers, curtains, and other household textile materials are making efforts to introduce cotton carpets weaving industry on handloom. One of the most satisfactory developments in the last few years is the expansion with the good help of the production of Khadi, particularly in the Amreli and Navsari Districts. Chalala is now the biggest khadi producing centre in Gujrat and Kathiawar and in two years the production and sale of khadi has increased from Rs. 6,000 to Rs. 30,000 a year. Within a year or two it will reach the stage of development comparable to that of the well-known Badanwal Khadi Centre in Mysore State, which has an output of Rs. 50,000 a year. Similarly the Charmalaya at, Tarvada is fast becoming a first class centre for tanning and leather industries.

Loans for Cottage Industries.

The Baroda Government has also sanctioned an amount to grant loans free of interest to various cottage industries like tanning, weaving, kitting, calico printing, block-making, laquer work, metal casting, etc.

From what has been said above, it is clear that the Baroda State is pursuing a comprehensive policy for developing cottage industries by introducing improved methods of production and imparting training in them, by giving adequate financial assistance for bringing implements and raw materials, by adopting a judicious policy of granting financial help to institutions engaged in promoting cottage industries, by providing facilities for marketing the products through the Sales Depot in the Cottage Industries Institute and also through exhibitions, etc.

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A PLAN OF ECONOMIC DEVELOPMENT FOR INDIA*

INTRODUCTORY

This memorandum presents in brief outline a plan of economic development for India. The plan set out in it is not in any sense a complete scheme. Our object is merely to put forward, as a basis of discussion, a statement, in as concrete a form as possible, of the objectives to be kept in mind in economic planning in India, the general lines on which development should proceed and the demands which planning is likely to make on the country's resources. It contains no reference to such essential matters as the organisation methods and technique required for carrying out a plan. For instance, neither the problem of distribution, which is vital to any scheme for raising the standard of living, nor the allied question of the control to be exercised by the state over economic activities are discussed in it. These matters, the importance of which is fully present to our minds, are at present under examination by us. The results of this examination will form the subject of a separate report which we hope to issue at an early date. Meanwhile, in view of the prevailing interest in problems relating to post-war economic development in India, we have thought it desirable to publish in advance our views regarding some of the more fundamental aspects of planning so as to stimulate discussion and criticism of our proposals before our investigations of other aspects of planning are completed.

2. Underlying our whole scheme is the assumption that on the termination of the war or shortly thereafter, a national government will come into existence at the centre which will be vested with full freedom in economic matters. The maintenance of the economic unity of India being, in our view, an essential condition of any effective planning, we have assumed for the purpose of our plan that the future government of India will be constituted on a federal basis and that the jurisdiction of the central government in economic matters will extend over the whole of India. We should, however, explain that this does not preclude the possibility of a regional grouping of provinces and States as an intermediate link in a federal organization. Such regional grouping will not disturb the economic unity of India, provided that, in important matters affecting economic development, the authority of the central government is not impaired. We draw attention to this aspect of the problem because we think that no development of the kind we have proposed will be feasible except on the basis of a central directing authority which enjoys sufficient popular support and possesses the requisite powers and jurisdiction.

3. We contemplate that under the central government there will be a national planning committee in which the various interests concerned will be represented and to which the responsibility for drawing up plans will be delegated. The actual execution of the plans will be the function of a supreme economic council working alongside the national planning committee under the authority of the central government. The co-ordination of the duties assigned to these two committees and their relation to the various provincial and regional governments will be among the most important problems that will arise in connection with the constitutional aspect of our proposals.

4. The principal objective of our plan is to bring about a doubling of the present per capita income within a period of fifteen years from the time that the plan comes into operation. Allowing for an increase in population of 5 million per annum, which is the rate disclosed by the last decennial census, we estimate that a doubling of the per capita income within a period of fifteen years will necessitate a trebling of the present aggregate national income. To achieve this increase, we propose that the plan should be so organised as to raise the net output of agriculture to a little over twice the present figure and that of industry, including both large and small industries, to approximately five times the present output. This would still leave our economy mainly agricultural in the sense that the greater part of the population would continue to be engaged in agriculture and allied occupations although the present preponderance of agriculture would be considerably reduced.

5. It is an important part of our proposals regarding industrial development that in the initial stages attention should be directed primarily to the creation of industries for the production of power and capital goods. Nothing has more seriously hindered the development of India's industrial resources during the war than the absence of these basic industries and we consider it essential that this lack should be remedied in as short a time as possible. Apart from its importance as a means of quickening the pace of industrial development in India, it will have the effect of ultimately reducing our requirements of external finance. The proposal, however, is subject to this important qualification that provision should be made at the same time for the manufacture within the country of the most essential classes of consumption goods, as otherwise a great deal of unnecessary hardship may be caused during the planning period. We suggest that, in the production of these essential consumption goods, the fullest possible use should be made of small scale and cottage industries. This will, besides providing employment, reduce the need for purchasing expensive plant and machinery.

6. We are well aware of the difficulties which may stand in the way of our objective being attained within so short a period. The execution of the plan will run counter to many deep-seated prejudices and traditions. In the initial stages it will call for a very large measure of personal discomfort and sacrifice. Political differences may make it difficult to set up the necessary constitutional machinery. The international situation after the war may be such as not to permit of the orderly continuance of constructive activities on this scale. If difficulties of this character supervene, the progress of the plan will be materially hampered. Nevertheless, we think that it is worthwhile placing before the country a plan which, given favourable conditions, can be realised. The difficulties we have indicated may delay the scheme but will not necessarily make it possible of achievement. We have some hope that if the programme we have put forward makes an appeal to the country, that by itself will help in some measure towards securing the conditions necessary for its fulfilment. It may be pointed out that the fifteen-year period we have suggested is intended to cover only the execution of the plan and does not include the time required for the necessary preparatory work, which may take about three to five years. Once the machinery required for executing the plan is properly organized and given sufficient courage and energy in those responsible for carrying it out we do not think that the attainment of our objective within the period indicated is an extravagant hope.

7. The estimates of capital expenditure contained in the memorandum are of such colossal dimensions that the whole scheme may appear impracticable to people whose minds are still dominated by orthodox financial concepts. In matters of this kind, the war has been a great educator. Lord Wavell, in a recent speech in London, remarked: "It has always seemed to me a curious fact that money is forthcoming in any quantity for a war, but that no nation has ever yet produced the money on the same scale to fight the evils of peace—poverty, lack of education, unemployment, ill-health". The answer to this question, which has puzzled many an inquiring mind since the commencement of the war, is that money or finance is not the master of a country's economy but its servant and instrument. The real capital of a country consists of its resources in materials and man-power and money is simply a means of mobiling these resources and canalising them into specific forms of activity. Looking at the problem from this angle, we are convinced that the capital expenditure proposed under our scheme is well within the limits of our resources and that, from a business point of view, such expenditure will constitute a sound and profitable investment for the country.

8. With regard to the several estimates of expenditure, production and income contained in the memorandum, it is necessary to explain that, in view of the inadequate data on which many of them are based, they are to be regarded merely as rough approximations and their value as more illustrative than absolute. Further, although most of the estimates are stated in terms of money, it is the quantum of commodities and services they represent that we have primarily in view. Money is used throughout as a measuring rod only; and in order to keep the measure uniform, we have based all money figures on the rupee at approximately the average price level which prevailed during the period 1931-39.

REQUIREMENTS OF A MINIMUM STANDARD

9. The ultimate objective of any planning should be to increase the volume of India's economic production to the fullest extent which its natural resources would allow. The plan we propose, however, is limited to a period of 15 years and has the modest aim of securing a general standard of living which would leave a reasonable margin over the minimum requirements of human life. In order to give some idea of the standard of living at which we aim, we propose in this section to define in concrete terms what, in our opinion, are the minimum requirements of human life under existing conditions in

*By Sir Purshotamdas Thakurdas, J. R. D. Tata, G. D. Birla, Sir Ardeshir Dalal, Sir Shri Ram, Kasturbhai Lalbhai, A. D. Shroff and John Matthai.



Dhotis are terribly expensive now, aren't they ? But, soon it will become difficult to buy dhoti at all so acute is the shortage of cloth growing daily. So, do take every possible care of the dhotis you are wearing now. How ? Well, to make your dhoti last longer we would advise you to sacrifice the beauty of your trailing KONCHA to a great extent—it is so easy to step on it and tear your dhoti. Besides, unless you shorten your KONCHA or tuck it up—it will gather so much dust that your dhoti will need frequent laundering. And what can shorten the life of your dhoti more than the treatment meted to it by the dhobi—boiling in harsh caustics and beating on stone ! Then, if you do tear your dhoti induce your wife or sister to darn it at once and add a new lease of life to it. Of course, when the war is over you will be able to buy as many dhotis as often as you choose to. But in the meantime do shorten your KONCHA and KACHA !

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ndia. These include, besides the physiological necessities of life like food, clothing and nelter, also some provision for medical reef and education. In a later section we shall iscuss what further provision is required for reasonable standard of living such as we im at and on what lines a plan for securing his should be framed.

10. Although India is an agricultural ountry, a large proportion of its population oes not get enough food to eat. A still larer proportion fails to obtain the right kind f food. Studies made by nutrition experts uggest that a well-balanced nutritive diet or an adult person in India should be as llows:

Ounces per day per adult.

Cereals ..	16	Fruits ..	2
Pulses ..	3	Fats and oils ..	1.5
Sugar ..	2	Whole milk .. *or* Meat, fish and eggs ..	8 2.8
Vegetables ..	6		

11. The energy value of this diet is 2,600 alories. Making allowance for some wastge in the kitchen and at the table, the per apita requirements of a balanced diet in ndia would amount to about 2,800 calories er day. The available supplies of food, even f they are equitably distributed, would, however, fall short of this by a large margin. o secure a balanced-diet for our population, considerable increase in our food production would therefore be necessary. It is estinated that at pre-war prices the cost of a alanced nutritive diet of the type mentiond above would be approximately Rs. 65 per nnum for a growing adult and very little ess for a growing child. At this rate an anual expenditure of Rs. 2,100 crores would e required to keep our existing population, 89 million, well-nourished.

12. Next to food comes clothing, considerd in its ulilitarian rather than social aspect. he quality of cloth required differs according to the climatic conditions of the country, the habits and manners of living of the opulation and its income. Conditions in hese respects differ widely in the different arts of India and it is therefore difficult to ix any particular standard for the country s a whole. On the basis of consumption in ther countries it is, however, possible to arive at a rough standard. At the peak level f textile output, which was reached in 928-29, the average per capita consumption f textiles, consumed largely in personal and ousehold uses, amounted to 42 yards for the vorld as a whole. For some of the individual countries for which comparable data are vailable, the consumption of cotton textiles lone was as follows.

Consumption of cotton piecegoods per capita in 1929 (in yards).*

U. S. A. ..	64.0†	Japan ..	21.4
Canada ..	37.7	Egypt ..	19.1
Sweden ..	36.0	Brazil ..	18.9
Germany ..	34.0	Iraq ..	16.9
Malaya ..	30.6	India ..	16.1
Denmark ..	30.0	Greece ..	15.0

13. In the light of these figures, the estinate made by the National Planning Committee of the minimum requirements of clothng in India *viz.* 30 yards per person may e regarded as reasonable. To reach this norm, India would require on the basis of the 1941 population figure 11,670 million yards of cloth and its cost at the rate of 3½ annas a yard would amount to Rs. 255 crores.

14. Adequate shelter against sun and rain and against the inclemencies of weather is yet another of the essential primary needs of human life. On the basis that a person should have about 3,000 cubic feet of fresh air per hour, the accommodation required would be about 100 square feet of house room per person.‡ The quality of houses required, however, depends to a large extent on social traditions far more than on physical needs. "The house is not only a shelter from the weather and a place for preparing food and sleeping; it is also a centre of a complicated social ritual." The figure we have taken is the minimum determined by physical needs alone. The number of houses in India according to the 1941 census is 76 million : 10 million in towns and 66 million in villages. The number of persons per house, which was 5 in 1931, increased to 5.1 in 1941. It is not possible to indicate the average housing space available per person although the information regarding industrial cities shows the existence of overcrowding of an extreme type. In the Bombay province, for example, the average floor space per person in industrial areas was 27.58 square feet in Bombay, 43.04 square feet in Ahmedabad and 24.03 square fet in Sholapur in 1938.

15. If we are to provide 100 square feet of house room per person, which has been mentioned above as the minimum needed, the average house should have an area of at least 500 square feet so that it can accommodate 5 persons. In rural areas the cost of building such a house is assumed to be in the neighbourhood of Rs. 400 and in urban areas twice as much. In order that housing may come up to the standard we have laid down, fairly large proportion of the existing houses both in rural and urban areas should be rebuilt and substantial provision should also be made for new houses. On a rough estimate, the total expenditure required for this would be about Rs. 1,400 crores. At 7½ per cent of the total capital expenditure including the value of existing housing, the yearly cost of maintenance woul be Rs. 258 crores.

16. If the house is to serve its purpose also as a social centre, in addition to providing accommodation, it must conform to certain standards regarding site, type, ventilation, lighting, heating, waste disposal, water supply etc. But these standards will vary according to a number of factors like climatic conditions, availability of land, traditions etc. and will have to be fixed to suit local conditions.

17. Apart from meeting the physiological needs of life mentioned above, an important aspect of the minimum standard of living which we wish to lay down for India is that every individual should be able to maintain a reasonable standard of health. At present the general standard of health in this country is admittedly poor. The following figures would give some idea :

	Birth and death rate per 1,000.		Infant mortality: deaths under one year per 1,000 live births.	Expectation of life: (years).	
	Birth.	Death.		Male.	Female.
Canada ..	20.3	9.6	61	58.96	60.73
U. S. A ..	17.3	10.6	DR	60.60	64.50
Germany ..	20.3	12.3	60	59.86	62.81
U. K. ..	15.3	12.2	53	60.18	62.81
Australia ..	17.7	9.9	38	63.48	67.14
Japan ..	27.0	17.6	114	46.92	49.63
India ..	33.0	21.8	167	26.91	26.56

18. Satisfaction of the primary needs of life would go a long way toward attaining a reasonable standard of health for our population but measures specially directed towards this purpose would be essential. These broadly fall into two categories : (*i*) preventive measures like sanitation, water-supply, vaccination and anti-epidemic precautions, maternity and child welfare etc., and (*ii*) curative measures like the provision of adequate medical facilities.

19. Such preventive measures as have been adopted so far have touched but the fringe of the problem. Only in respect of vaccination against small-pox has some progress been made but the number of deaths due to this disease still continues to be large. The average figure for the quinquennium 1935-39 was 67,130 in British India alone. "The fact that vaccination and re-vaccination should eliminate the disease altogether emphasises the importance of making further efforts for the effective immunization of the people."§ In respect of water supply it is known that out of the 1,471 towns in British India in 1939, only 253 towns with a population of 13 million had protected water supplies and the position of conservancy and sanitation was no better. In rural areas the position is still worse. Provision for maternity and child welfare work both in urban and rural areas is extremely inadequate. The fact that more than 50 per cent of the deaths that occurred in 1939 were among those who come within the scope of maternity and child welfare services fully bears this out.

20. So far as medical facilities are concerned, in 1939 there were about 7,300 hospitals and dispensaries in British India with provision for about 74,000 beds. The average population served by each hospital and dispensary works out to about 41,000 and the proportion of population per bed is 4,000. The number of doctors and nurses in India is 42,000 and 4,500 respectively** which means one doctor per 9,000 persons and one nurse per 86,000 persons. The comparative figures for the U. K. are one doctor per 776 persons and one nurse per 435 persons.

21. For a minimum standard of living the criteria which we should like to lay down in respect of preventive and curative measures include the following: (*i*) proper arrangements in respect of sanitation and water supply in rural and urban areas; (*ii*) a dispensary for every village; (*iii*) general hospitals and maternity clinics in towns; and (*iv*) specialized institutions for the treatment of tuberculosis, cancer, leprosy, veneral diseases etc.

22. Sanitation and conservancy in rural areas depend largely on proper instruction and education and could be substantially improved by means of well organized effective

**The World Textile Industry—Economic & Social Problems, Vol. I, p. 168.*

†sq. yds.

‡*Report of the Rent Enquiry Committee, Bombay—Vol. III, Part VI, p. 21.*

§*Annual Report of the Public Health Commissioner with the Government of India for 1939, p. 20.*

**J. B. Grant: *The Health of India*—Oxford Pamphlets on Indian Affairs—p. 24.

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propaganda. In urban centres, however, special measures would be necessary. Arrangements for adequate water supply will be required not only in urban areas but also in villages many of which suffer from scarcity of water. It is difficult to estimate the amount of capital expenditure that sanitation and water supply on this scale will involve but a figure of 100 crores of rupees will not be wide of the mark. At 7½ per cent the cost of maintenance would be Rs. 7½ crores per annum.

23. The village dispensary should be in charge of a qualified doctor assisted by two qualified nurses, one of whom at least should a trained midwife. This staff would be able to carry out most of the preventive and curative services necessary for improving the health of the village. As the average population of a village according to the 1941 census is only 517, normally they would be able to attend to vaccination against small-pox and innoculation against other infectious diseases whenever they show signs of breaking out in an epidemic form. They would render adequate medical aid to the sick and also attend to maternity cases. They might also be entrusted with the work of medical inspection of the village school.

24. The cost of building a dispensary with an area of about 1,200 square feet would roughly mount to Rs. 1,000 and the initial equipment would cost an equal amount. The running expenses of the dispensry which would include the salary of the staff and the cost of medicines are likely to be in the neighbourhood of Rs. 2,000, assuming that a certain amount of voluntary and part-time help of practising doctors would be available. The tetal cost of maintaining rural health on this basis would amount to:

	Rs.
Buildings and initial equipment	132 crores
Running expenses per year ..	132 „
Maintenance of buildings and equipment at 7½ per cent per year of capital expenditure ..	9.9 „

25. For urban areas we would suggest on an average a hospital with 40 beds for every 10,000 persons. As the average population of a town in India is 18,365, this would mean generally two hospitals per town of 40 beds each or one hospital of 80 beds. In addition to meeting the needs of the local population, the general hospitals in towns should serve as centres for expert advice and specialized treatment to sick persons in neighbouring rural areas. The capital cost of a hospital of this nature with 40 beds would be in the neighbourhood of Rs. 40,000 and the running expenses, which would include the salaries of doctors and nurses, expenses of indoor patients etc., would amount roughly to Rs. 28,000 per annum. Here again it is assumed that to some extent voluntary and part-time services would be forthcoming. The total cost of general hospitals in towns would thus amount to:

	Rs.
Buildings and initial equipment	22 crores
Running expenses per year ..	15 „
Maintenance of buildings and equipment at 7½ per cent per year of capital expenditure ..	1.5 „

26. Besides general hospitals, every town in India should have adequate provision for maternity services. In the year 1939 the number of maternal deaths arising out of child birth amounted to 2,00,000 and it is considered that 80 per cent of these deaths could have been prevented if adequate maternity services had been available. As the *Indian Medical Review* puts it "it is the right of every woman to have skilled attendance during pregnancy, labour and the puerperium".* In rural areas the midwives attached to the dispensary should be able to render all necessary help in this respect to expectant mothers in their homes. But in towns it is necessary to have special institutions for this purpose. A maternity hospital with 30 beds should meet the requirements of the average population of a town in India in this matter. The cost of building such a hospital and providing it with initial equipment would be in the vicinity of Rs. 30,000 and a sum of Rs. 24,000 would cover its running expenses. The total cost of maternity clinics for all the towns in India on this basis would be:

	Rs.
Buildings and initial equipment	8 crores
Running expenses per year ..	6 „
Maintenance of buildings and equipment at 7½ per cent per year of capital expenditure ..	60 lakhs

27. Special institutions for the treatment of tuberculosis, cancer, veneral diseases, mental disorders etc., would have to be provided at suitable places and would probably require accommodation for about 150,000 beds. The capital cost of housing these institutions and supplying them with equipment would on a very rough estimate amount to about Rs. 19 crores and would require a recurring expenditure of about Rs. 11 crores. The cost of maintaining buildings and equipment would be Rs. 1.5 crores.

28. The total cost of the various health and medical services mentioned above would be:

(Rs. crores).	Non-recurring cost.	Recurring cost.
Sanitation, water supply etc.	100	7.5
Rural dispensaries ..	132	141.9
General hospitals ..	22	16.5
Maternity clinics ..	8	6.6
Specialized institutions	19	12.5
Total ..	281	185.0

29. That every person above the age of 10 should be able to read and write and to take an intelligent interest in private and social life is yet another of the constituents of a minimum standard of living which we should like to bring within the reach of every individual in this country. The percentage of literacy above the age of 5 in India to-day is 14.6. In the advanced countries of the world it is more than 80. "Extreme forms of poverty" it is maintained "will prevail amongst the masses in India as long as the overwhelming majority of the Indian people are able neither to read nor write."†

30. To provide adequate facilities for primary education, it is necessary to have a school for every village at least up to five forms. Construction of suitable buildings with equipment for this purpose, consisting of two rooms, 20' x 30' each, in rural areas would cost nearly Rs. 66 crores. In urban areas, assuming that a room 20' x 30' is necessary for about 30 students and that the cost of buildings would be twice as high as that in rural areas, the cost of establishing primary schools would amount to Rs. 20 crores.

31. The recurring expenditure on primary schools consists largely of the salaries of teachers, which are very low at present and which will have to be increased. According to some educationists it is possible to reduce the incidence of these salaries substantially by introducing suitable reforms such as increasing the number of students per teacher, introducing the part time system, framing suitable curricula etc. Increase in the number of students per teacher would alone reduce the cost by about 50 per cent. The League of Nations' Mission of Educational Experts which reported on the reorganization of education in China remarks: "In China as a whole there are 20.3 pupils to one teacher whereas in many countries of a high standard of education there are 2 to 3 times as many. This should mean that in the same conditions and at the same expense, between 2 and 3 times as many pupils as are actually under instruction could be dealt with by the existing staffs of teachers and in the present very difficult conditions not less than 50 to 60 pupils per teacher should be taken as basis."‡ But assuming that the present system continues, we calculate the recurring cost of making primary education compulsory to boys and girls between 6 and 11 years of age at an average expenditure per pupil of Rs. 15 in rural areas and Rs. 25 in urban areas per annum.§ The cost works out as fololws:

Students in rural areas ..	44.1 mllion
Average cost per student ..	Rs. 15 per annum
Total recurring cost per annum	Rs. 66 crores
Students in urban areas ..	6.5 million
Average cost per student ..	Rs. 25 per annum
Total recurring cost per annum	Rs. 16 crores
Total recurring cost in urban and rural areas ..	Rs. 82 crores

To this, 7½ per cent of the capital expenditure will have to be added for the maintenance of buildings, which would amount to Rs. 6 crores per annum.

32. Adult educatoin should aim at literacy for all those who have passed the primary school leaving age of 11 years but have not passed 50 and who have not become literate. It will consist of a short course, mainly part time, of about 3 to 6 months' duration. It is general experience that adults acquire literacy much more quickly than children if they are given proper instruction. On the basis of experiments made after the inauguration of Provincial Autonomy, the cost of making an audit literate, *i.e.*, able to read and write, roughly works out to Rs. 4 per adult. Theoretically, the total number of illiterate adults on the basis of the 1941 census, which a scheme of adult education will have to tackle, would be about 200 million. In actual practice, however, the number would be smaller as a large proportion of the adults will pass out of the 11-50 age

Indian Medical Review, 1938, p. 185.

†W. M. Kotschnig: *Unemployment in the Learned Professions*, p. 316.

‡Quoted by Mr. R. V. Parulekar in *Literacy in India*, p. 113.

§The average cost per student of primary, middle school and high school education which we have assumed in this memorandum is generally on the low side as compared with that adopted by Mr. Sargent in his report. The figures we have assumed for primary education are, however, 75 per cent above the pre-war average.

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range and some others may die before it is possible to provide them with the necessary facilities for acquiring literacy. These two factors will bring down the number of adults to be made literate to about 165 million if the programme is spread over 15 years. At the rate of Rs. 4 per adult, the cost of liquidating the illiteracy of our adult population will therefore amount to about Rs. 66 crores. This, however, will not be a recurring cost since once the existing illiterate adults are made literate, further efforts in this direction would not be necessary. Adult education classes, which will have to be generally morning or evening classes, can be conducted in buildings provided for primary, secondary or higher education or at the places where the persons are working and would not, therefore, require any expenditure on buildings. The total cost of making the whole of our present population literate would thus amount:

	Rs.
Primary education—non-recurring cost	86 crores
Primary education—recurring cost	88 „
Adult education	66 „

33. The aggregate amount of income required to meet the barest requirements of human life, as set out in the foregoing paragraphs, (which, however, exclude a number of small items such as fuel etc.) would be as follows:

(Rs. crores).	Income required to be spent—round figures.
Cost of food	2,100
Cost of clothing ..	260
Recurring expenditure on housing	260
Recurring expenditure on health and medicine ..	190
Recurring expenditure on primary education ..	90
Total ...	2,900

34. This means that, in order to secure a minimum standard of living, a per capita income of Rs. 74 at pre-war prices is essential. That we are much below this minimum at present is indicated by the fact that according to the latest available estimate* of the national income of British India, which relates to the year 1931-32, our per capita income does not exceed Rs. 65. The figure for 1939 will be lower still if we make allowance for the large increase in the population of British India, 5 million per annum since 1931, which is not accompanied by any significant increase in the total national dividend. It is, therefore, necessary to increase our national income above the present level by a substantial margin even if we aim at nothing more than to secure our people their bare requirements as human beings.

ECONOMIC PLAN EXPLAINED

35. The preceding discussion has shown that our present national income is not sufficient to support even a minimum standard of living. But if we are going to develop our resources according to a pre-arranged plan, we should certainly not be satisfied merely by providing for every person the minimum requirements of life. A planned economy must aim at raising the national income to such a level that after meeting the minimum requirements every individual would be left with enough resources for enjoyment of life and for cultural activities. Our present information, inadequate as it is, regarding the potential resources of the country in respect of raw materials, power and labour leads us to believe that given a systematic plan and adequate organization it is possible to raise our national income within a short time to a level considerably above that required for meeting the minimum needs of life. Comparative figures of per capita national income in 1931 for certain countries of the world are given below to indicate the disparity between India and other countries:

*Annual per capita income in Rs.***

U. S. A. ..	1,405	France ..	621
Canada ..	1,038	Germany ..	603
U. K.	980	Japan ..	218
Australia ..	792	Br. India ..	65

36. The objective we propose for a plan of economic development for India may be stated as follows. There should be a threefold increase in the total national dividend within a period of 15 years from the time the plan is put into execution. The aggregate income of British India as estimated in 1931-32 is Rs. 1,766 crores. This should be raised in 15 years to about Rs. 5,300 crores. Assuming that the figure of per capita income calculated for British India is also applicable to the States, the range of increase in the total national dividend would be from Rs. 2,200 crores to Rs. 6,600 crores.

37. A threefold increase in the total national dividend will result in an equivalent increase in the per capita income only on the assumption that our population over the planning period remains stationary. This assumption is, however, not likely to hold good. In the absence of adequate reliable data regarding fertility, it is extremely difficult to make any forecast about the future growth of our population over a period of years. But after balancing the various factors, we are inclined to believe that the rate of increase recorded during the last decade will generally hold good for the period of our plan. With the progress of the plan, both our birth rate and death rate would decline but the balance of births over deaths is not likely to show any marked change. At the rate of 5 million per annum the population of India at the end of 1960, assuming the plan to start in 1945, will, therefore, be 489 million and a threefold increase in our total national dividend would in effect mean a per capita income of Rs. 135, representing a doubling of the 1931-32 figure.

38. This might appear to be too modest a goal for a planned economy to achieve, especially in view of the fact that in the U.S.S.R. within a short period of 12 years since the beginning of the first Five Year Plan, the national income is reported to have increased from 25 billion roubles to 125 billion roubles i.e., five-fold. As our national resources are not as extensive and varied as those of the U.S.S.R. and as we are anxious to avoid the heavy cost in terms of human suffering which the U.S.S.R. had to pay to achieve this spectacular result, we must necessarily fix our objective at a lower figure.

39. The proposed threefold increase in India's total national dividend will be brought about in such a way that the present overwhelming predominance of agriculture would be reduced and a more balanced economy established. According to the national income figures for 1931-32, the contribution of industry, agriculture and services to the total national dividend of British India is estimted at 17, 53 and 22 per cent respectively.† (About 8 per cent of the income has not been classified under any of these categories.) We propose a plan of development under which the respective percentages might be changed roughly to 35, 40 and 20 for the whole of India. On the basis of these percentages, the threefold increase in the national income which is aimed at would involve the following increments in the net income from industry, agriculture and services:

	Net income in 1931-32 (Rs. crores)	Net income expected after 15 years (Rs. crores)	Percentage increase
Industry ..	374	2,240	500
Agriculture	1,166	2,670‡	130
Services ..	484	1,450	200

40. At first sight the percentage increase in industrial income which this plan involves might appear to be disproportionately large as compared with the increase in agricultural income. But it has to be borne in mind that our industrial potentialities have to a great extent remained unexploited so far and adequate provision to make up this lag in industrial development would naturally mean a large percentage increase over the present level. On the other hand, as the demand for food crops which form the bulk of our agricultural products is comparatively inelastic, even after taking into account the probable increase in population and the higher level of income which the plan will bring about and the larger demand for industrial raw materials, it is not likely that more than a 130 per cent increase will be absorbed within the country. It is, however, necessary to mention that, although ultimately the contribution of agriculture to our national dividend will be only 40 per cent as compared with 53 per cent in 1931-32, it will not change the essentially agricultural character of our economy. From the point of view of employment, agriculture will continue to employ the greater part of our population. Even the U.S.S.R., in spite of the tremendous development of industries which she has achieved since the inauguration of the first Five Year Plan in 1928, has not been able to reduce to any marked degree the percentage of population employed in her agriculture.

41. The industries which an economic plan for India would seek to develop may be classified into two principal categories: (*i*) basic industries: and (*ii*) consumption goods industries.

*The estimate of national income and its distribution for British India which has been used in this memorandum is that made by Dr. V. K. R. V. Rao and published in *The National Income of British India* 1931-32.

**The figures except that for India are from *The Conference Board Economic Record*, *August* 3, 1939. The original dollar figures are converted at 1$—Rs. 2.289.

†As agricultural prices in 1931 were very low on account of the general economic depression, these proportions would be different in normal times. The proportion of income from agriculture would be higher and that from industry and services would be lower.

‡It is necessary to point out that this figure is calculated on the basis of Dr. Rao's estimate for 1931-32 which mainly takes into account harvest prices, while the value of minimum food requirements which we have estimated in paragraph 11 is based on retail prices.

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42. Basic industries, which would get priority over the other type of industries in the earlier years, would include among others the following principal groups:

Power—electricity.

Mining and metallurgy—iron and steel, aluminium, manganese etc.

Engineering—machinery of all kinds, machine tools etc.

Chemicals—heavy chemicals, fertilizers, dyes, plastics, pharmaceuticals etc.

Armaments.

Transport—Railway engines and wagons, shipbuilding, automobile, aircraft etc.

Cement.

43. These industries are the basis on which the economic superstructure envisaged in the plan will have to be erected. It is obvious that in modern times no industry can be established without power, machinery chemicals, etc. Similarly without fertilizers it is difficult to imagine any progress in agriculture. In the absence of adequate shipping and other forms of transport, economic life especially in a country of the dimensions of India will remain stagnant. But for the lack of most of these industries, India would not have been left so far behind other countries of the British Empire such as Canada and Australia in the matter of industrial development in response to war conditions. We consider it essential for the success of our economic plan that the basic industries, on which ultimately the whole economic development of the country depends, should be developed as rapidly as possible.

44. We have deliberately placed the production of power first in the list of basic industries because we believe that the development of our industries, both large and small scale, as also of agriculture and transport will be determined to a large extent by the development of electricity. The rapid economic development of the U.S.S.R. and Japan during the pre-war period and of Canada during the present war can ultimately be traced to the development of electricity in these countries. In fact in the U.S.S.R. a fifteen-year plan for the electrification of the country, the *Goelro*, was drafted as far back as in 1920 and it was only when the success of this plan was established beyond doubt that the ambitious five-year plans were put into execution. The scope for the development of hydro-electric energy in particular is very large in this country. Its potential reserves have been estimated at about 27 million kilowatts, out of which only half a million kilowatts have been developed so far.

45. Some of the principal consumption goods industries which should be further developed in India are:

Textiles—cotton, silk and wool.

Glass industry.

Leather goods industry.

Paper industry.

Tobacco industry.

Oil industry, etc.

46. The list of consumption goods industries given above is only illustrative. The nature and kind of consumption goods industries to be developed will ultimately be dependent upon the income of the people. As income increases, the percentage of expenditure on different classes of consumption goods will show marked variations. For example, demand for articles of consumption like furniture, books, artware, etc., which will be relatively small at a low income level, will increase as the general level of income rises. What classes of consumption goods industries should be developed will naturally be decided from time to time, as the plan progresses, in the light of variations in the demands of consumers. As far as is consistent with planning, the free choice of consumers in respect of consumption goods should suffer no restriction.

47. It is an essential part of our plan for the organization of industries that adequate scope should be provided for small scale and cottage along with large scale industries. This is important not merely as a means of affording employment but also of reducing the needs for capital, particularly of external capital, in the early stages of the plan. It is difficult to define the considerations on which the choice between large and small scale industries and cottage industries should be determined. The factors involved in the choice are numerous and often conflicting. But generally it may be stated that while in basic industries there is little scope for small industrial units, they have an important and useful place in consumption goods industries where their function is in many cases complementary to that of large units.

48. It is extremely difficult to make an estimate of the amount of capital which India would require to carry out the programme of industrial development outlined above. A large number of the industries proposed would be new to the country and the proportion of capital required by each of them to the net product which it is likely to contribute would show marked variations. It may be explained that by the 'net product' of an industry in this context is meant its gross production less the cost of raw materials and power consumed by it. And 'capital' includes not merely paid up capital but also general reserves and borrowed funds. In the nature of things some industries like the hydro-electric industry are bound to require in proportion to their net product a much higher proportion of capital than, say, textiles. The proportion of capital employed will also vary according to the extent to which capitalistic methods of production are employed and technological advances are made use of.

49. No figures either of valuation of capital employed in existing industries in the country or of their net product are available. But the ratios of capital employed to net product worked out on the basis of information given in the balance sheets for the Bombay cotton textiles industry, the Associated Cement Companies and the Tata hydro-electric group are as follows:

	Cotton textile	Cement	Hydro-electricity
1937 ..	2.13	3.12	9.19
1938 ..	2.62	2.11	7.80
1939 ..	3.73	2.53	8.23

50. Taking into account the fact that while India has plenty of labour, her capital resources are comparatively small, we think that industries should be organized in such a way that over the whole planning period the ratio of capital including land and buildings to net product would not be too high. Provision for small scale and cottage industries in the industrial organization of the future has been suggested by us partly with this object in view. Assuming a ratio of 2.4 which as compared with similar ratios in other countries is a low proportion, the total amount of capital required to increase our net industrial output to Rs. 2,240 crores as visualized in the plan would be in the neighbourhood of Rs. 4,480 crores. In this connection it may be mentioned that the amount of capital invested in our industries, excluding railways and other forms of transport, in the pre-war period has been estimated at about Rs. 700 crores.

51. In the proposed plan we have aimed at increasing our agricultural production by 130 per cent. The target has deliberately been fixed low. Our idea is that in respect of agricultural commodities India should as far as possible aim at feeding her own population adequately and should not aspire in the initial years of planning to export to foreign markets. Our plan for agricultural development aims not merely at increasing production generally but also at increasing the production of those crops which are necessary for feeding the population. This would necessarily involve a readjustment of the areas under cultivation of different crops. Areas under commercial crops like jute, tea, cotton, oilseeds, etc., the fortunes of which are to a substantial extent dependent on foreign trade and which have introduced a serious element of uncertainty in our economic life, would have to be adjusted to the conditions of international trade that might prevail in the post-war period. The substitution of a large proportion of the existing short staple cotton by long staple varieties and the development of cotton textile and oil crushing industries within the country would, however, reduce the dependence of these crops on foreign markets. In respect of food crops it is not only desirable that their production should be increased but the proportion of areas under cereals, pulses, vegetables, fruits, etc., would have to be fixed in relation to the requirements of a nutritive diet.

52. Increase in agricultural production, however, presupposes certain fundamental reforms. The most important question to be solved is that of the size of agricultural holdings. The average holding at present is not more than 3 acres scattered over the village in tiny fragments. Although there may be definite limits to the advantages arising out of consolidation of holdings and increase in their size, it is one of the main reforms which would be necessary for the adoption of intensive farming. To bring it about, co-operative farming appears to present less difficulties than any other method that may be suggested. It increases the size of the holding for purposes of cultivation without depriving the cultivators of their right to the ownership of their existing holdings. In order that co-operative farming should come into vogue as early as possible, some measure of compulsion appears desirable.

53. It is also necessary to liquidate the burden of agricultural indebtedness. The debt which was estimated at Rs. 1,200 crores before the war has since been probably reduced to a considerably smaller figure as a result of the favourable prices realized by agriculturists during the last two years. It is perhaps possible to reduce this further by means of conciliation. The liquidation of debt should be arranged principally through co-operative societies, which would require to be suitably organized for the purpose and provided with sufficient long-term finance. It may be pointed out that the finance required for this is not included in our estimate of capital expenditure since the debt of the agriculturist represents the savings of another class and these savings would themselves be available directly or indirectly for financing co-operative societies.

54. In addition to the size of holdings and rural indebtedness, there is a third problem the seriousness of which has not yet been fully realized but which will need attention if our agriculture is to be improved. This is the problem of soil erosion. Every year large quantities of valuable top soil are washed away by rain never to come back. If this



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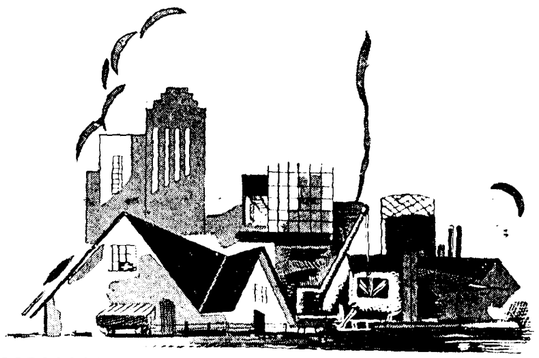
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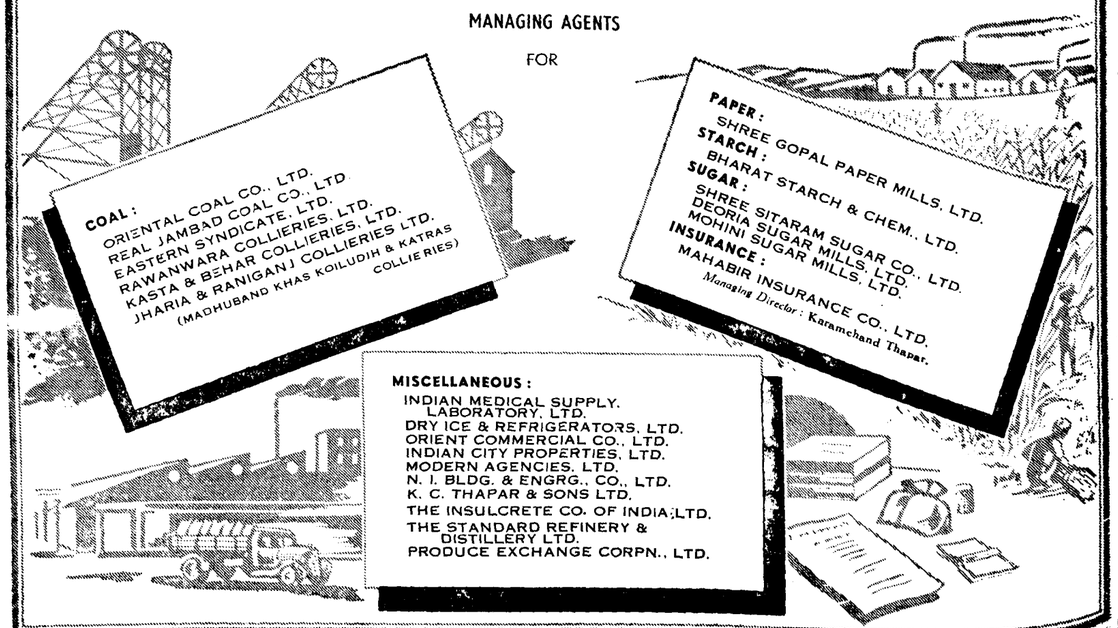
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process goes on, millions of acres of land will be permanently lost for cultivation. It is essential to check this evil in time by terracing arable lands, launching schemes of afforestation and adopting other measures suitable to conditions in different tracts. For soil conservation and other permanent improvements to land, a sum of about Rs. 200 crores should be provided as capital outlay and Rs. 10 crores as recurring expenditure.

55. When these three fundamental questions, viz., the size of holdings, indebtedness and soil erosion have been tackled agricultural production in India can be increased by (*i*) extending the area under cultivation or by (*ii*) improving the yield per acre or by (*iii*) a combination of both. Although at present 18 per cent of the area in British India, 94 million acres, is classified as cultivable waste, it is extremely doubtful whether much of it is really cultivable. The question deserves to be thoroughly investigated.

56. Improvement in yield, on the other hand, appears to have great possibilities. The following comparative figures are significant:

YIELD PER ACRE IN TONS—1939-40.

	Rice	Wheat	Sugarcane	Cotton
U.S.A. ..	1.01	0.37	20.06	0.11
Canada ..	—	0.52	—	—
Australia ..	—	0.42	—	—
Japan ..	1.61	—	—	—
Egypt ..	—	—	—	0.23
Java ..	—	—	54.91	—
India ..	0.35	0.32	12.66	0.01

57. Improvement in the yield per acre can only be brought about by better methods of farming which would include irrigation, better rotation of crops, use of better varieties of seeds, manure, improved types of implements etc. Of the total area of 205 million acres under cultivation in British India in 1938-39, only 54 million acres were irrigated—28 million acres by canals, 6 million by tanks, 13 million by wells and 7 million by other sources. It is necessary to increase the area under irrigation substantially if the yield of our crops is to be improved. We estimate the increase required at 200 per cent in the area irrigated by canals and by all the other means combined. The total capital outlay on the existing canals amounted to Rs. 153 crores in 1938-39 and the annual working expenses were in the neighbourhood of Rs. 5 crores. On this basis the capital cost of the additional canals would work out to Rs. 306 crores and their maintenance would require a sum not exceeding 10 crores of rupees per annum. Construction of new canals to this extent will, however, involve the erection of expensive dams for impounding water. In view of this, the amount of capital required for the construction of canals may be increased to Rs. 400 crores. It may be mentioned incidentally that in constructing new canals the possibility of their being used for the production of hydro-electric power should not be lost sight of. The cost of constructing tanks, wells etc., to irrigate another 48 million acres may be roughly estimated at about Rs. 50 crores. Maintenance charges for this form of irrigation would be relatively small.

58. In order to popularize improved methods of cultivation and dairy farming and to educate the cultivator in their use, a large extension of model farms would be necessary. On the basis of one farm for 10 villages, the number of farms required would be about 65,000. Besides educating the cultivator in the use of improved methods of farming, these farms would be expected to provide improved varieties of seed and manure, agricultural implements, bullocks etc., and generally to help agriculturists. As improvement in the yield of agriculture will largely depend on the introduction of fertilizers both organic and inorganic, it will be an important responsibility of the model farm to give proper instruction to the farmer regarding their use. Each of these farms should also be provided with a veterinary branch. The cost of a farm established on these lines may be estimated at Rs. 50,000—30,000 on account of capital and 20,000 on account of working expenses.

59. The total amount of capital required for increasing agricultural production to the target figure is shown below:

(Rs. crores)	Non-recurring expenditure	Recurring expenditure
Soil conservation etc. ..	200	10
Working capital ..	250	—
Irrigation—canals ..	400	10
Irrigation—wells ..	50	—
Model farms ..	195	130
Total	1,095	150

60. An increase in the volume of industrial and agricultural production as envisaged in the previous paragraphs will result in a large movement of goods and services within the country. The increase in the net income from trade and services which we anticipate is about 200 per cent. Internal trade may well be expected to increase to an extent which would necessitate a large expansion of the means of communication, particularly railways, roads and coastal shipping. In all these spheres India is seriously deficient. India with an area of approximately 1,580,000 square miles has about 41,000 miles of railway while Europe, excepting the U.S.S.R., with an area of 1,660,000 square miles has 190,000 miles of railway. Similarly, in British India the proportion of road mileage to area works out at 35 miles per 100 square miles. The corresponding figure for the U.S.A. is 100 and the U. K. 200. Coastal shipping has been even more seriously neglected. Taking into account the fact that railways have received comparatively more attention in India and that in future the necessity of developing communications in rural areas would be more urgent, we should aim at an increase of 21,000 miles in railways and 300,000 miles in roads. This would mean an increase of 50 per cent over the existing railway mileage and an increase of 100 per cent in the mileage of roads in British India alone. For the development of coastal shipping, our aim should be to improve the small natural harbours that are scattered along India's extensive coast line and to provide them with loading and unloading facilities.

61. The total route mileage of railways in India was 41,000 miles in 1938-39 and the total capital at charge was Rs. 848 crores. Assuming that the ratio of capital to route mileage remains the same, the capital cost of adding about 21,000 miles of new railway line in this country would roughly amount to Rs. 434 crores. Maintenance charges at the rate of about 2 per cent would work out to Rs. 9 crores per annum.

62. The length of existing roads in British India is in the neighbourhood of 300,000 miles. Of these 74,000 miles are metalled and 226,000 miles are unmetalled. The programe of doubling this mileage in 15 years is intended to cover many village roads and the humbler district roads. Our idea is that all important villages should be connected with the main highways of trade so that "no village with a population of 1,000 and over should be more than, say, a mile or half a mile from a public road."* If side by side with this road development, the bullock cart which is bound to remain the principal means of vehicular traffic in rural areas, is also improved, especially by making the use of pneumatic tyres universal, it would go a long way towards reducing the cost of maintenance. As villages are not likely to have heavy traffic, we suggest that the roads connecting them with district roads or trunk roads should be ordinary metalled roads. The use of pneumatic tyres for bullock carts should make them quite suitable for such roads. On an average the cost of a metalled road, 18 feet wide, is estimated at Rs. 10,000 per mile. On this basis the cost of constructing 300,000 miles of additional road mileage in India would amount to Rs. 300 crores. The cost of maintenance would be Rs. 35 crores.

63. If India is to have an adequate road system in future, it is necessary, in addition to constructing this new mileage of roads, to metal the 226,000 miles of ordinary earth roads that are being used for vehicular traffic at present. The cost of reconstructing these roads at the rate of, say, Rs. 5,000 per mile would amount to Rs. 113 crores. If they are reconstructed, the cost of their maintenance will be less than what is incurred at present.

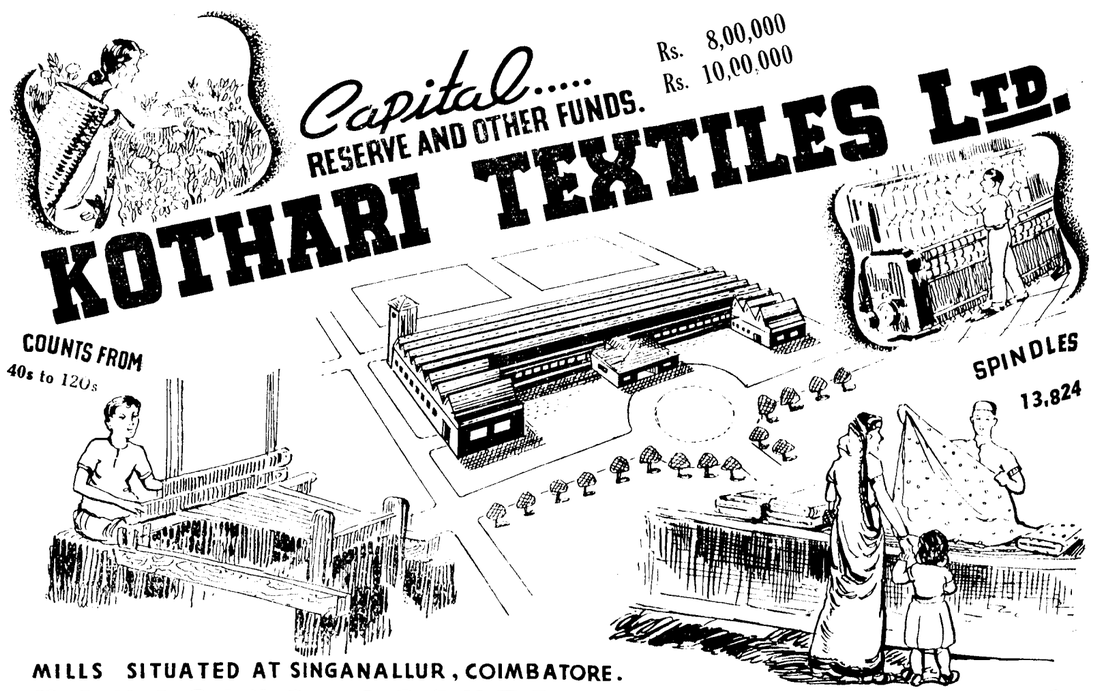
64. For a long time past, very few ports in India except Bombay, Calcutta, Madras and Karachi have had adequate shipping facilities. In recent times several smaller ports, principally in Indian States, have been developed but still the number of ports suitable for coastal shipping is very small. If coastal shipping is to occupy its legitimate place in the transport system of the future, it is necessary to provide more harbours suitable for small ships. A capital expenditure of about Rs. 50 crores may be estimated for the purpose. At 10 per cent the maintenance charges would amount to Rs. 5 crores per annum.

65. The total cost of increasing rail and road mileage and improving ports would thus be:

(Rs. crores)	Non-recurring expenditure	Recurring expenditure
Railways ..	434	9
Roads—		
new construction	300	35
reconstruction ..	113	—
Ports ..	50	5
Total ..	897	49

66. In the execution of a comprehensive plan of economic development, it is essential that we should be able to count on the willing co-operation of the people. This will be possible only if the masses are able to read and write and are in a position to understand for themselves the broad implication of the developments embodied in the plan. The execution of a plan which aims at an all round development will also require a huge personnel trained for technical posts in agriculture, industry and trade and for general administration. Provision of primary education which has been mentioned as one of the essential requirements of a reasonable standard of living would under Mr. Sargent's scheme require about 1,800,000 teachers in British India alone. Provision of adequate medical help would need a large number of

*Presidential address of Sir Kenneth Mitchell to the eighth session of the Indian Roads Congress, 1943.





doctors and nurses. As our natural resources like minerals, hydro-electric power, soil etc., are not yet properly surveyed, extensive surveys* will have to be undertaken to ascertain their quantity, quality and distribution and a large number of research stations will be required to carry out investigations. Some idea of the personnel required for large scale economic planning may be gathered from the following statement relating to Soviet Russia in 1939:†

Managing staff of Soviet economy—		
Heads of administration etc.	450,000	
Managers of State industry	350,000	
Managers of State & collective farms	582,000	
Others	369,000	
		1,751,000
Engineers, architects		330,000
Technicians		906,000
Teachers, research workers		1,049,000
Accountants, economists, statisticians		2,439,000
Others		3,116,000
Total Soviet intelligentsia		9,591,000
Total Soviet population		170,000,000

67. To achieve mass literacy and to secure a sufficient number of educated administrators and trained technicians, a comprehensive programme of education is necessary. This should cover the following main aspects:

Primary education.
Adult education.
Secondary and vocational education.
University education.
Scientific education and research.

68. The expenditure necessary to provide universal primary education and to secure literacy for adults has already been indicated in paragraph 32. As regards adult education, something more is necessary under a plan of development than the minimum provision suggested in that paragraph. The content of adult education should be widened so that it will make "every possible member of a state an effective citizen and thus give reality to the ideal of democracy". To achieve this, a scheme of adult education must also provide for cultural and vocational education besides the teaching of three R's. We estimate the cost of this per adult roughly at Rs. 2** and the total at Rs. 33 crores. This will bring the aggregate cost of adult education, including the provision made in paragraph 32, to Rs. 99 crores.

69. It is necessary to split up secondary education into two parts: middle school and high school education. The former is considered as important as primary education. "There is little hope of permanently improving the conditions of village life and of making the rural population responsive to fruitful ideas unless the younger generation is educated beyond the primary stage up to an age when boys and girls realize that they are becoming social and economic assets to the community."‡ All primary school students should, therefore, be given a course of middle school education for three years in order to make them useful citizens. Approximately, the expenditure on accommodation for middle schools will be half that for primary schools. For high schools, the accommodation required would be mainly in the bigger villages and urban areas and its cost may be calculated on the basis of building costs in urban areas. Mr. Sargent suggests that "roughly one child in every five will be able with profit to enter the high school stage". The likely number of high school students on this basis would be round about 10 million. An approximate estimate of recurring expenditure on secondary education may be made by applying the average cost per student in middle schools and high schools in the country during the pre-war period. The total expenditure on middle school and high school education would then be as follows:

Middle schools in urban areas —buildings and equipment	Rs. 34 crores
Middle school students in rural areas	22 million
Average cost per student per annum	Rs. 22
Cost of middle school education in rural areas	Rs. 49 crores
Middle schools in urban areas —buildings and equipment	Rs. 11 crores.
Middle school students in urban areas	3.3 million
Average cost per student per annum	Rs. 31
Cost of middle school education in urban areas	Rs. 10 crores
High schools—buildings and equipment	Rs. 33 crores
Number of high school students	10 million
Average cost per student per annum	Rs. 64
Cost of high school education	Rs. 64 crores
Cost of maintenance of middle school and high school buildings at 7½ per cent of capital expenditure	Rs. 6 crores

70. For vocational education,*** university education and scientific education and research, the data necessary for a detailed calculation are lacking. We propose, therefore, to take roughly 5/1000th of the national income per year as a comprehensive measure of the expenditure which would be required. This would amount roughly to Rs. 10 crores in the first year of the plan and to Rs. 30 crores in the last year. It may be mentioned that the total expenditure on scientific education and research amounts to 1/1000th of the national income in the U. K., 6/1000th of the national income in the U.S.A. and 10/1000th of the national income in the U.S.S.R. All told, the amount of expenditure on education would be:

(Rs. crores)	Non-recurring expenditure	Recurring expenditure
Primary education	86	88
Adult education	99	—
Secondary education	82	129
University education, scientific education and research	—	average 20
Total	267	237

71. The expenditure necessary under public health has been indicated in paragraph 28. No further provision is necessary under a 15-year plan.

72. In estimating the capital outlay on education and public health, we have not taken into account the probable increase in population during the period of the plan. This is because we have not made any allowance in our estimate for the expenditure which has already been incurred on education and public health up to now and we assume that this amount would be sufficient to cover the expenditure due to increase in population.

73. In the case of housing, however, there is no such reserve in the estimate given in paragraph 15 out of which provision may be made for an increase in population. In estimating the capital expenditure on house construction during the period of the plan, we must, therefore, take into account the additional housing necessary for increase in population. A capital outlay of about Rs. 800 crores would be required for this purpose. The total amount of capital required for bringing existing housing up to the minimum standard we have laid down and for providing new houses to meet an increase in population would, therefore, amount to Rs. 2,200 crores. At 7½ per cent of the total capital expenditure including the value of existing housing, the cost of maintenance would be Rs. 318 crores.

74. For miscellaneous capital expenses which have not been specifically mentioned, a sum of Rs. 200 crores might be provided. No separate figure for maintenance charges under this head seems necessary.

75. The total expenditure which the plan is likely to involve is summarized below:

(Rs. crores)	Non-recurring expenditure	Recurring expenditure
Industry	4,480§	—
Agriculture	1,095	150
Communications	897	49
Education	267	237
Health	281	185
Housing	2,200	318
Miscellaneous	200	—
Total	9,420	939

76. Throughout this section we have shown recurring and non-recurring expenditure separately. We have made this distinction with the object of indicating how the capital expenditure is distributed and how it has

*Sir Cyril Fox states: As a result of 97 years' work carried by officers of the Geological Survey of India, it has been found that an average of 500 square miles can be accurately surveyed each year, and that the average service in the field is about 10 years per geologist. Roughly 100 geologists in all have been so employed since 1846 so that theoretically only 500,000 square miles could have been examined in any detail in the time and there remains over a million square miles still to scrutinise.

†E. Strauss: *Soviet Russia*, p. 317.

**Figure based on Mr. Sargent's estimate.

***Report on Vocational Education in India*, p. 13.

‡The average cost per pupil per annum in the technical and industrial schools in the U. P. in 1937 ranged from Rs. 155 to Rs. 869 although there was a good deal of concentration between Rs. 200 and Rs. 300. The Industrial Commission 1916-18, estimated that the average cost per pupil in industrail schools would be about Rs. 200 and that they could be established with a capital of Rs. 500 per student.

§The ratio of 2.4 which we have assumed for estimating the total amount of capital required for industrial development includes both fixed capital and working capital. The figure of working capital is not therefore separately calculated.

been arrived at. It will, however, be obvious that all recurring expediture, except that for depreciation and replacement, is in effect working capital and for estimating the total amount of capital which the plan is likely to require, it should be combined with non-recurring expenditure. On this basis the total capital requirements of the plan we have outlined would amount to about Rs. 10,000 crores distributed as follows:

	(Rs. crores)
Industry	4,480
Agriculture	1,240
Communications	940
Education	490
Health	450
Housing	2,200
Miscellaneous	200
Total	10,000

IV

SOURCES OF FINANCE

77. In examining the sources from which the finance required for the plan may be obtained, it is important to distinguish between external finance and internal finance. External finance is the finance available for payment to foreign countries for goods and services imported from them while internal finance is that required within the country for the mobilization of our resources. In the initial years of planning, India will be dependent almost entirely on foreign countries for the machinery and technical skill necessary for the establishment of both basic and other industries. As the plan develops, our dependence on foreign countries in this matter should steadily decline. The imports of machinery and technical skill inevitable in the initial years of planning would require a large amount of external finance, the raising of which constitutes an important problem in a plan of economic development. Internal finance on the scale which we consider necessary will also raise serious difficulties but in a planned economy these would not be insurmountable. The sources of external and internal finance which would be available to us are:

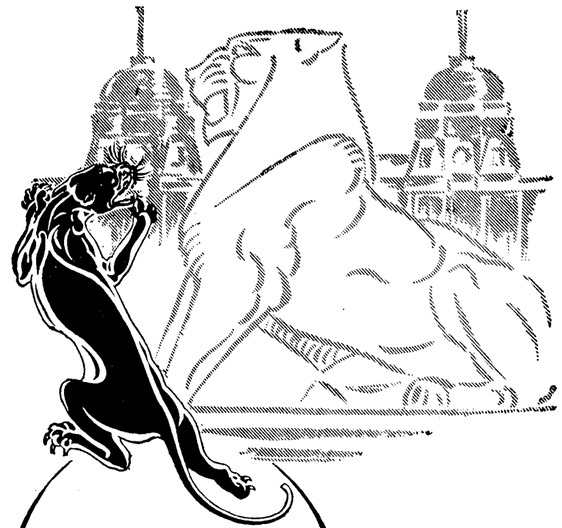
External finance :
- The hoarded wealth of the country, mainly gold.
- Our short term loans to the U.K.—sterling securities held by the Reserve Bank of India.
- Our favourable balance of trade.
- Foreign borrowing.

Internal finance :
- Savings of the people.
- New money created against *ad hoc* securities i.e. on the inherent credit of the government.

78. The volume of hoarded wealth in this country has been estimated at about Rs. 1,000 crores after allowing for the recent exports of 'distress' gold. A part of this should become available for capital investment if, as is assumed at the beginning of this memorandum, a national government comes into power in whom people have full faith and if suitable means are adopted for attracting hoards from their place of concealment. The amount available from this source may be estimated at not more than Rs. 300 crores.

79. Our sterling securities in the Banking and Issue Departments of the Reserve Bank of India amount to about Rs. 800 crores at the moment. If the war continues for a year or two and His Majesty's Government continue to make purchases from this country on the same scale as they have been making hitherto, the amount is likely to increase to Rs. 1,000 crores. This could be utilized for importing the capital goods required at the beginning of the plan.

80. As a result of the general policy of directing agricultural production primarily with a view to meeting the internal demand which we advocate in this plan, our export trade is likely to diminish in future. Side by side, the development of consumption goods industries and food crops within the country will bring about a reduction in the volume of imports. Our favourable balance on normal trade account is not, therefore, likely to shrink below Rs. 40 crores per annum which, because of the repatriation of most of our sterling debt, will be available as external finance. The total amount which might be expected from this source in 15 years will, therefore, be about Rs. 600 crores.



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81. India's credit in foreign capital markets is now very high and she can, therefore, borrow substantial amounts of capital if she so wishes in these markets, especially in America. Such capital, if it is not accompanied by political influence or interference of foreign vested interests, should not be unwelcome. Even if India resorts to 'created money' as she is likely to, since this finance is to be employed for promoting an expansionist economy, its effect on her credit in foreign markets would not be so serious as it otherwise would be. By giving priority to basic industries in our programme of development and by using our sterling balances in the initial stages for importing the necessary plant, machinery and technical experts, it is, however, possible to curtail our requirements of external finance. As the plan proceeds, India would be able to satisfy her requirements of heavy machinery and other capital goods from her own industries. We may put the figure of foreign loans at about Rs. 700 crores.

82. An important source of finance which would assume considerable proportions as national income grows, is the volume of savings within the country. The percentage of savings to national income in some foreign countries is given below*:

	U.K.	U.S.A.	Germany	Japan	Russia
1900-10	12.2	14.3	19.1	—	8.2
1919-24	8.1	12.2	—	21.9	—
1925-30	7.6	10.9	7.7	19.8	7.3
1934-37	7.0	5.0	11.8	21.9	14.2

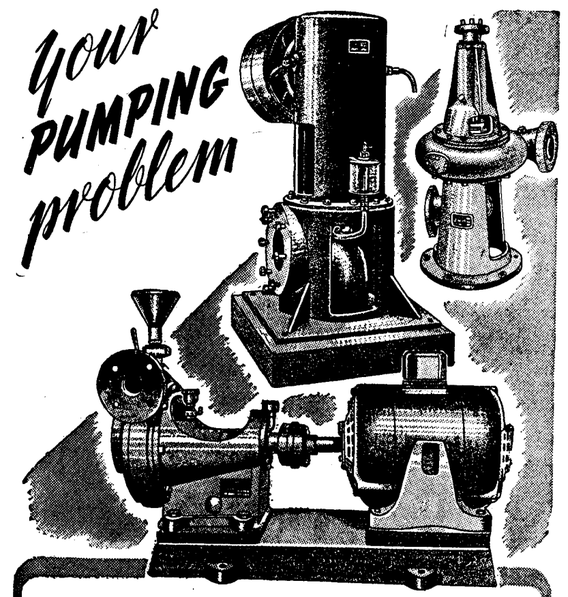
83. In India, taking into account the fact that the present standard of living is extremely low and that no provision has been made for the increased taxation which a planned economy would necessitate, we do not assume that more than 6 per cent of the national income on an average would become available for investment during the period of the plan. On this basis the total amount which could be obtained over the whole period from the savings of the people would be in the neighbourhood of Rs. 4,000 crores.

84. We have estimated the savings which would be available for investment at a conservative figure. It is possible that a larger percentage of the national income than we have estimated may be forthcoming as savings. If this possibility, however, does not materialise, a large part of the capital required, about Rs. 3,400 crores, would have to be created by borrowing against *ad hoc* securities from the Reserve Bank. New money to this extent can be created only if people have full confidence in the resources and *bona fides* of the government that creates it. There is nothing unsound in creating this money because it is meant to increase the productive capacity of the nation and in the long run is of a self-liquidating character. At the end of the period, the general level of prices would in all probability be lower than at the beginning of the plan. During the greater part of the planning period, however, financing of economic development by means of 'created money' on this scale is likely to lead to a gap between the volume of purchasing power in the hands of the people and the volume of goods available. How to bridge this gap and to keep prices within limits will be a constant problem which the planning authority will have to tackle. During this period, in order to prevent the inequitable distribution of the burden between different classes which this method of financing will involve, practically every aspect of economic life will have to be so rigorously controlled by government that individual liberty and freedom of enterprise will suffer a temporary eclipse.

85. The amount of capital which we expect to get from the various sources mentioned above is summarized below:

	(Rs. crores).	
EXTERNAL FINANCE :		
Hoarded wealth	300	
Sterling securities	1,000	
Balance of trade	600	
Foreign borrowing	700	
		2,600
INTERNAL FINANCE :		
Savings	4,000	
'Created money'	3,400	
		7,400
Total		10,000

86. Our object in this section has been to indicate the sources from which the capital expenditure required for the plan may be met.



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*Colin Clark: *The Conditions of Economic Progress*, p. 406.

The precise form in which the capital may be raised, whether by the state in the shape of taxation or government borrowings or by private voluntary investment, is a question which can only be considered, when the plan is ready for execution, in the light of conditions then prevailing. It will depend among other things on the role to be assigned to the state in the future economy of the country and also on the position of the money market after the war.

87. It is necessary to emphasize that in a planned economy we are primarily thinking in terms of commodities and services. Money or finance is therefore completely subservient to the requirements of the economy as a whole and must be treated merely as a means of mobilizing the internal resources of the country in materials and man-power.

V

STAGES OF DEVELOPMENT

88. In determining the stages by which the plan is to be completed, the following factors should be taken into account: (*i*) the extent to which natural resources, labour, capital goods and managerial ability could be made available; (*ii*) the necessity of giving priority to certain kinds of development over others for the success of the whole plan; and (*iii*) the importance of avoiding too great a strain on the country's economy in the execution of the plan.

89. Regarding (*i*) it may be stated that it will be an essential part of the plan to make a thorough survey of our soils, water power resources, geological wealth etc. On the basis of available information, which is admittedly incomplete, it is probable that most of the raw materials required for the plan outlined in this memorandum would be available within the country in requisite quantities. In respect of labour, capital and managerial ability, the situation would be somewhat different in the initial years. We have plenty of unskilled labour in the country but in addition to this, a large supply of skilled labour and trained technicians will be necessary. This will become available as in Russia and Poland when the schemes for their recruitment and training, which in themselves would be an important part of the plan, are complete and put into operation. But till this supply is forthcoming, India will have to import foreign technicians. The plan will, therefore, have to be arranged in such a way that the schemes undertaken in the earlier years can be carried out with a minimum of skilled labour. For capital goods, mainly machinery, India will have to depend on foreign countries for a longer time and to a larger extent than for labour; our ability to secure these from foreign countries would be determined mainly by the extent of our foreign resources. As to managerial ability, which is an important factor in modern business organization, no serious difficulty need be anticipated in rendering the country self-sufficient within a short period.

90. In mapping out the stages of development, we shall have to pay special attention to basic industries, such as the manufacture of machinery, chemicals etc. On these industries will depend the development not only of all other industries but of the whole economic life of the country. Till these industries are developed, we shall naturally be at the mercy of foreign countries. To shorten this period of dependence, it is necessary to give priority to basic industries over other industries and thus to speed up development.

91. Planning without tears is almost an impossibility. But we can learn some lessons from the Russian experiment and avoid the errors to which planners in their over-enthusiasm are liable. Two features of the Russian Plans which caused misery and hardship to the masses were: (*i*) their over-emphasis on heavy industries and indifference to consumption goods industries and (*ii*) their enthusiasm for building huge industrial plants which took years to come into operation. It is necessary in India to pay special attention to basic industries but it should be our aim simultaneously to develop consumption goods industries so as to meet at least our essential requirements. Similarly, we should try, as far as possible, to build our industrial units on a scale which is not larger than is strictly necessary for economical working so that they can come into production within a short time and lend themselves more easily to regional distribution.

92. In the light of these considerations, we give in the next paragraph a rough outline of the stages by which the economic plan should be carried out. In the nature of things, any such programme must be full of imperfections. "In the first years, indeed, only bad plans can be drawn up, since there is no stable basis on which one can rely and all the problems must be solved simultaneously. But as time goes on, the ground is cleared more and more and the number of problems diminishes".*

93. For purposes of execution, the plan outlined in this memorandum should be subdivided into three plans, each covering a period of five years. The expenditure to be incurred during each of these plans is indicated below:

(Rs. crores)	First plan	Second plan	Third plan	Total
Industry	(790)	(1,530)	(2,160)	(4,480)
Basic industry	480	1,200	1,800	3,480
Consumption goods industry	310	330	360	1,000
Agriculture	200	400	640	1,240
Communications	110	320	510	940
Education	40	80	370	490
Health	40	80	330	450
Housing	190	420	1,590	2,200
Miscellaneous	30	70	100	200
Total	1,400	2,900	5,700	10,000

94. In the intial period the total amount to be spent has been deliberately kept low because the material resources and personnel available at the beginning of the plan would be comparatively small. With the development of the plan, both material resources and personnel would become available in rapidly increasing proportions and the tempo of progress would be accelerated. While the first five year plan will be handicapped by the fact that there will be no previous preparation in anticipation of its requirements, the second and third plans would have their requirements studied in advance and adequate preparations made for their inauguration. Although the first plan will therefore start almost *in vacuo*, it will lay the foundation for the second plan which in its turn will be the basis for the third one. In allocating the amount of capital expenditure to be incurred during each of the three stages, we are mainly guided by this consideration. To put it briefly, we have planned the expenditure to increase in geometric progression.

95. The developments in the different sections of the plan have been mapped out generally in accordance with the considerations discussed earlier in this part. For instance, it will be seen that even in the first five year plan, side by side with basic industries, we have provided a comparatively large amount of capital for the development of consumption goods industries also. The importance of this will be understood if we realize that in the first five year plan a substantial part of this capital will have to be spent in foreign countries for importing the necessary equipment which will not be available in the country. This will mean a reduction in the limited volume of external finance which is available to us and which is essential for the establishment of basic industries. In the succeeding stages the capital equipment required by consumption goods industries would be supplied to an increasing extent by our own industries and the dependence on external finance would be reduced. It is also necessary to emphasize that in the production of consumption goods we presume that small scale and cottage industries which require a comparatively small amount of capital equipment would play an important part.

96. The ratio between the capital outlay on basic industries and consumption goods industries over the whole period is roughly 3.5, which is much smaller than in the case of the U.S.S.R. This brings out the fact that we have given more attention to consumption goods in our plan.

97. The total expenditure on basic industries over the whole period is estimated at Rs. 3,480 crores. A large proportion of this will have to be spent on the import of foreign capital equipment. The total amount of external finance which is likely to be available to us is, however, in the neighbourhood of Rs. 2,600 crores only. The expenditure on basic industries during the first two plans which amounts to Rs. 1,680 crores is well within the limits of our external finance and we presume that the basic industries which would be developed in the first two plans would be such as would themselves produce a substantial proportion, if not the whole, of the capital equipment needed for the basic and consumption goods industries to be developed in the third period.

98. While fixing targets for the development of agriculture, communications, education, health and housing, we have attempted, as far as possible, to strike a balance between the requirements of each stage of development and the resources and personnel available during that stage.

*Ferdinand Zweig: *The Planning of Free Societies*, p. 125. Also see his following statement: "Every beginning in planning must be bad, and the time needed for its improvement is considerable. This point is extremely important, because the antagonists of planning experiments try to kill them at the start by airily pointing out the failures and defects inevitable during their teething stages."

REVOLUTION IN THE DRUG INDUSTRY

Considering the position in which India found herself at the outbreak of the war and the enormous difficulties that lay in the way of our making for ourselves a wide variety of drugs and medical requisites, it is certainly something to shout about that more than 60 per cent of our requirements of drugs is met by indigenous production. Even apart from the additional needs which the prevalence of the war so close to our frontiers has set up, the problem of meeting our medical requirements without the aid of imports was no light one. For India used to import annually Rs. 220 lahs worth of drugs and medicines excluding certain chemicals which were used for other purposes also. In fact the total import of drugs, medicines and allied preparations was in the neighbourhood of Rs. 5 crores per annum in the pre-war times. Since the price of these medicines has more than doubled in most cases, the value of the new lines of activities that were called for can hardly be under-rated.

The change in the position which was described at the outset may be easily appraised when it is mentioned that the Medical Stores Departments to-day effect local purchases in India to the value of nearly Rs. 2 crores, which compares with Rs. 15 lakhs in 1938-39, Rs. 25 lakhs in 1939-40 and a little over Rs. 1 crore in 1940-41. Once a position arose in which the Department had to make the best of the sources available at home, the industry obtained and requisite stimulus and encouragement and what appeared to be well nigh insoluble problems in the past have been energetically tackled and successfully solved.

It is to be remembered however that much of the wartime progress in the manufacture of drugs consists of converting imported chemicals into pills and powders and of packing them for sale. Dr. B. Ghosh in his presidential address at the Annual Meeting of the Indian Chemical Manufacturer's Association held recently at Bombay said that "the fine chemical and pharmaceutical industries are entirely dependent upon the availability of basic chemicals. At present 95 per cent of the basic chemicals are imported and thus the foundations for Indian drugs industry cannot be said to have proceeded on right lines. The future lies in starting basic chemical industries which would facilitate the manufacture of a wide variety of drugs and medicines. Though war has created peculiar difficulties regarding imports it should also be conceded that the Government of India failed to take active steps in procuring the much needed chemicals.

The problem of quinine shortage has not been tackled efficiently. Apart from the delayed rationing of this drug the Government have not taken active measures to explore the possibilities of substitutes. Mr. J. D. Tyson, Education Secretary, Government of India, stated before the Assembly in August that the Government had 240,000 lbs. of quinine as central reserve and that 146,000 lbs. had been allotted Provincial Governments for distribution during 1933-44. The stocks evidently cannot last long and in the absence of a definite possibility of recapturing Java something must be done to provide a cure for malaria. Some attempts have no doubt been made to extend the cultivation of cinchona but scientific methods have not yet been fully adopted to increase the alkaloidal content of Indian chinchona. The Madras bark contains only 3 to 4% alkaloids whereas if the Java species of chinchona had been planted and grown in India the acute shortage of quinine could hve been mitigated. Instead of exploiting indigenous resources, applying better methods of cultivation and encouraging manufacture of substitutes like "Laverian", the Government chose to import quinine from abroad. In view of the enormous loss of lives for want of quinine the Government should, without further loss of time, extend cinchona cultivation and give every possible help to manufacture of substitutes so that even in postwar years India could be free from dangerous dependence on foreign sources.

War has however offered brighter prospects for the greater recognition of Indian drugs. The question of standardisation of Indian drugs has been taken up by the Government of India and under the direction of Lt. Col. Sir R. N. Chopra useful materials have been collected as a result of systematic investigations into indigenous drugs. It is now quite possible for the Drugs Technical Advisory Board (established under the Drugs Act 1940) to prepare an Indian Pharmacopœia. If official standards are fixed Indian drugs could be manufactured to required quality, strength and purity and doctors would willingly prefer indigenous to imported stuff.

While industrialists are clamouring for greater facilities for the production of drugs the consumers look up to the Government to keep the prices at reasonable levels. Though belated, the issue of Drugs Control Order in November marks a good beginning in reassuring the public that position would never get out of control in the matter of either the availability or the prices of drugs and medicines. Under the Order dealers are prohibited from refusing to sell drugs in stock or selling them at more than the controlled rates. 1500 drugs which are imported and commonly prescribed by doctors are brought under control. Further lists will be added to the schedule in the light of the experience gained from the actual working of the Order. Though the Government seem to try to bring the prices to prewar levels, it is generally conceded that this is impracticable and that an increase of 33 1/3% over prewar prices can be deemed fair. The Order has created much satisfaction in the country though on minor matters like the amount of licence fee, the advisabilty of compelling registered medical practitioners to take licences, etc. the order has come in for adverse criticism. The success of the Drugs Control Order—which is applicable only to British India now and should be extended to the Indian States also—depends upon the co-operation of the several provinces in the matter of effective control of the black markets in drugs.

The problems in respect of the major items were given in the earlier issues of the Year Book. It should suffice here to list briefly the more important of the drugs, whose production at home represents a creditable achievement.

Amongst these may be mentioned Chloroform, Chloral Hydras, Bleaching Powder, Acidum Aceticum Glaciale, Acidum Carbolicum, Acidum Cresylic for the manufacture of Saponified Oresol, Lysol, Oleum Terebinthinæ, Acidum Trichloraeticum, Ammonium Chlorde B.P., Ampoules Gum Saline, Amylis Nitris B. P., Carbonei Tetrachloridum, Anti-mosquito Cream, Injectio Bismuthi, Liquor Formaldehyde, Oleum Anisi, Sodii Tauro-glyccocholate, Taurolycocholate, Stains, Xylol, etc. Anæsthetic ether is now being produced at the rate of 15,000 lbs. a month compared with about 1,500 lbs. per month before the war.

The manufacture of Caffeine Citras in India has also been encouraged by the orders placed by the Medical Stores Department. This drug was formerly extracted from coffee beans by Dutch and German chemists, who sold the extracted coffee as a purified form of coffee free from any harmful drug.

Hence the Dutch and Germans were able to supply Caffeine in India at a price with which the Indian manufacturer was unable to complete. Tea planters in India are now placing tea waste at the disposal of Indian firms instead of exporting it. These firms are therefore able to manufacture caffeine at rates which are lower than those at which it is obtainable elsewhere. A new and stable industry has thus been established.

Among other items recently manufactured on a large scale in India are Potassii Permanganas from Indian manganese ore, Creosote from Indian wood distillation products, Niketha mide, a derivative of Nicotonic acid etc. Liquid Glucose was also for use in the manufacture of textiles. It is now produced in large quantities in India from Indian starch.

The manufacture of Alkaloids in India is still in its infancy. Strychninæ Hydrochloridum is the only alkaloid which was produced on a large scale and the only one of which India has so far a monopoly. Emetine Hydrochloride is now produced from Ipecacuanha grown in Bengal. The manufacture of Atropine sulphate has been recently taken up and the Medical Stores Department has placed a trial order with a firm manufacturing it.

Large amounts of Ethyl Chloride are being produced in India and glass containers for this item were for a time difficult to obtain but a firm in Calcutta has now produced a container which is considered satisfactory.

Against an urgent demand last June over a thousand pounds of Morphine was manufactured within a few months. The manufacture in India of tinctures, liquid extracts and other spirituous preparations now ex-

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The Medical Stores Department has endeavoured on many occasions to stimulate the growth in India of many of the Pharmacopoeial drugs. It has also utilised the species of many vegetable drugs already growing in India in place of the British Pharmacopoeial variety of Gentian, Datura, Rheum, Lobelia, etc. This was done after verification that the therapeutic action of the drug was similar to that of the pharmacopoeial species of the drug.

The Medical Stores Department has also helped the extensive production in India of Oleum Hydrocarpi, a vegetable oil made as a cottage industry in Malabar. This oil is the chief therapeutic agent in the treatment of leprosy and was developed by the Medical Stores Department who encouraged the use of this oil and installed in their Madras factory the largest plant in the East for the manufacture of the Ethyl Esters of Hydrocarpus oil. The oil previously was expensive but is now as cheap as any of the ordinary Indian vegetable oils.

The manufacture of essential oils has not been taken up extensively. Apart from sandalwood oil there has been no widespread manufacture of essential oils in India. The Department by placing orders with one firm has been able to obtain certain quantities of peppermint oil and dill oil. The Medical Stores Department has been using the Indian manufactured Eucalyptus oil, although it is below the B. P. standard in its content of cineole, and is one of the largest customers of this industry. Large quantities of fixed oils, such as Oleum Ricini, Oleum Archis and Oleum Sesami, are produced on an extensive scale in India.

It is not only in the sphere of drugs that such remarkable progress has been achieved, but also in other spheres which are not less necessary for the proper functioning of the Medical Department. The work done in regard to blood plasma is well-known.

In surgical instruments, and appliances and scientific apparatus, considerable headway has already been made by Indian firms which deal in these articles. Several firms are being encouraged to take up the manufacture of articles which were hitherto imported from abroad. A striking instance is that of a firm in Calcutta which is now engaged in manufacturing Haldane's Oxygen outfits, field pattern.

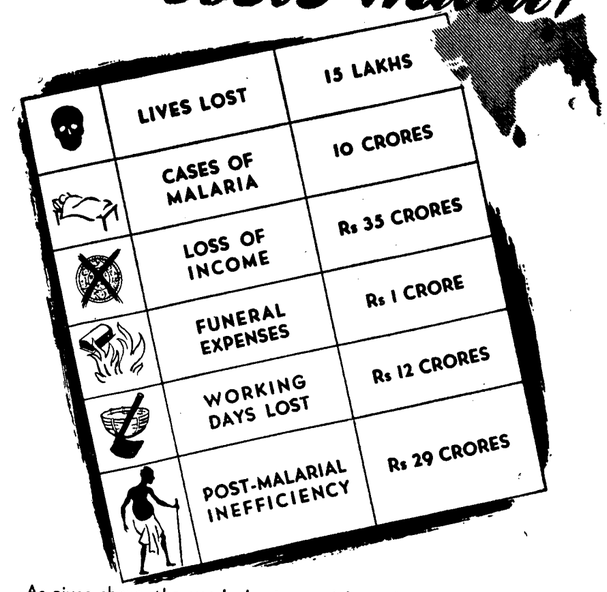
Rubber goods, such as waterproof sheeting, hot-water bottles, air cushions of good quality, are now obtainable in India. Glass of many varieties and sufficiently pure chemically to be used as ampoules for biological products and in various designs for laboratory products and in various designs for laboratory work is manufactured. There are two or three important glass manufacturers in Calcutta who make thermometers and glass stoppered bottles. All kinds and sizes of bottles are being made including stoppered bottles by several firms in different parts of the country. Improvement has been found in the resilience of samples of rubber tubing manufactured by a Calcutta firm. A firm which produces waterproof sheeting for the first field dressings and for hospital use, hot-water bottles, rubber corks and ice-bags is erecting two extra mills for work for the Medical Stores Department.

A new and up-to-date factory for the manufacture of earthenware articles has been established and the Medical Stores Department have obtained large quantities of earthenware articles for hospital equipment from this source.

One of the biggest enamel works in India is being called upon to manufacture enamelware for the use of the Medical Stores Department.

Arrangements have been made by the Director General, Indian Medical Service, for the production by private firms in India of 150,000 packets of 3-yard absorbent gauze. These packets were formerly made exclusively in Medical Store Depot factories.

What MALARIA costs India!



As given above, the yearly loss caused by malaria in British India alone is colossal. The prevalence of malaria has also a disastrous effect on the development of India's natural resources, her industries, agriculture, railways and mining. Apart from the economic loss, malaria greatly hinders the intellectual, social and national development of any people afflicted by it. How can this state of affairs be remedied? It must first be clearly recognised that tropical malaria as it prevails in India is largely quinine-resistant — quinine alone is not enough to combat it. It calls for a remedy containing, in addition to quinine, ingredients that prepare the system of the patient in such a way that quinine can perform effectively its malaria destroying function. Such a remedy is **Pyrotone**—evolved after years of research as the answer to India's malaria problem. Doctors are requested to send for Clinical Reports.



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SMALL-SCALE AND COTTAGE INDUSTRIES

WARTIME GROWTH AND FUTURE PROSPECTS

Owing to deindustrialisation and a stunted growth of large-scale industries in recent decades, the small-scale and cottage industries have assumed a special importance in Indian economy. The rapid growth in population and the utter negligence of the Government, who obstinately followed a laissezfaire policy with regard to industries while the progressive countries launched on a plan of Government interference into national economic activities, resulted in an unhealthy dependence of agriculture and cottage industries. The difficulty of procuring machinery from abroad, and the absence of adequate credit facilities and Government help made it impossible for modern large-scale industries to develop. India remained, in spite of the growth of a few big industries, the dumping ground of foreign manufactures and a source of raw materials for foreign factories. Small-scale industries, however, showed a tendency to spring up in large numbers since 1920 and, in spite of numerous handicaps and practically no organised help from any quarter, some of them managed to prosper slowly but steadily. The period of the depression hit them hard and when the war started in 1939 most of the small-scale industries and village crafts were in a pitiable position. In the struggle for the Indian market, where the cheap foreign goods and the indigenous machine-made goods participated, the scope for the products of small-scale industries was very limited. They were being driven to the wall owing to several factors. The following are the important handicaps of the small-scale and cottage industries in general: (1) Difficulty in securing adequate and regular supply of raw materials profitably. (2) Absence of an organisation to procure and distribute raw materials. (3) Lack of facilities for research so that the quality, design and standard could be improved and adjusted to changing tastes and fashions. (4) Lack of capital. (5) Absence of marketing facilities. (6) Inability to store the necessary materials to meet urgent orders. (7) The illeteracy, conservatism and lack of initiative on the part of the cottage workers. (8) Failure to realise the importance of keeping full, regular and correct accounts with a view to working out the actual cost of production.

Though many of the above handicaps are not yet removed the war has offered ample opportunities for the small industries to prosper. *First* and foremost, the rapid reduction of imports left the internal market to be exploited by indigenous producers and the higher prices held out strong incentive for greater production. *Secondly*, the large-scale producers in India, who till recently had their own share in stifling the prosperity of small-scale industries, had to take up war work well above their capacity. Owing to shipping shortage and difficulties in procuring machinery from abroad these big producers could not expand rapidly so as to serve both the civilian and military demands in full. Hence while these large-scale producers were engaged in doing war work the smaller producers, particularly since 1941 found the field less congested and hence more profitable. The inability of big factories in undertaking certain lines of production made it necessary for the Government to look up to the small-scale industries. For the production of blankets, tentage, mosquito nets, camouflage nets, parachute cloth, glassware, military hats, durries, leather and rubber goods orders had to be placed on these small-scale producers. *Thirdly*, the transport difficulties which resulted as a direct consequence of wartime developments added another stimulus to the small-scale producers. Production on large-scale and distribution on a wide area, which are of prime importance for the big factories, could not be safeguarded owing to transport bottleneck. But the modest small producers, with an eye on local needs and local tastes, could thrive better since their dependence on the transport system was comparatively less. War is a great decentraliser of productive activities and local raw materials can be had for local production on profitable basis so long as hostilities continue. *Fourthly*, the extension of electricity, the rapid construction of roads, and the stationing of large military units in different centres facilitated the expansion of certain small-scale and cottage industries. *Fifthly*, it cannot be denied that both the Central Government and the various Provincial and State Governments have tried their best to help the small-scale and cottage industries ever since the war started. The Supply Department had placed orders worth Rs. 5 crores in 1941-42 and Rs. 10 crores in 1942-43 on the small-scale and cottage industries and the above trend indicates that in future the orders would increase to substantial amounts. It is noteworthy that the first Small-scale Industries' Conference held in New Delhi in March 1942 planned to purchase 25 per cent of the war requirements from the small-scale and cottage industries. The Provincial Governments were also directed to give all possible help—supply of raw materials, financal help, technical guidance, supervision of the manufacture, etc., so that they could maximise their production capacity. In Madras for example, an expert has recently been appointed to explore the possibilities of handmade paper in the province and to organise production on cottage basis. The Forest Research Institute at Dehra Dun and the Harcourt Butler Technological Institute at Cawnpore have conducted successful research to improve the quality of handmade paper. The U. P. Government have taken steps to help the glass industry and the Benares Hindu University has undertaken research with a view to introducing more economical methods of production.

It should not be forgotten, however, that if war has offered chances of expansion the peculiar situation in India introduced special difficulties which could not be easily overcome. Stoppage of imports of yarn for instance has dealt a severe blow at the handloom weavers and the absence of dyes and necessary chemicals weighed heavily on most of the important smaller industries. The rapid increase in the excise duties was another deterrent influence on some industries like matches, leather, cigarette, soap, etc. Absence of suitable tools, machinery and technical advice has barred satisfactory growth of these industries. Though the authorities are trying to get over the difficulties, the fact remains that for the past four years the growth of the small-scale and cottage industries was too slow for the civilian population to profit. Though relevant figures show progress in industries like handloom weaving, soap, glass, hoisiery, rubber goods, cutlery, leather work, bangle making, furniture making, handmade paper, etc., they are yet to prepare for safe and sure existence in postwar years. The Government of India may not show the same solicitude for these industries after the war. The task of organising research, technical training, marketing arrangements and other problems have to be faced by these industries. When severe foreign and local competitions are restored after peace, these industries would again be

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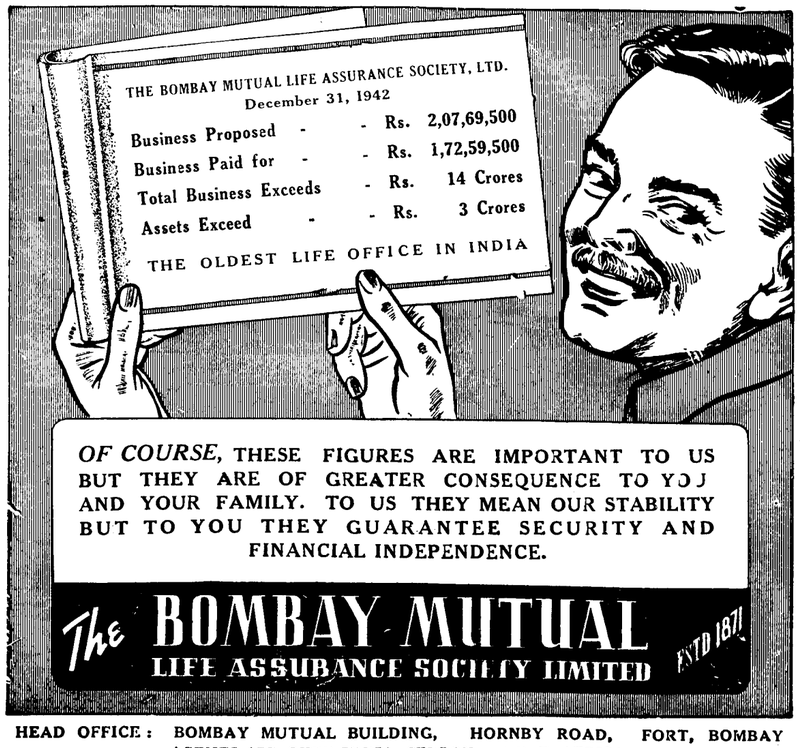
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hit hard unless they organise themselves and attend to their own peculiar needs and reduce the cost of production. The bigger industries with their enhanced productive capacity and financial strength would be able to compete against them in postwar years. If the war orders are stopped and Government set about disposing of the stocks of goods accumulated during wartime the position would become quite uncomfortable for the small producers. Their future therefore lies in co-operative organisation and research. The recommendations of the Bombay Industrial and Economic Enquiry Committee should be considered and implemented if the small-scale and cottage industries are to be placed on a sound footing in postwar years. They have suggested the establishment of Provincial Small Industries Banks with a capital of Rs. 25 lakhs each for giving financial help. The State must come forward to supply technical aid so that these industries could be stabilised and improved. With regard to the cottage industries the Committee have suggested that cottage workers should be organised with state help and substantial Government help should be extended to them over long periods. They have even gone to the length of favouring state management of these cottage industries if and wherever such a course is needed. Besides periodic exhibitions and permanent museum to popularise the products of cottage industries, the Government should decide upon a stores purchase policy favourable for these industries. The formation of Provincial Cottage Industries Research Institutes has also been favoured.

Taking a long-range view it can be safely asserted that the small-scale and cottage industries will always have their own place in Indian economy even if ambitious plans of rapid industrialisation like the recent Bombay Plan are put into effect. It has been the experience in Western countries that with the growth of large-scale industries though certain small-scale industries were crushed out of existence, the way had been paved for springing up of new small-scale industries. With the growth of heavy industries, particularly the engineering industries, numerous small-scale industries could thrive in different centres owing to the peculiar advantages enjoyed by them. Further, the displacement of labour caused by the growth of large factories require the existence of small industries to absorb them. As long as local habits, tastes, traditions and conventions exist certain small industries will tend to thrive in inspite of compettoin from the bigger ones. Certain industries like poultry farming, etc., cannot be organised on a large scale basis. In any planned development of India's industries, the earlier stages of development shall have to count upon the existence and support of smaller industries, and when the target has been achieved new lines would have been open for the further growth of smaller producers. It should also be borne in mind that national economic policies, involving tariff protectoin, drive towards self-sufficiency, etc., sooner or later fix a point beyond which it is quite unprofitable for large-scale industries to develop. When this optimum point is crossed the position actually becomes favourable for smaller units to thrive. With regard to India there is another factor which must be taken into account whenever the postwar prospects of smaller industries are gauged. The extension of electricity from urban to rural areas, which has resulted from the development of hydro-electric schemes, spurred the village handicrafts and small industries with a new vigour. If the road plan, the irrigation schemes and the hydro-electric schemes of the Government of India are initiated, there is no doubt that in several parts of India new industries would spring up tapping the local known and as yet unknown resources for common betterment. The progress of small-scale industries in Mysore and Travancore as a result of the supply of cheap electric power in urban and rural areas clearly demonstrate that the future of the small industries is not dark and dismal but only full of hope and cheer. If individual cottage industries are closely studied it is found that the big factories succeed against the cottage units not because of their greater productive capacity but mosty due to superiority in organisation and marketing. Mr. Jhaverbhai P. Patel in his recent book "Oil Extraction" has worked out the cost of production of the village ghani and the oil mills in all details and has demonstrated the above point.

It is therefore necessary that both the Government and those who are engaged in the small-scale and cottage industries should now co-operate and take steps for postwar reconstruction and consolidation. The war-time advantages have to be retained and new lines are to be opened. Safety and strength lie in the path of organisation and mutual help. While the workers can go a long way along the path of self-help it is impossible to achieve good and permanent results without active assistance from the Government. They should assign an important place for the problem of protecting small-scale and cottage industries in their postwar reconstruction plan.



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INDIA'S AGRICULTURAL RESOURCES

INTRODUCTION

ALTHOUGH the predominantly agricultural character of Indian economy is common knowledge, the vastness and variety of India's agricultural resources are often but imperfectly realised. Alike in wealth of agricultural raw materials and in food crops, this country occupies a high position among world producers of primary products, a status which in peacetime is not as well realised as it might be, partly because of the amount of ignorance that still clouds many aspects of Indian economy and partly because fiscal policy was not always designed to secure the best interests of India. In a time of war, there is naturally a greater disposition to appreciate facts more truly, because war emphasises the importance of agricultural resources and shows up the need for conserving them in the interest of not one country alone, but of a whole group of countries. And what in peace time is subordinated to considerations of the quota, the tariff and the stipulations of protocols acquires, in war time, a special importance. And its place is taken by more compelling considerations pertinent to the smooth organisation of supplies in complementary fashion among the participating countries. It is to the dawn of this spirit of realism that one must ascribe the repeated assertion of India's self-sufficiency in a variety of products.

Agricultural production of all the important commodities has, in the past two years, increased considerably and in almost all cases, there has been an expansion in the area under cultivation and, in some cases, even the yield per acre. In the beginning of this war, hopes ran high that India's position as an exporter of primary products would help to give a much-needed dose of prosperity to India's agricultural economy; and the incipient rise in commodity prices that was experienced then lent support to that hope. In fact, some went so far as to utter doleful warnings against inflationary trends in prices, but it was not long before such facile optimism crumbled in face of the hideous realities put up by the course of the war in stunning succession. The rise of the menace of U-boat warfare and lack of adequate shipping facilities were only the beginning of a series of reverses which were to culminate in the total loss of the entire Continental market. That was the last straw, as it were, and prices broke heavily and remained so for a long time. In fact, it was only with the introduction of a scheme of insurance of commodities against war risks and the confluence of a few other favourable factors that commodity prices have at all acquired steadiness. Although at current levels, commodity prices may be ruling higher than in the pre-war days, it is an incontrovertible fact that they by no means fetch a reasonable margin of profit for the producer; and the Indian agriculturist, who had fondly hoped to average up the depression prices of the last one decade, has ceased to cherish such dreams.

The underlying idea of the Eastern Group Conference, namely, the pooling of supplies as between the member countries is capable of being exploited in a manner most conducive to the agricultural economy of India. The trade returns in recent years have abundantly made clear the scope there is for expansion in Indo-Empire trade, though doubtless the similar nature of the economy of some of the countries like Australia, New Zealand, etc., sets a sharp limit to the extent of expansion that can be brought about in this manner. And it would also be futile to expect that the problems of our foreign trade can be completely solved by promoting Indo-Empire trade, great as the scope for its expansion may be. There is another factor which must go into the reckoning here. Far too much dependence on outside markets, especially Empire markets, for India's agricultural staples carries with it the implication that, in the scheme of reorganisation of supplies among the Eastern Group countries, India may well have to be content with the role of an agricultural exporter to those countries in return for imports of their machinery and manufactured goods. The trend of discussions regarding postwar reconstruction has not served to dispel this misgiving that such a contingency would be distinctly counter to the industrial aspirations of this country, which still lie in the establishment of heavy industries and auxiliary industries. To bank too much on Empire countries to bring about better conditions in commodity markets would inevitably lead to our being asked to be content with trifles, where more serious things might well engage our attention. The problem of undisposable surpluses has to be tackled by other means.

A fruitful approach to the problem lies in investigating how far the agricultural raw materials can be absorbed by the introduction of new industries. To mention only a few examples, it is common knowledge that we are yet to have a real oil industry in India, whose establishment would go far to utilise some of the surplus oilseeds that now lie idle for want of export markets. Again, new uses for cotton have been discovered and rayon manufacture alone opens up a vista of new possibilities. Most of our vegetable products would be found to be of use in the preparation of drugs, dyes and other synthetically prepared stuffs. Molasses from sugar form a good raw material for manufacture of alcohol. Fuel research has shown that coal can be the starting point for a number of dyes. Castor oil and castor oil products form a good base for main paints, varnishes, etc. Resins hold out great possibilities in the making of plastics, bakalite material and so on. The use of vegetable oils as lubricants is another highly promising line opened up. These are only a few of the many lines in which India's agricultural staples can be put to industrial use. The Industrial Research Board, by dint of zeal, can doubtless find out many more uses for them, and it may be trusted to do so. What a few years ago were nebulous projects have now been shown to be demonstrably practical and fruitful schemes. All that is needed is that these industries must be brought into being, and it will not be done unless the entrepreneur is sure of the reward for his initiative, which, in the last resort, depends on fiscal policy.

There is little doubt that a bunch of new industries engaged in lines like the ones picture above will absorb in course of time a good part of the raw material which is now lying stocked in godowns for want of export markets. And, to view it conversely, greater industrialisation for India has no meaning unless it also makes due provision for the utilisation of the immense and diverse raw materials produced in this country. The new industrial planning must have, therefore, its agricultural aspect as well. And crop planning in the present and in the future must be fully in vogue. Each provincial government shall be guided in its crop planning schemes not only by factors like rotation, outturn, yield, market demand, etc., but also with a view to their industrial usefulness. It is by this process and by this alone that the problems of our agricultural raw materials may be solved. The attainment of industrial autarchy can, thanks to science, be aided by agricultural surpluses whose disposal is found to be so difficult now. The fate of our agricultural economy must rest on the twin poles of foreign trade and internal industry. Only that way can unbalance be avoided.

The enormous variety of Indian agriculture may be dealt with on the lines of the following classification:—

Foodstuffs—

Rice, wheat, milets and pulses, cereals, etc. Luxuries like dairy products, fruits, vegetables, biscuits, etc.

Agricultural Raw Material:—

Cotton, jute, groundnuts, oilseeds, hides and skins, forest products, etc.

Minerals—

Mineral ores, coal, etc.

The rationale of a study on these lines is obvious. Its greatest virtue is perhaps that it emphasises the immensity of the country's resources of every kind. The following studies would have served their purpose, if they suffice to impress this truth on the reader.

Geography determines the fate of Indian agriculture completely, and man has done little to modify geography to his requirements.

The physical features and the soil of the country from the Himalayas to Cape Comorin are so varied and rich that almost all the crops which are grown in the world and which are necessary for the happiness and contented existence of man can be cultivated in this country on a scale sufficient to support a vast population. She holds the world's monopoly for the cultivation of jute, has a virtual monopoly of shellac, has the privilege of being the second largest producer of cotton in the world, while in rice she has a very large production and consumption.

From the point of view of relief or elevation, India can be divided conveniently into two regions—the region of the plains, including the great plain of Northern India lying at the foot of the Himalayas and their Eastern and Western off-shoots and the coastal Plain of the Peninsula. India consists of two narrow strips of low-lying country between hills and the seashore and secondly the region of the tablelands including the Deccan Plateau and the Deccan Foreland. The region of plains maintains some of the world's highest densities of population and is characterised by dry winters and wet summers. The summer monsoon during its passage westward gives more rain in the northern submountain tract of the Ganges valley than in the south and becomes weaker and weaker as it moves up from east to west. The monsoon rainfall,

therefore, decreases from east to west and from north to south of the vast plains in the north of India. Thus, the natural regions arranged in order of diminishing rainfall are the valley of the Brahmaputra and the Surma, the valley of the Ganges and its tributaries, and the valley of the Indus and its tributaries. The coastal plains of Peninsular India represent a distinct monsoon region dependent for its agricultural economy on somewhat different conditions of relief, climate and rainfall. Generally speaking, over the greater part of India, the monsoon months are between June and October, three hot months of the year, the intensity depending upon the position of the mountains.

The nature of the crops raised and the periodicity of the crops depend on the monsoon and the fertility of the soil. In tracts which enjoy the advantage of heavy rainfall and good cultivation, the main crop is rice, while in regions that do not possess these advantages, wheat is the standing crop. The predominance of rice cultivation co-exists with a high density of population, while wheat crop is found to exist along with low density. In the coastal plains in the south, there is the plantation region growing tea, coffee and cinchona on the one hand, the rice region on the other with small patches of land devoted to sugarcane or garden crops, or pulses and millets strewn in between. The combination of food and non-food crops is also noticed in varying proportions. In the first place, there are the cotton growing and Salem districts) where low rainfall comareas of the rice zone (in the Coimbatore birfes with black cotton soil. There are again prosperous areas having a sound economic basis of two food crops like rice and jowar, the latter also yielding good cattle fodder in addition. Conforming to these monsoonic conditons and soil productivity, India, broadly speaking, can be said to have two cropping seasons—the *kharif* or the rainy season crop in which the sowing is undertaken in June or July and harvesting done in October and December; and secondly, the *rabi* or the cold weather crop where the sowing is undertaken in October and harvesting in April and May. This is but the general rule to which there are a number of exceptions. In the south, for instance, there are even three crops of rice, and areas where irrigation is by means of canals, contain crops of longer duration like cotton where sowing is done in the rains but harvesting is not done till late ni the cold weather.

Agriculture is the mainstay of the peasant and is carried on with crude and time-worn implements like the plough and the cattle, the labour being provided mostly by the members of the peasant's family. The peasant's family is the unit for all practical purposes, the village being the smallest administrative unit of rural economy. Mechanisation of agriculture has not made any appeal to the Indian ryots, whatever mechanisation there is being confined to the utilisation of the Agrico tools and implement and mechanical processes for irrigational purposes, mainly because of the smallness of holdings. Agriculture provides directly or indirectly employment for the great majority of the people. The census of 1941 shows that more than 60 per cent of the total population of 383 millions depend on pasture and agriculture for their livelihood.

Cultivation of food-grains, therefore, claims the foremost place in the agricultural economy of India. The staple food of the people is rice, and wheat occupies the second place. Though Inda is the largest producer of rice in the world, and the second largest in the case of wheat, her export trade in both these commodities is of little importance, as most of the production is consumed within the country.

The above gives a rough idea of the importance of agriculture in India's national economy and the diversity of the crops raised and should serve as a sufficient background for the detailed examination of the extent of the cultivation and importance of individual crops. But before proceeding to such a detailed examination, of the crops raised—between food crops and non-food crops, the distinction is, of course, not a happy one for what is food crop in one area is also a cash crop in the same or other area. But since this distinction is apparent in each stage, this can form a convenient and useful starting point. Of the cultivated area, approximately 217 million acres are taken up by food crops, and the rest by non-food or commercial crops. The principal food crops are rice, wheat, barley, jowar, bajra, ragi, maize, grain and pulse, while among the cash crops are cotton, jute, sugarcane, oilseeds, drugs and narcotics, fodder crops, etc. The table given earlier serves to bring out the relative importance of each.

The cultivation of jute is a monopoly enjoyed by India and is mainly confined to the Province of Bengal, though Bihar and Assam also grow the same fibre to a comparatively small extent. There is a big industry in jute spinning and weaving situated in and around Calcutta which supplies a considerable part of the world's demand with jute manufactures. About 60 per cent of the jute production is absorbed by the industry, while 40 per cent is exported. Calcutta is the centre of the jute trade, not only for India, but to the world in general.

Sugarcane occupies only 1.4 per cent of the total area sown, but its importance to India is immense. Ten years ago, India was importing sugar to the time of Rs. 15 crores annually. But to-day, sugar manufacture is one of the most important industries in India. With the growth of the industry, the cultivation of cane also developed and India now occupies a proud first place among the sugarcane growers of the world. In 1939-40, the total area sown amounted to 3.6 million acres, yielding raw sugar of 4.5 million tons approximately. The United Provinces, Bihar and Orissa are the chief producers of the crop, though the cultivation extends to all other provinces.

The cultivation of fruits and vegetables has not gained much importance in India. The chief impediments in the way of any development in this sphere are the lack of transport facilities, prohibitive railway freights and lack of cold storage facilities. The total area under fruits and vegetables in 1936-37 was estimated at 4.8 milloin acres. There is vast scope for development in this industry in India and it is hoped that the recent flotation of several joint-stock companies to build and cold storage vaults in all important towns in Northern India should go a long way to assist the progress of fruit culture. Yet, cheap railway freight and transport facilities are, without doubt, the most vital needs of the trade.

The normal outturn of the various crops in India depends mainly on the timely monsoon rains. But in recent years, irrigation has been resorted to on an extensive scale in tracts where rainfall is most precarious and the Government of India have been devoting more attention for the development of irrigation facilities. In lower Burma, Assam, East Bengal and Malabar Coast, where the rainfall is ordinarily heavy, the crops hardly need any irrigation, unless an unusual scarcity of rain occurs. The total area irrigated in 1938-39 amounted to 53,730,420 acres. Of this about 24.4 million acres were irrigated from Government canals, 3.5 million acres from private canals, 13.2 million acres from wells, 6.2 million acres from tanks and 6.7 million acres from other sources. Of the total area irrigated in India, the Punjab accounts for 29 per cent, U. P. 21 per cent Madras Presidency 18 per cent, Bombay 10 per cent, Bihar and Orissa 10 per cent and other Provinces 12 per cent. In the Punjab, of the total sown area 54 per cent is served by irrigation, 44 per cent in the N.-W. F. Province, 38 per cent in Ajmer-Merwara and 30 per cent in the United Provinces.

A substantial portion of the revenue of the Government of India is derived from the land. There is a general complaint that the peasant is heavily taxed and that it is out of all portion to his income.

Land revenue is assessed in British India under three heads, *viz.* (1) raiyatwari; (2) zemindari or village communities (temporarily settled); and (3) zemindari (permanently settled). When the revenue is assessed by the State on individuals who are actual occupants or are accepted as representing the occupants of smaller holdings, the tenure is known as raiyatwari. Under this system, there may be rent-paying subtenants. In the second category, *i.e.*, zamindary or village community, the revenue is assessed on an individual or community owning an estate and occupying a position identical with or analogous to that of a landlord. The tenure may be either temporarily settled, *i.e.*, land revenue is fixed for a limited number of years only, or permanently settled, and if the latter is the case, it falls under the third category, zamindary (permanently settled). 679,482,374 acres. About 50 per cent of the total area is held by raiyatwari proprietors, 30 per cent by temporarily settled proprietors and 19 per cent by permanently settled zamindars.

Agricultural products hold a predominant position in the export trade of the country inasmuch as they constitute nearly 60 per cent of the total value of exports from India.

The above review relates only to the conditions in British India and information with regard to the conditions in the Indian States is unreliable inasmuch as existing statistics are incomplete and inadequate. But taking a general view of things one can boldly say that agriculture in most of the Indian States is not in any way better in comparison with the conditions prevailing in the British provinces. Though in recent years some of the progressive states like Mysore, Cochin, Travancore, Baroda, etc., are pursuing a vigorous policy towards improving the conditions of their agricultural population, their success, no doubt, depends to a great extent on the general policy of the Government of India, because the economic nexus between both is intimate.

The total area covered by Indian States and the specially administered areas of the North-West Frontier Provinces and Baluchistan amount to about 476 million acres, with a population of about 78 million. The agricultural statistics of these States are defective and incorrect, as their administrations are not maintaining any statistics at all. The States supplying information to the Government of India's statistical Department number only 77, comprising about 55 per cent of the total area. The surveyed area in all the reporting states exceeds 145 million acres. Out of this, the net, area sown in a year amounts to only 50 per cent. Of the net area sown 75 per cent is covered by food-grains, 10 per cent by oilseeds, 10 per cent by fibres and 4 per cent by fodder crops, the remainder being under miscellaneous crops. Almost all the crops produced in British India are grown in Indian States.

The foregoing survey is in no sense a comprehensive survey of India's agriculture or the problems thereof. The latter hardly admit of any useful treatment in the course of a short article. The aim, therefore, is rather to show the relative importance of the principal crops and to enable an appreciation of the extent to which the prosperity of India's agriculture is dependent on the internal conditions. The division between food-crops and money-crops will also, we trust, be apparent at every stage.

RICE

Rice is in many respects the most important of India's agricultural products. It is the staple food of millions: It is grown over a wide area and in sufficient varieties. There is the coarse variety in which the grain is short and thick as opposed to the finer type in which the grains are thin and elongated and which are considered a delicacy. There are certain types where the grain is white, some others with a yellow tint and yet some more with a reddish streak in the grain. There are also certain types with a peculiar scent and flavour and are priced accordingly. The total acreage under rice in 1942-43 was 73 millicn which is far in excess of the acreage under any other crop, or any combination of other crops. The following table gives the area under rice cultivation in India over a number of years with the annual production:

Year	Acreage (1,000 acres)	Yield (1,000 tons)
1930-31 ..	69,663	27,055
1935-36 ..	69,960	26,201
1935-36 ..	83,556	28,269
1936-37 ..	85,210	32,593
1937-38 ..	72,554	26,763
1938-39 ..	72,574	23,577
1939-40 ..	72,340	25,257
1940-41 ..	73,059	22,150
1941-42 ..	73,579	25,351
1942-43 ..	74,919	24,533

The main zones of the rice cultivation are Bengal, Bihar, Orissa and Madras. It is generally regarded as a winter crop, being harvested in December and January, while the sowing season extends from May to August, though two other less important crops are also raised in districts with exceptionally favourable rainfall or water supply. Cultivation is either by broad sowing of the seeds on a ploughed field, generally adopted with coarse varieties, and by transplanting of young plants from nursery beds, usually followed in the case of finer varieties. The yields from the two forms of cultivation show up the difference in a marked degree. The rice yields are generally not very heavy in India compared with other rice-producing countries of the world, but that transplanting yields better results is accepted. The All-India average yield per acre is about 800 lbs. per acre, but transplanted rice in really good conditions may give as much as 3,000 lbs. per acre, while even a yield of 4,000 lbs. is not uncommon where good manuring has combined with satisfactory irrigation and transplanting. The comparative figures of India's output of rice with other rice producing countries of the world gives interesting information:

PRODUCTION OF RICE.

(In Quintals 000's omitted).

	1933.34	1934.35	1935.36	1936.37	1937.38	1938.39	1939.40
British India ..	471,516	461,310	425,672	496,499	408,295	356,690	385,320
Japan ..	131,457	96,214	106,638	124,981	123,087	118,945	128,056
Dutch East Indies	53,144	57,588	57,476	...	...	...	...
Siam ..	50,077	45,978	47,270	33,799	45,557	49,374	50,827
Korea ..	33,765	31,027	33,193	36,311	50,128	45,155	26,644
Formosa ..	15,121	16,869	16,923	17,740	17,136	18,220	16,883
Madagascar ..	7,228	6,869	6,300	6,800	6,440	4,400	...
U. S. A. ..	7,685	7,970	7,917	10,169	10,894	10,676	10,677
Italy ..	6,915	6,730	7,352	7,340	7,913	8,180	...
Asia ..	850,060	795,000	786,000	873,100	877,300	840,000	850,000
Africa ..	20,800	20,000	22,000	20,400	20,600	17,200	20,000
Europe (excluding U.S.S.R.) ..	11,171	11,536	12,413	12,200	12,500	11,800	12,000
South America ..	15,200	16,900	15,000	16,000	16,300	...	...
World ..	909,000	856,000	848,000	937,000	939,400	902,400	916,000

The position of rice in each Province is somewhat different in that the proportion between the exports and internal consumption in each province is not the same. But as a rule, each province consumes a major portion of its production. Bengal and South India are in a unique position in that they enjoy an export trade in the better quality rice and import part of their requirements of low grade rice from Burma. India's export trade is governed largely by forces of competition from Burma and Siam, the two neighbouring rice producing countries, and hence prices have been subject to severe fluctuations in pre-war years and India's position in the export market proved to be more vulnerable than one would have suspected a decade ago. The following table brings out vividly the changes in India's export trade in rice:—

RICE NOT IN HUSK.

(in Tons).

	1932.33	1933.34	1934.35	1935.36	1936.37	1937.38	1938.39	1939.40*
Exported to United Kingdom	75,210	71,415	88,375	50,122	53,754	5,864	6,446	3,543
Germany ..	228,106	246,113	157,934	79,209	53,831	103*	103	...
Netherlands ..	95,641	80,885	62,408	69,799	111,724	5,743	3,200	1,489
Ceylon ..	394,314	403,329	391,501	423,706	427,591	91,101	104,953	71,421
Straits Settlements ..	156,479	153,971	135,436	138,418	161,495	7,761	11,147	7,307
Sumatra ..	62,491	69,805	70,013	74,744	47,210	...	...	...
China ..	233,230	170,613	173,425	71,747	16,585	4	12	...
Egypt ..	36,285	24,102	29,883	13,706	9,166	30	46	...
Cuba ..	39,043	46,190	16,715	25,449	32,020	3,15	2,887	2,031
Other countries	506,804	466,086	466,847	446,715	543,654	113,52	129,365	124,592
Total..	1,828,196	1,732,539	1,592,517	1,393,615	1,457,030	..	280,557	..

*For ten months.

Under the Ottawa Agreement the United Kingdom and some other British colonies have granted to Indian rice a preference to have shown little encouragement to think that the preference has conferred any real or lasting benefit. Though in point of quality, Indian rice is no way inferior to that of the Spanish or American product, now commanding a good market there, Indian rice is shut out on the plea that it is not sufficiently polished or well-finished. The rice trade within the country is not also well organised and the majority of traders are at times negligent in meeting the foreign demand. There is a good field to explore. The better qualities of Indian rice can be exported to British Empire. The preference that had conferred no benefits can be made to yield results.

The rice problem is different now. Even at the end of 1941, it was not possible to bring in the usual supplies of rice from Burma owing to the acute scarcity in regard to shipping. The entry of Japan into the war and the rapid success of the Japanese culminating in the occupation of Burma cut off all sources of supply so far as this country was concerned. Even the U. K. had to arrange with the West Indies for their requirements though they were prudent enough to lay in adequate stocks of rice from Burma before that country fell into enemy hands. The usual imports in this country of Burma rice is of the order of 2½ million tons and it is this shortage that has been mainly responsible for the difficulties in regard to this staple commodity. This shortage by itself could not perhaps have been so greatly felt, if the demand had remained at the same level and if we were not obliged to export to countries in the Persian Gulf area and to our little neighbour Ceylon. Efforts were made to increase the growth of other food crops to bring about a reduction in the consumption of rice. The propaganda made by the Government in this regard certainly met with success, though not to the desired extent. The shortage of rice was felt as in the case of wheat after April and there was naturally considerable opposition to the proposal by the Ceylon Government for substantial supplies from this country to relieve her distress. It was true that Ceylon's stock of rice had run very low, and it was found necessary to ration drastically the consumption of rice and it was only when the situation got out of hand the Government sent a representative to this country for negotiating for a quantity of 38,000 tons of rice per month. The Government of India had undertaken to supply Ceylon to a certain extent and had to effect some exports on this account. But when it was felt that in this country the position was

getting definitely out of control and that there was great popular resentment, the exports to countries other than Ceylon were stopped. From March, 1943 exports of rice have been totally stopped. The co-operation of the provincial governments, especially the surplus provinces, is being sought to bring about a proper distribution of the quantity of rice available in this country and with the ration scheme now mooted it is hoped that it will be possible to get over the difficulty.

It is felt that with the further increase in the foodgrains, as a result of the grow-more-food campaign, it would be possible to meet all the demands in respect of rice in the next season. Against the usual deficit of 2½ million tons, it is pointed out that there may even be a surplus of 1 million tons and that no great difficulty will be experienced. The figures given below show that there has been an all-round increase in the acreage and that the yield is expected to be a record for all time.

The total area reported is 76,075,000 acres against 71,519,000 acres (revised) at this time last year, or an increase of 6 percent.

SECOND RICE FORECAST 1943-44.

Provinces and States.	Area.	cleaned rice Outturn of	per Yield acre.
	(1,000 acres)	(1,000 acres)	lbs.
Bengal (a)	26,026	11,375	979
Madras	9,523	4,636	1,090
Bihar (a)	9,610	3,217	750
Central Provinces and Berar (b)	7,664	2,369	692
United Provinces (including Rampur State) (a) ..	7,088	(d)	...
Assam (a)	5,040	1,953	868
Orissa (a)	4,918	1,317	600
Bombay (including Indian States)	2,612	1,088	933
Sind (including Khairpur State)	1,323	451	764
Punjab	v,185	(d)	..
Hyderabad	751	(d)	...
Baroda	304	(d)	...
Bhopal (Central India)	31	(d)	...
Total for 1943-44 ..	76,075	...	...
Total for 1942-43* ..	(c)71,519	...	...

*Corresponding estimate.
(a) Including autumn and winter rice.
(b) Including Eastern Agency States, formerly Central Provnices States.
(c) Revised. (d) Not yet available.

WHEAT

In the group of cereals, next to rice, wheat is the important food crop. There are broadly two pieces of wheat grown, the normal "bread" wheat of Europe and the so-called "macarioni" wheat. The first one is grown as an irrigated crop in the Punjab, Sind and the United Provinces, while the latter variety is grown extensively in the clayey black soil in Bombay, the C. P. and in some parts of the Nizam's Dominions as a rainfed crop. A large number of good varieties of wheat have been produced by the Agricultural Departments of the Provinces, though their cultivation on an extensive scale has not progressed very far,—for instance the pucca wheat and I. P. wheat bear the stamp of research, while the popularity of the Punjab types like C 891 and C 518 reveal the definite attempts to grow improved varieties on a large scale.

India is, no doubt, one of the largest producers of the commodity in the world, the table on this page showing the All-India production of wheat along with the output in the principal wheat producing countries in the world.

The acreage under wheat cultivation has steadily increased. From 31,654,000 acres in 1929-30 the acreage expanded steadily to 36,077,000 in 1933-34 and dropped to 33,215,000 in 1936-37, again improving to 35,291,000 in 1937-38 and stands at 34,298,000 in 1942-43. The yield, however, stands at the high level of 10,971,000 tons in 1939-40. But for all the importance of this crop and the immensity of the production, Indian wheat has no international importance. Nearly the whole of her output is consumed within the country. During recent years her exports have dwindled to practically nil; in fact India even figured as an importer of wheat from Australia not long ago which forced the Government of India to impose a duty on imported wheat. But there was a flickering revival in exports and imports. In 1936-37 the exports totalled 232,000 tons rising to 460,000 tons in 1937-38 though it dropped to 279,000 tons in the year following.

The outbreak of the war opened out fresh possibilities for wheat. At one time, during the 1914-18 war, exports reached 1,700,000 tons in a year. This war, however, is different from the last in many respects but the likelihood of Indian wheat finding a market in the Eastern Group countries can be profitably examined.

Production of Wheat
(In Quintals 000's omitted)

Countries	1925-26	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39	1939-40
British India ..	87,213	95,914	95,204	98,851	95,772	99,083	107,672	100,934
U. S. A. ..	223,855	143,966	143,263	170,466	170,498	238,324	253,327	338,729
Canada ..	117,220	76,720	75,075	76,731	62,384	49,046	95,259	133,256
Argentine ..	66,142	77,870	65,500	38,380	67,450	50,295	87,009	32,510
Australia ..	37,015	48,264	36,305	38,809	40,709	50,964	41,096	57,700
U. S. S. R. ..	215,240	277,300	304,100	308,300	309,000	442,000	..	78,000
France ..	79,295	98,611	92,129	77,552	68,979	70,173	94,000	78,000
Germany ..	32,595	56,043	45,327	46,672	44,269	44,668	55,780	..
Roumania ..	28,721	32,406	20,835	26,247	35,031	37,601	48,214	44,528
Europe .. (Excluding U.S.S.R.)	386,677	501,698	448,567	454,266	441,069	458,000	544,000	510,000
Asia .. (Excluding U.S.S.R.)	115,820	128,980	123,660	131,880	125,100	163,680	42,200	143,200
World .. (Excluding U.S.S.R.)	997,500	1,040,200	953,200	569,600	959,900	1,036,700	1,226,400	1,150,000

The problem of distribution became very acute since the Japanese entry into the war and it proved almost incapable of solution after April 1942. So far as wheat was concerned even with all the efforts to increase the wheat cultivation, it was not possible to get adequate supplies especially as there were reports regarding exports to Iran and large-scale buying by the U.K.C.C. The demand on account of the defence services also increased, so that the increased control price of Rs. 6-8 per maund had no significance on the 'black market' values. The Government of India was obliged to suspend buying for export to other countries and to arrange for wheat supplies to Iraq and Iran from Australia. The announcement of this decision by the Government did not have the desired result. The large hoarding movement and the unco-ordinated buying by the defence departments were not also helpful. Even in the Delhi area there was an acute shortage and it was necessary for the Centre Government to requisition stocks lying in the godowns in the Delhi district. A Wheat Commissioner for India was appointed to look after the proper distribution and allotment of wagons for approved dealers. The provincial governments gave a lot of trouble by banning the export of wheat to other provinces. It was only after this that efforts were made to bring about a co-ordination of the activities in the several departments and the Wheat Commissioner with the Assistant Wheat Commissioner was able to bring about a certain amount of order out of the confusion that was prevailing in the country for a very long time. In spite of all the efforts of the several governments the main question is one of getting adequate supplies. In order to relieve this acute shortage it was decided that substantial shipments of wheat should be brought in from Australia and the British Government promised the Government of India to provide the necessary shipping in this regard. The shortage of wheat is felt especially in Bombay and Calcutta areas and it is to be hoped that with the new shipments the scarcity in the affected areas will, to a certain extent, be removed. Wheat is now decontrolled. The maximum price of Rs. 6-8 per maund is no longer in force as it is pointed out that the British Government will be able to supply this country with wheat at a much lower price and that this possibility will have the desired effect on values in the free markets.

The only commodity that did not give any great trouble to the administrative authorities in 1943 is perhaps, wheat. Thanks to the larger increase in yield in the wheat producing centres and the import from overseas countries, there has been a great improvement in the statistical position. Restrictions regarding the purchase and sale of wheat were removed long ago. Wheat was the first commodity to be de-controlled and ceiling prices were removed owing to the availability of large stocks. Prices kept low in relation to other commodities. It is now pointed out that there has been import of foreign wheat at lower than the market quotation of Harpur and Lyllapur. This it is pointed out should result in a further readjustment of values.

MILLETS

In the cereals group rice and wheat are, no doubt, the foremost crops, but there are other crops as well—commonly known as millets—not so important but nonetheless

largely cultivated. There are different varieties of millets, the climate and the soil being very favourable for their growth. The Northern and Central Provinces variety of the great millet is known as jowar while in the South it is commonly recognised as cholam. This is the food alike for man and cattle, the grains forming the man's food while the cattle get the stem, stalk and the leaves. Here again, some varieties are sweet, the succulent stalks of which are grown as green fodder while other varieties are adapted to the dry crop. Jower covers nearly the same acreage as wheat and the grain yield is also just about the same, about 9½ million tons. It is unfortunately not an export crop and is consumed within the country. Researches are, of course, in progress at the various centres with a view to the introduction of improved varieties and facilitating dry farming. The followng table gives an idea of the acreage and yield over a period of the past ten years:—

JOWAR

Year	Acreage (1,000 acres)	Yield (1,000 tons)
1929-30 ..	35,236	6,878
1930-31 ..	35,173	6,928
1931-32 ..	33,887	6,149
1932-33 ..	33,449	6,412
1933-34 ..	32,167	6,138
1934-35 ..	33,478	6,255
1935-36 ..	32,825	6,159
1936-37 ..	37,220	7,098
1937-38 ..	33,489	6,506
1938-39 ..	33,812	6,435

Bajra is another millet grown both in Northern and Southern India where it is known as Cumbu. The silky feel of its grain has earned for it the name of pearl millet, but its hold on the Indian ryot is chiefly due to its easy cultivation. It tolerates poorer soils and scantier rainfall than others of its class and provides food and fodder for man and his cattle. In food value its grains are regarded as being much richer than rice and in this respect ranks only next to Ragi, another of the millet group. Its extensive cultivation can be gauged from the following figures:—

BAJRA

Year	Acreage (000 acres)	Yield (000 tons)
1929-30 ..	17,271	2,284
1930-31 ..	17,524	2,583
1931-32 ..	18,310	2,673
1932-33 ..	18,699	2,598
1933-34 ..	16,552	2,128
1934-35 ..	17,031	2,549
1935-36 ..	16,911	2,681
1936-37 ..	16,103	2,433
1937-38 ..	17,242	2,625

Bajra, too, is not an export crop and like ragi which is akin to it in all respects—richness in food value, fodder value and easy cultivation—is mainly the poor man's food. Many consider ragi as domesticated grass but its growth is mainly confined to Peninsular India.

GRAINS AND PULSES

Next in importance to the cereals is the group of pulses or the various grams or *dal* as they are popularly known. There is in this country quite a good range of pulse crops the value of which is twofold. From the point of view of nutrition, the pulses help to balance the diet, these invariably supplying the protein element as against the starch of rice. Secondly, these are builders of soil fertility on account of their power to absorb nitrogen from the air through their roots and so are of great value as an ideal crop for rotation. The practical utility of the pulse crop has been demonstrated at an experimental agricultural station where it has been found that the effect of a gram crop was enough to wipe all differences between manurial treatment given to the succeeding grain crop. Hence these are usually grown as mixed crops particularly with millets, the latter ripening first and therefore being harvested first. Again these provide the fodder for the cattle, since both their seeds and stem are excellent cattle fodder. The conditions of cultivation are also less rigorous in the case of pulses than in those of rice or wheat. These require comparatively less rainfall and less attention from the ryot.

There is quite a good variety of grains and pulses in the country. Tur also called *Arhar* or rahar is widely cultivated, being the most important of the group; grown chiefly in the rainy season, while grams proper is mainly a dry crop. The annual areas and yields of gram for the year 1929-30 to 1938-39 are given below:—

Year	Acreage (000 acres)	Yield (000 tons)
1929-30 ..	13,175	3,051
1930-31 ..	15,223	3,400
1931-32 ..	17,735	3,766
1934-35 ..	15,638	3,629
1935-36 ..	16,687	3,840
1936-37 ..	17,626	4,115
1937-38 ..	15,742	3,525
1938-39 ..	17,216	2,540

There does not appear to be any extensive export trade in grains and pulses, whatever grown being consumed in the country. What little export there is, is confined to those places where Indian emigrants have settled on a permanent or semi-permanent basis. The possibility of uses of these pulses by the neighbouring countries might be advantageously considered.

JUTE

India holds the world monopoly for the cultivation of jute on a commercial scale. The growing of the crop is confined almost entirely to the Gangetic delta and the Brahmaputra valley. Jute is a fibre extracted from the bark of the plant by retting in water, and then washed and dried. Bengal produces about 90 per cent of the total yield, and the remaining quantity is grown in the adjacent provinces of Bihar, Orissa and Assam. The importance of jute to the world does not arise from its being a pre-eminent commercial product alone; its bearing on the entire economic structure of the province itself, is unique. Though in respect of the total acreage sown in Bengal, jute is only second to rice, covering 10 per cent as compared with 72.5 per cent under rice (mean percentage for the decade 1921-30), the jute trade is in sharp contrast with that of rice, in as much as the former brings in money from outside the country. The value of the annual exports of jute and jute manufactures in peacetime accounts for a high percentage, not only of the total value of the provincial exports, but also of the entire Indian exports. While jute and jute manufactures account for about 50 per cent of the total value of exports from Bengal, these two items alone contribute more than 25 per cent of the total value of exports from India.

While the figures given above prove the immense importance of jute to the agricultural interests of Bengal, its superiority as the most remunerative crop from the point of view of agricultural economy is equally commendable. Of the four important agricultural products in India, *viz.*, rice, wheat, jute and cotton, as far as the market value of the produce per acre is concerned, jute occupies distinctly the highest place, as illustrated by the following table:—

(Average Figures for 10 years, 1904-13 Inclusive)

Crops	Area in 1,000 acres.	Yield 000's omitted.	Yield per acre.	Wholesale price per md.	Market value of produce per acre.
		Tons	Mds.	Rs.	Rs.
Rice ..	569,895	24,025	11.5	4.75	54.52
Wheat ..	28,145	8,752	3.4	3.73	31.33
		Bales			
Cotton ..	20,980	3,837	0.88	28.30	25.64
Jute ..	3,144	8,299	12.9	9.68	128.79

From the above table, it can be ascertained that, while the value per acre of jute produced amounts to about Rs. 129, the value of rice, the chief food crop of India, amounts to only Rs. 55, whereas the cotton crop yields Rs. 25 per acre.

Though Bengal possesses the world monopoly for the most remunerative agricultural product in India, it cannot boast of having utilized the unique position to its best advantage. For, the cultivation of jute is not regulated according to the requirements of the world. It is this maladjustment between production and demand that made jute the worst victim of the recent world trade depression, The average price of jute realised during the decade before the depression and during the depression period would give an idea of the steep fall in the price of jute.

	Average yearly production	Average harvest price per md.	Annual values [in crore Rs.]
1919-29 ..	4.70 mds.	Rs. 9-6-0	44.06
1930-34 ..	4.19 „	Rs. 3-10-0	15.20

The average income from the crop during he depression period has fallen to Rs. 15 crores from Rs. 44 crores during the decade immediately preceding the depression. Such a terrible loss to the income of the people threatened to have great repercussions on the income of the Government. Provincial Governments were urged from all quarters for immediate assistance to the cultivators. But the Government appeared to be half-hearted in taking any immediate measures. At last, the Bengal Legislative Council appointed a Jute Enquiry Committee, which, after about two years of enquiry, submitted a report. Meanwhile, the country had been caught in the grip of depression, and suffering from its effects. After great deliberation, and much leisurely consideration of the Jute Enquiry Committee Report, what the Government of Bengal decided was to launch a campaign amongst the cultivators for the voluntary restriction of the acreage under jute in the 1934-35 season. The very announcement of the Government resulted in a substantial improvement in the price of jute, though the bulk of the trade was sceptical of any success. The propaganda was not considered a great success at the end of the season; for, though the production showed a small reduction over the previous season, it

was partly due to adverse weather conditions. Again, in the succeeding three seasons, Government stuck to the same policy and started voluntary restriction propaganda. But the increased production of jute during the three seasons proved voluntary restriction to be a disastrous failure; and had it not been for the crisis of unrestricted production in the industry, jute would not have improved from the low level.

The season 1938-39 was notable for the sharp fluctuations in prices for jute. Early in the season the floods in East Bengal and the depressed conditions in the jute industry accounted for a sharp fall in prices and the lowest level for many years, of Rs. 28 in the futures market, was recorded. The Government of Bengal was at a loss to devise ways and means to improve the position of the ryot. At last it was decided to put an end to the state of over-production in the industry and improving the statistical position thereby bringing about an improvement in the prices for jute canufactures. Consequently the reduction in production would be to a certain extent reflected in the prices for jute. Not only was the rot in the jute market arrested, but a considerable improvement in prices was recorded. Only the beginning of 1939 saw a boom in jute prices. The huge orders for sandbags and the increase in exports combined with a short crop caused a scarcity of supplies. The highest price of Rs. 62-4 was recorded in the futures market.

The season 1939-40 is well-known for the hectic activity in both the jute and jute manufactures markets. Even shortly before the declaration of war, there was no indication of the prosperous times that were ahead for the ryot and the industry nor was it ever expected that there would be such a jumpy rise in prices in three months after the declaration of war.

It would be remembered that just in the middle of August, 1939, it was found necessary to promulgate an ordinance by the Government of Bengal fixing the minimum prices at Rs. 36 for jute in the futures market and Rs. 8-14 for 9 Porters hessian. This prevented a fall in prices to below the minimum price for November position in the hessian *fatka* market.

After September, however, the story was different. The placing of orders for sandbags led to a mad rush for buying by mills. There was a sudden jump to Rs. 60 per bale but the Indian Jute Mills Association by concluding a gentlemen's agreement between the members of the Association for a time succeeded in keeping down the price. The announcement of a big order for 50 crores of sandbags and the booming conditions in other commodity markets, however, could not keep down prices. The members to the "Gentlemen's Agreement" themselves were afraid that they would not be able to buy their stocks of jute at the maximum prices they had fixed. The violation of the terms of the agreement by certain members led eventually to the abandonment of the gentlemen's agreement. In December first week the peak levels for the war period were touched and the quotation in the futures market was at one time as much as Rs. 125. The rise in prices was rather overdone and as further orders for sandbags were not received, there was a tendency to sell at the higher levels. There were also various rumours afloat in the market, among them being the possibility of the fixation of maximum prices. For some time, the quotation was fluctuating around Rs. 100 but the decision to postpone deliveries of sandbags from April to August caused heavy selling and in a short time there was a slump from Rs. 92 to Rs. 72. The excellent prospects regarding the new crop and the absence of new orders for sandbags had a depressing effect and the prices gradually declined. As the satta for new crop considerably widened there was a tendency on the part of mills to sell their stocks of jute, old crop, and cover them with purchases of new crop. This resulted in the quotation coming down to Rs. 59-14. The reports regarding the fixation of the minimum prices caused a sudden recovery. For some considerable time, there were persistent rumours regarding the fixation of minimum prices. At the conference of jute interests held early in May, 1940, under the presidentship of the Governor, the Government expressed their anxiety to prevent any further deterioration in the prices for new crop. But there was no indication of the measures that the Government proposed to take to achieve such an end. In the middle of May, 1940, however, an Ordinance was promulgated fixing the minimum and maximum prices for jute and jute manufactures, the minimum and the maximum prices for jute being Rs. 60 and Rs. 90 in the futures market respectively and those for 9 Porters hessian being Rs. 13 and Rs. 21 respectively. There was considerable objection to this action on the part of the Government as it was pointed out that any attempt at artificially fixing the level of prices would eventually harm the interests of both the ryot and the manufacturer.

After a good deal of experimentation and negotiation it was decided as a result of the Delhi conference that mills should buy a specified quantity within specified dates at the revised minimum rates submitted by the I.J.M.A.

The policy of restriction pursued by the Bengal Government as a result of the Delhi Conference, it must be said, was a complete success. For, it will be remembered that at the end of 1940-41 season there was a large carry forward and that even after the substantial purchases by the mills under the Gentlemen's Agreement, which were mostly completed by April, 1941, it was found necessary to maintain minimum prices till the end of the season in order to prevent any appreciable decline in values. This maintenance of minimum prices for old crop combined with reports that there would be a drastic restriction of the area under crop for the current season had a steadying influence. After a good deal of controversy it was finally decided that the area under the crop for the 1940-41 season should be restricted to one-third of the area for the previous season. The Government of Bengal carried out a survey of the lands under the jute crop in the 1939-40 season and accordingly granted licenses to growers to sow jute for the current season. This policy of drastic restriction resulted in a smaller crop.

As regards the policy of restriction being extended to other provinces the U. P. Government have expressed their willingness to take part in the scheme. It is hoped that the Governments of Bihar and Assam will help the Bengal Government in their policy of restriction.

The area under jute is normally between 20 to 25 lakhs of acres (its maximum was reached in 1907-08 with 38.8 lakhs of acres and minimum in 1921-22 with 15.4 lakhs of acres). The average holding of the jute growing ryot is 3 acres, of which he puts 1 acre under jute. The normal outturn of jute per acre is 3.7 bales in Dacca and Chittagong Divisions, 3.5 bales in Rajshahi Division, 3.2 in the Presidency and Burdwan Divisions, 3.3 in Bihar and Orissa and 3.5 in Assam. The sowing period extends from March to May, and harvesting is carried on in June and July.

The following table gives the area under jute in the three provinces of India for the last twelve years and 1920:—

	BENGAL.		BIHAR AND ORISSA.				Total.	
Year	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.	Acres	Bales of 400 lbs.
1920 ..	2,169,000	5,247,000	179,000	330,000	125,000	275,000	2,509,000	5,915,000
1930 ..	3,062,300	9,996,000*	238,000	670,000†	185,300	595,000	3,485,600	11,231,000
1931 ..	1,613,700	5,002,700*	148,800	367,200†	99,300	196,600	1,861,800	5,565,500
1932 ..	1,845,700	6,213,500*	170,000	518,500†	127,400	340,100	2,143,100	7,097,100
1933 ..	2,168,700	7,092,100*	192,100	473,200†	130,200	367,900	2,491,000	8,012,000
1934 ..	2,347,700	7,749,500*	173,800	472,000†	148,600	303,900	2,670,100	8,525,400
1935 ..	1,917,500	6,538,000*	145,600	389,000†	117,800	312,600	2,180,900	7,239,600
1936 ..	2,251,150	8,035,900*	477,100	1,138,300†	157,500	461,700	2,885,750	9,635,900
1937 ..	2,208,900	7,072,200*	460,600	954,300†	219,150	654,600	2,888,600	8,681,100
1938 ..	2,521,400	5,754,850*	327,400	488,200†	25,000	451,300	3,073,900	6,694,700
1939 ..	2,549,600	832,200*	288,000	767,800†	281,100	557,300	3,118,700	9,646,300
1940 ..	4,938,850	11,465,200	310,600	637,350	356,200	918,500	5,668,750	13,186,450
1942 ..	...	...	...	...	...	...	3,333,000	9,062,000
1943 ..	...	...	...	...	...	...	2,602,000	6,949,000

*Includes Cooch Behar and Tripura States. †Including imports from Nepal.

The above figures are taken from the forecast issued by the Government. But private estimates of the trade have always proved to be more reliable. The following table shows the actual production of jute for the past four seasons:—

(In lakhs bales)

Season		Calcutta Imports	Exports from Chittagong	Total Crop.
1933-34	..	86.45	3.01	89.44
1934-35	..	94.92	3.01	97.91
1935-36	..	79.92	1.58	81.49
1936-37	..	104.53	2.47	106.97
1937-38	..	97.28	2.34	103.68
1938-39	..	87.21	1.91	93.62
1939-40	..	94.48	..	..

Indian mills are buyers of Jat, District and northern jute mostly, but they also buy small quantities of the Tossa and Desi varieties. The United Kingdom and Germany are our largest buyers of jute. Dundee purchases high class jute of all grades, and particularly Desi and Tossa. The Continent purchases white jute of Northern and Western grades, and also ordinary quality of Desi and Tossa.

Calcutta is the chief centre of the jute trade. Around the city on the banks of the Hooghly are situated many jute mills. Jute is purchased from cultivators in the mofussil markets, and sent to Calcutta and mill stations in kutcha bales by boats and rail. In Calcutta, it is assorted and pressed into pucca bales of 400 lbs. each by the balers. The jute balers have got an organisation of their own called the Calcutta Jute Balers' Association, who practically control the sales of ready jute. There is also a futures market for jute in Calcutta managed by the organisation limited by guarantee and holding a membership of about 300. The futures market is controlled by a Board consisting of members of the various organisations of the trade. The futures market has got an

important bearing in the fluctuations of jute prices.

In 1936, the Government of India sanctioned the appointment of an Indian Central Jute Committee, which has begun to function from the beginning of 1937. The work of the Committee includes the improvement of the crop, forecasting and statistics, production, testing and distribution of seeds, banking and transport facilities and improvement of marketing of jute. The personnel of the committee includes all interests belonging to the jute trade.

In 1937 the Indian Central Jute Committee was established with its headquarters at Calcutta. The Committee has been registered under the Registration of Societies Act XXI of 1860 and a grant of Rs. 5 lakhs per year has been sanctioned by the Government. Soon after the establishment of the office the Committee has taken up the work of making a comprehensive survey of the jute areas with a view to provide the trade with an accurate forecast of the jute crop. An enquiry into the marketing and transport of jute has been programmed. A laboratory for experimental spinning for research purposes have been constructed. The collection of accurate statistics is also undertaken by the Committee. The activities of the Committee are watched with keen interest by the trade.

No important developments took place in the first three months of 1943 and prices fluctuated in both the jute and jute manufactures markets in narrow limits. Mills experienced no difficulty in respect of their jute supplies. There was no difficulty either in regarding to working. In March 1943, a big order for hessian was received from the U. S. Government. In May of the same year another big order was received for 70 crore yards of hessian. In order to execute the first American order in time, the working hours were increased to 60 per week with 10 percent of the looms sealed. Mills reverted to 54 hours, with 10 percent of the looms sealed, from May 15, 1943. The receipt of the new order for hessian from the U. S. Government, however, upset all calculations. Owing to the impossibility of working mills for longer hours without unduly pushing up prices for jute. it was decided that mills should work 54 hours per week with all the looms working, and that the order should be accepted at the U. S. ceiling price and delivered in instalments before March 1944. With the failure of the Indian Jute Mills Association to secure higher prices than the ceiling rates fixed by the U. S. Government, the problem of securing sufficient supplies of jute at remunerative prices became important. It was agreed between the members of the Indian Jute Mills Association that jute should not be purchased at higher than the maximum prices fixed by the Calcutta Jute Mills that is, of Rs. 17 and Rs. 15 per maund for Indian Jat Middles and Bottoms respectively and that purchases of jute should be confined to the requirements under the American order. The United Kingdom and the U.S.A., were asked to keep out of the jute market to help the mills in getting their raw material There was naturally some opposition to the fixation of maximum prices without statutory authority by the Indian Jute Mills Association. Shortly afterwards maximum prices for jute manufactures also were fixed. The fears of mills being unable to get their requirements of jute at maximum prices, however. did not come true as with the floods in July affecting railway traffic, there was acute shortage of coal and mills had to reduce the number of working weeks by one every month. This arrangement continued till the end of the year and even according to the revised plan of working, steam-driven mills could not keep up to schedule and a considerable number of loom hours was lost. Consumption of jute was, therefore. very much lower and price of jute were much below the maximum fixed by the Indian Jute Mills Association.

COTTON

India is the largest producer of cotton in the world next to the United States of America. Though the total area sown under cotton amounts to only less than a third of that under rice, its importance may, in one view, be said to be even greater than that of rice, inasmuch as it is a money crop. Besides supplying the raw material for a staple industry, cotton forms a valuable item of India's export trade. More than 50 per cent of the total production is exported to foreign countries, Japan being the chief customer, while about 40 per cent. of the crop is absorbed by the mills in India and the remaining few lakhs of bales utilised by the cottage industry of handspinning and weaving.

In spite of the fact that more than half the total production of Indian cotton finds an export outlet, it does not figure as much in the international trade as the American or Egyptian cotton. For, with the exception of Japan, whose takings alone amounted to more than half of the total exports, there is no large single customer for Indian cotton. This drawback of Indian cotton is due mainly to its inferior quality as compared with the American or Egyptian product. Though several successful experiments have been carried out by the Government in the past few years and the growth of improved cotton has been encouraged, a good deal remains to be done before the Indian variety attains the standard of the foreign growths.

Apart from the question of quality, another important factor which goes to reduce the competitive ability of Indian cotton in the world trade is the backwardness of cultivation. That cotton growing in this country is still, like the rest of our agriculture, on primitive lines, is clearly evident from the extremely low yield per acre of Indian cotton. While in Egypt, the average yield per acre is about 400 lbs., and in the United States 170 to 200 lbs., in India it is only about 80 lbs. per acre, which is slightly more than half the world average of 150 lbs. The low yield per acre in India is not confined to cotton alone but it is a general complaint in all the other commodities grown in India, though one has to admit that in the case of cotton it is unreasonably low. Cotton cultivation thus offers not a little scope for the activities of the Imperial Council of Agricultural Research and the Indian Central Cotton Committee. Another important aspect of cotton in India is that its production is well spread over nearly all parts of the country and that measures for improving its position and prospects will shower their benefits on all provinces, unlike most economic measures, which may be represented to be partial to one province or two at the expense of the others. It is also significant that the cotton textile industry in India is not merely on a large scale and capitalist lines, but it also embraces a handloom industry, which is run as a cottage industry and which, with encouragement, is capable of becoming a very valuable support for the rural masses. Cotton spinning in the *Charka* and *Khaddar* making, which is said to be a part-time household occupation of the poor agriculturists, is being revived and encouraged by the Indian National Congress. Cotton may, therefore, be said to run through the gamut of India's economic life and has, therefore, a far greater claim on State policy than any other single economic factor.

As already mentioned America is the world's largest producer of cotton and together with India she accounts for about 60 to 75 per cent. of the world's total production. The following table gives the figures of production for the various cotton producing countries of the world:—

WORLD'S COTTON CROPS

(In thousands of bales of 500 lbs.)

Country		1932-33	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39
United States—								
Lint	..	13.002	13,047	9,636	10,638	12,399	18,946	11,943
Linter	..	912	982	975	1,000	1,407	1,819	1,500
Total	..	13.914	14,029	10,611	11,638	13,806	20,765	13,443
Mexico ..	..	39	255	233	235	373	349	225
Brazil ..	..	438	958	1,309	1,539	1,707	2,075	1,877
Peru ..	..	237	278	336	370	400	415	393
Argentina ..	..	146	206	258	295	148	237	300
Other South American	..	39	76	70	100	100	128	130
India* ..	..	4,657	5,108	4,858	5,728	6,307	5,779(a)	5,120(a)
China ..	..	2,195	2,652	3,030	2,309	3,760	3,083	2,200
Japan and Korea	..	133	197	224	239	212	303	267
East Indies, etc.	..	13	14	20	20	16	17	17
U.S.S.R. ..	..	1,776	9,117	1,744	2,493	3,550	3,782	3,851
Persia ..	..	79	181	200	200	161	150	150
Iraq, Ceylon, etc.	..	†	†	2	4	8	16	16
Asia Minor etc.	..	68	191	258	345	422	453	555
Egypt ..	..	991	1,715	1,511	1,707	1,821	2,202	1,668
Sudan ..	..	110	126	237	193	159	265	265
East Africa (British)	..	269	274	273	322	344	401	320
South Africa (British)	..	2	3	3	4	3	1	2
West Africa (British)	..	20	23	47	52	40	24	25
Non-British Africa	..	121	156	192	190	234	300	300
West Indies (British)	..	2	3	4	4	5	5	4
West Indies (Others)	..	26	23	30	23	27	21	20
Australia, etc.	..	11	18	41	16	15	10	10
World's Total	..	25,345	28,403	25,481	28,026	33,661	40,772	31,158
World's (exl. U.S.A.)	..	11,431	14,374	14,870	16,388	19,912	20,027	17,715
Percentage of Total	..	45.1	50.7	58.5	58.6	54.9	49.12	56.86

*Government estimate, 400 lb. bales.

Though a considerable part of the production finds an export outlet, it must not be forgotten that India has a large cotton mill industry of her own, which has been expanding with rapid strides during the last few years. The annual consumption of Indian cotton by mills in India amounted to about 2,750,000 bales. The continuance of production at a high level accounted for a total internal consumption of Indian Cotton of over 4 million bales.

It may be easily guessed from a glance at the above table that, as cotton production is spread over a wide variety of climatic conditions, there is no uniformity in respect of the season for sowing and planting. Another circumstance leading to aggravate this lack of uniformity is that in certain areas, the cotton lands are not irrigated but rain-fed. The Bombay presidency occupies a pre-eminent position in the production of cotton, and in the other provinces, its place in the provincial economy can hardly be underrated. There is a wide range of Indian cottons, the chief of which are Broach, Khandesh, Kumta-Dharwar and Sind in Bombay; Oomras in Central Provinces and Berar; Cocanada, Kambodia, Karungani and Tinnevellis in Madras Presidency, Sind-Punjab and Punjab-American in the Punjab; Bengals in United Provinces and Comilla of Bengal and the other North-Eastern provinces. Under the Indian Cotton Cess Act, a cess of As. 2 per Standard bale of cotton is levied on the Indian cotton exported to foreign countries. On cotton consumed in the Indian mills, a cess of six pies per lb. is levied. This cess forms the funds of the Indian Central Cotton Committee, which devotes it to improvements in cotton-growing, marketing and for carrying on research work in this connection. The cotton trade, however, is regulated in the Bombay presidency by the East India Cotton Association, which is a statutory body with power to control transactions in raw cotton. It was in 1918 that provision was made for a unitary control of the dealings in raw cotton, which, before that year, were conducted under the rules of the Bombay Cotton Trade Association or of the Bombay Cotton Exchange. The East India Cotton Association came into being in 1932 and, since then, the cotton trade has functioned smoothly and efficiently. In other parts of India, the cotton trade is not so organised as in Bombay, but the ready marketability of this commodity and the busy export trade have brought about close links between the cotton-grower and the exporting houses through a series of middlemen, who may be said to be common to almost all the principal agricultural staples.

Though the production in 1934-35 was only 4.8 million bales, in 1936-37 the production of cotton improved substantially to 6.3 million bales. The Indian Central Cotton Committee achieved considerable success in other directions also. It is through its efforts that several legislative measures designed to improve the growing and marketing of Indian cotton have been introduced in British India and in Indian States. Under its direction scientific investigations are carried on into the causes and prevention of cotton pest and the Committee also finances large-scale operations for the rapid extension of improved types of cotton. Valuable and accurate statistics are also maintained by the Committee and on the research side of the Committee's Technological Laboratory at Matunga is proving to be of immense benefit to the agriculturists and the trade.

The year 1942-43 was very eventful for the Cotton Textile industry as the total consumption of cotton constitutes a record for all time and the level of consumption would have been higher but for the troubles experienced in regard to labour in the latter half of 1942 following the political disturbances. Fortunately, the difficulties in regard to coal did not very much affect production in the textile units. The promulgation of the Cotton Cloth and Yarn Control Order ensured a high level of production by the cotton mills and the standardisation of output and the elimination of the finer varieties involved greater use of the usual staple cotton. The difficulties in the way of imports of foreign cotton also resulted in the large consumption of Indian cotton. With these favourable developments there was naturally great activity in the cotton market and very high levels were touched in the first half of 1943. Owing to the dislocation of export markets, it will be remembered that there was a revision of the cotton contract and that the basis was changed from Broach to Jharilla. This new contract was satisfactory though with the excess of speculation and the lack of transport facilities prices in the Bombay market were pushed to further high levels.

In order to check the uncontrolled rise in prices for cloth and to bring down the cost of production of mills, it was decided to regulate trading in the cotton market and fix maximum and minimum prices. Accordingly, the minimum of Rs. 450 and the maximum of Rs. 550 per candy was fixed and the Government offered to buy up all quantities of cotton that were offering at or below minimum prices fixed by the Government of India. This arrangement worked satisfactorily for a time though, it was said that mills were experiencing great difficulties in respect of their requirements and the ryot was forced to sell his crop at prices which were out of relation to the mill rates. The producers profited thereby and it was said that the difficulties of the ryot in disposing of his crop were due to the absence of a futures market though mills stated that they continued to take their requirements as before. By the vigorous representation made by the Indian Cotton Committee and the assurances made by the East India Cotton Association that futures trading would be regulated, futures trading was resumed in the latter half of the year and prices fluctuated within reasonable limits since then.

SUGAR

With the rapid development of the sugar industry in India during the past decade and a half, sugarcane has gained the importance of a prominent and paying crop. Till twenty years ago, India had been importing sugar worth about Rs. 15 crores annually. The development of the sugar industry not only brought down the value of total imports to less than a crore of rupees in 1936-37, but helped at the same time, the growth of sugarcane cultivation. And, to-day, India occupies the first place among the producers of cane in the world. The annual value of the crop is estimated at Rs. 60 crores.

Year	Area in 1,000 acres	Acreage under improved varieties 1,000 acres	Calculated production of sugarcane in 1,000 tons.
1925-26 ..	2,806 ..	..	34,382
1925-26 ..	2,806 ..	..	34,382
1931-32 ..	3,079	1,170	42,316
1932-33 ..	3,435	1,346	51,129
1933-34 ..	3,433	2,295	52,455
1934-35 ..	3,602	2,445	54,346
1935-36 ..	4,020	3,971	61,202
1936-37 ..	4,440	3,509	67,322
1937-38 ..	3,869	2,938	55,537
1938-39 ..	3,130	2,313	43,160
1939-40 ..	3,705	..	..
1940-41 ..	4,598	..	..
1941-42 ..	3,515	..	..
1942-43 ..	4,598	..	..

Sugarcane grows in almost all the provinces of India. United Provinces is the largest producer of sugarcane, her share of the total production amounting to about 4 per cent. The second place is held by Bihar and Orissa, though the Punjab claims to be the second as regards the acreage sown. The following table shows the total acreage and yield of sugarcane in the provinces of India.

It will be seen from the table that Madras with 6,057 lbs. per acre, leads in respect of yield per acre and Baroda with 6,007 lbs., comes second, but the United Provinces, whose production amounts to about 60 per cent of the total yield, with her yield per acre at 2,548 lbs. is far behind many other Provinces.

Provinces and States.

	Area (.000 acres)			Yield (1,100 tons)			Yield per acre lbs.		
	1938-39	1939-40	1940-41	1938-39	1939-40	1940-41	1938-39	1939-40	1940-41
United Provinces (a)	1,635	1,014	2,539	3,141	2,182	2,177	2,864	2,989	2,548	2,527
Punjab	352	414	547	363	225	304	467	1,432	1,645	1,912
Bihar and Orissa ..	375	441	542	416	369	460	535	2,204	2,337	3,316
Bengal	299	316	331	483	439	526	532	3,289	3,729	3,609
Madras	97	132	162	267	261	358	482	6,027	6,075	6,665
Bombay (b) ..	109	129	150	297	261	326	375	5,264	5,661	5,601
N.W.F. Provinces ..	53	71	96	75	59	79	107	2,494	2,492	2,497
Assam	37	38	41	39	37	41	46	2,240	2,417	2,513
C. P. and Berar ..	31	30	31	50	48	45	47	3,468	3,360	3,396
Delhi	31	1	3	2	(c)	1	1	1,120	1,120	1,154
Mysore	45	49	51	69	57	64	75	2,837	2,926	3,293
Hyderabad ..	29	36	45	4	64	75	103	4,943	4,667	5,227
Baroda	2	2	3	6	7	6	10	6,253	6,007	7,333
Bhopal	5	5	8	..	5	6	8	2,240	2,683	2,240
Total ..	3,108	3,618	4,559	5,275	4,090	4,547	5,720	2,948	2,815	2,810

(a) Including Rampur State. (b) Including Indian States. (c) 500 tons.

Out of the above total area, about 79 per cent was under improved varieties as compared with only 38 per cent in 1931-32. The credit of the increased planting of the improved varieties of cane goes to the Imperial Council of Agricultural Research, which has been doing good work in recent years for the propagation of improved varieties of cane among the cultivators. In this connection, the research work carried on by the Imperial Sugarcane Station at Coimbatore on cane-breeding technique has been of

benefit to cultivators. The Sugar Committee of the Imperial Council recommended, in July 1935, a grant of 2 annas per rupee out of the proceeds of the Excise duty on sugar for research, while the Tariff Board recommended a grant of Rs. 10 lakhs per year for this purpose. The total amount of grants made or promised, to the Imperial Council for expenditure on Sugar Research up till now, approximately amounts to Rs. 35 lakhs. This shows the great value placed on the importance of research work in sugarcane. Indeed, skilful research work would be of great value to the prosperity of the industry, as well as of the agriculturists, as the percentage of recovery of sugar in factories in India is far below the average recovery in Java, which fact is evident from the following table:—

AVERAGE PERCENTAGE OF RECOVERY OF SUGAR IN INDIAN & JAVA FACTORIES

Year	U. P.	Bihar	Bombay	India	India Maximum	Java
1931-32 ..	8.59	9.06	...	8.89	10	11.92
1932-33 ..	8.55	3.60	10.09	8.66	10	11.16
1933-34 ..	9.08	8.32	10.00	8.80	10	12.64
1934-35 ..	8.56	8.79	10.37	8.66	11.10	12.35
1935-36 ..	9.60	8.92	10.47	9.29	11.34	...
1936-37 ..	...	...	...	...	..	...
1937-38 ..	9.22	9.67	11.12	9.44	..	...
1938-39 ..	9.14	9.07	11.27	9.24	...	...

Unlike the Java factories, which cultivate sugarcane around their factories, by using modern appliances, the factories in India are mostly dependent, for their supply of cane, on a large number of cultivators. It is to be hoped that the united efforts of the Government of India and the authorities in the various provinces to fix a standard for sugarcane and the introduction of improved methods of cultivation in future would benefit the industry greatly.

Apart from Government's help in the matter of improvement of sugarcane another direction in which the cultivator can be benefited, is by means of the efforts of autnorities in the various provinces to fix a minimum price for sugarcane. The United Provinces and Bihar have made rules under the Sugarcane Control Acts regulating the purchase of cane and fixing the basic prices. Though the Governments of these Provinces were confronted with many difficulties on the way, they are successfully combating them all, one by one. In October 1935, the Government of Madras issued draft notifications declaring certain areas in the presidency as "controlled areas," and fixing the minimum price for the purchase of cane in these areas. The Bengal Government are also considering the application of the provisions of the Sugarcane Act in Bengal. The Mysore Government also have fixed minimum prices for cane in Mysore.

After the advent of Provincial Autonomy, the Congress Ministers of Bihar and the United Provinces enacted comprehensive legislation for the control of sugar factories, ensuring a minimum price for sugarcane. The main provisions of the Act were licensing sugar factories, the regulation of the supply of sugarcane to factories, the fixation of a minimum price for sugarcane, the establishment of a sugar Control Board and Advisory Committees and a tax on the sale of sugarcane intended for use in factories.

Though the sugar industry in India has grown enormously in the past decade, it must not be, however, understood that the whole or even a large part of the cane grown in the country is consumed by the sugar factories. As a matter of fact, the sugar factories in India crushed only about 16 per cent of the total production of cane in 1935-36, while about 70 per cent, was absorbed for *Gur* manufacture.

India holds the first place among the producers of cane sugar in the world. Ten years ago, the first place in production belonged to Cuba which produced 161 per cent more than India, but to-day the position is heading to be the reverse. While the total production of sugar in India in 1936-37 amounted 39 million quintals, that of Cuba has amounted to only 29 million tons. Europe, North America and Russia are all producers of beet sugar. The total production of beet sugar in the world in 1936-37 was estimated at about 97,000,000 quintals (quintal-415.248 lbs.). Of this, Europe produced about 58,052,000 quintals, Russia 22,000,000 and the United States of America 15,935,000 quintals. In Europe, Germany is the chief producer, her share exceeding 9,112,000 quintals in 1936-39.

It was a question of restriction in production in 1940-41 and 1941-42. It will be remembered that there was a crisis in the sugar industry in 1939-40 and that with a large carry-over from that season the Governments of United Provinces and Bihar had to decide upon a policy of restriction to save the industry from ruin. It was also found necessary to give a concession of Re. 1 per cwt. as excise duty to be paid later by the mills situated in these provinces. This policy of restriction had its desired effect in correcting the statistical position of the industry and by the end of November, 1941, the carry-over was brought down to the level of 2½ lakhs tons. It was decided to continue the restriction scheme for a third year as it was generally believed that the capacity of the industry was far in excess of the requirements of the country and that it was not possible for exports of sugarcane being made owing to the high level of prices and the difficulty in regard to shipping. The Japanese entry into the war and the fall of Sumatra and the Philippines completely altered the outlook. This country remained the only major producer in the Eastern Hemisphere. Efforts were made by the industry to increase production of cane sugar but mills were handicapped by the availability of sugarcane as it had been already decided to grow a shorter crop. All of a sudden the sugar scarcity made itself felt. A sugar control order was passed in 1942 by which mills were prevented from selling their sugar above Rs. 12 per maund ex-factory for D 24 quality. There was considerable objection to the fixation of maximum prices, by the Government as it was pointed out that such a price did not take into consideration the higher cost of production on account of the higher prices for coal, etc. The Indian Sugar Syndicate was not consulted and the Government proposed to effect the distribution directly. As it was the case with the other control orders, this also proved a failure. The sugar problem was different from others inasmuch as the problem was one of adequate distribution and not of supplies. The Sugar Controller for India had great difficulty in getting allotments which proved very difficult owing to the concentration of the industry in two provinces. To facilitate matters it was decided to divide the country into quota areas and allot a particular tonnage for the consumption of these quota areas but it was later found that it was not possible to effect wagon deliveries to the level of the quota allotments. It was at first announced that there should be unlimited crushing in the season 1942-43 and that there should not be any change in the price for cane or for cane sugar. Latterly, however, with protests from the industry and additional inducement to the ryot, it was found necessary to effect an increase in the maximum price to Rs. 14 per maund ex-factory for D 24 quality. With considerable difficulties regarding supplies of chemicals and transport, mills were afraid that it would not be possible to effect any appreciable increase in the production of sugar during the current season. There was difficulty even in regard to cane transport, not to speak of the difficulty in finding transport facilities for the manufactured commodity.

The important feature of recent years is the termination of the International Sugar Agreement which expired in May 1942. In view of the peculiar circumstances this country it was decided that India should not continue to be a signatory to the International Sugar Agreement. Sugar producers, therefore, are now free to effect exports of sugar by sea if they can find the necessary shipping.

The outstanding feature of the year is the successful administration of the Sugar Control Order. The system of the allotment of wagons to the various factories, and the distribution of sugar to the respective areas proved to be very successful and naturally all the sugar produced found its way to the markets without any appreciable delay. Sugar mills were asking for a larger number of days in the last season and could have perhaps worked for a longer time if only there were sufficient cane supplies. With transport difficulties and the competition from producers of Gur the position did not get right. It was only late in the season that it was announced that the new prices for sugarcane was increased from 8 annas to 10 annas per maund. As for the current season, it has been decided that the ryot should pay 12 annas per maund even though 2 annas per maund is to be given in Defence Certificates or Stamps. This policy, it is said, would result in a considerable shortage of supplies for the next season and that mills will not be able to produce large quantities of sugar. Representations in this regard by the industry, however, have not been successful and it is feared that most of the cane that will be available in the next season will be ratooned and give a lower yield.

TOBACCO

India's progress as a tobacco growing country has been little short of extraordinary. In fact, production in this country is on such a scale that in 1936-37 India stood first of the world tobacco producers with 1,497,000 acres growing 1,375 million lbs. while the U.S.A. came second with 1,437,000 acres and 1,153 million lbs.

The annual value of the Indian crop is about 1,800 lakhs and the chief areas for growing it are Bengal, Madras, Bombay, Bihar, and the United Provinces and the Punjab.

Though a very considerable part of this tobacco is of course consumed inside the country, in 1937-38, 4½ million lbs. of unmanufactured tobacco worth Rs. 1,18 lakhs was exported. The total yield of leaf in that year was 511,000 tons. Virginia tobacco is already in production in the Guntur area of Madras and has been introduced in Guzerat (Bombay).

A considerable amount of research is being undertaken to improve not only the crops of leaf, but also the curing and marketing. Export on the basis of the official Agmark grades is increasing and care is being taken to prevent marketing abuses such as have occurred in the past.

Before the sixteenth century the tobacco plant was practically unknown in India and the Portuguese are credited with having conveyed the plant in 1508. The use of tobacco spread within the space of a century, and by the year 1617 smoking became so general that the Emperor Jehangir, so the story goes, had to prohibit the practice. But it must be admitted that a century and a half ago tobacco was an article of comparative unimportance, as smoking was forbidden by religion to the majority of people. The advent of European civilisation has, however, gradually reversed the position, and to-day smoking has become the fashion of the times and cigarette an indispensable item for society. A large number of the Indian population also uses tobacco for chewing and in the form of snuff.

Two main species of tobacc are cultivated in India *viz. Nicotiana tobacum* and *Nicotiana rustica*, of which the former is more common. Next to the United States of America, India is the largest producer of tobacco in the world, the annual area under the crop exceeding 1.4 million acres. The tobacco plant is grown in practically every district in India, but the important zones lie in Bengal, Madras, Bihar, Orissa, Bombay and Burma. The *Bhengi, Naokhol* and *Hingli* varieties are commonly cultivated in Bengal, Bihar and Orissa and the Bilaite or Motihari variety of *N. rustica* to a lesser extent. Guntur is the most important tobacco-growing centre in Madras, while Sivapuri of South Arcot and Meenampalayam of Coimbatore are famous for their aroma and are mainly used for chewing.

Although the cultivation is extensive, the quality of Indian tobacco is generally said to be inferior to that of foreign growths; and this has prevented India from getting a proportional share in the international trade in the commodity. Efforts have been made by the Imperial Institute of Agriculture, Pusa, to grow the high grade American varieties of Adcock and White Burley, but problem of tobacco improvement is at present without much success so far. So, the main problem is the production of a quality tobacco for the pipe and to meet the requirements of cigarette factories in India and so to replace the present large imports of Virginian leaf.

	Pre-war Average	1919-20	1933-34	1934-35	1935-36
	(In thousands acres)				
Madras	205	228	248	292	280
Bombay*	92	107	144	185	168
Bengal	318	342	286	308	307
United Provinces ..	87	82	82	102	84
Punjab	59	54	48	88	78
Bihar and Orissa ..	113	120	140	133	140
Burma	90	126	103	106	104
C. P. and Berar	28	23	13	15	14
Assam	8	10	14	13	12
N.W.F.P.	8	8	6	14	17
Delhi	1	1	1	1	1
Hyderabad	..	116	71	74	72
Mysore	14	20	25	23	23
Baroda	..	24	44	59	55
Other States	34	35	41	48	2†
Total ..	1,057	1,296	1,266	1,461	1,357

*Including Sind.

†Figures incomplete.

Tobacco is a money crop to the cultivator and is generally harvested between January and April. The cultivation of high grade varieties would prove very profitable as will be seen from the following estimates of the Pusa Institute for growing one acre of Adcock tobacco.

First grade leaf sold at As. 9 per lbs. 513 lbs.	287 15
Second grade sold at As. 6 per lb. 349 lbs.	130 14
862 lbs. gross return ..	418 13
Less cost of cultivation Rs. 80; plus cost of flue-curing 862 lbs. at Rs. 2 per lb. Rs. 110	190 0
Net profit per acre ..	228 13

To this, a sum of Rs. 20 realized from the sale of tobacco leaf stalks may be added as additional profit.

The bulk of the tobacco grown in India is consumed locally. There is, however, a good export trade in the commodity as will be seen from the following table. The figures for 1939-40 are not available in detail. The total value of exports, however, at Rs. 2.53 crores compares with Rs. 2.76 crores for 1938-39

The low quality of Indian tobacco has necessitated imports of high grade tobacco from U. S. A. and other foreign countries. In 1938-39, for instance, imports of unmanufactured tobacco into India amounted to about Rs. 58 lakhs, while those of cigars, cigarettes and other manufactured tobacco amounted to about Rs. 42 lakhs. In 1930-35 there was a bing fall in imports of manufactured tobacco. This was due to various factors such as the boycott of foreign goods, the development of an Indian tobacco industry and the establishment of cigarette manufacturing factoreis within the country by foreign manufacturers. The following table gives the imports of tobacco into India:—

	1936-37	1937-38	1938-39
	(In thousand lbs.)		
Unmanufactured	3,283	6,598	6,37[illegible]
Manufactured:—			
Cigars ..	14	191	20[illegible]
Cigarettes ..	919	993	1,21[illegible]
Tobacco for pipes & cigarettes	58	51	5[illegible]
Other sorts ..	33	57	3[illegible]
Total ..	4,307	7,889	7,88[illegible]

Imports of foreign tobacco into India are liable to the following duties:—Tobacco, manufactured, not otherwise specified Rs 3-12 per lb.; Cigars 112½ per cent *ad valorem;* Cigarettes, 25 per cent *ad valorem* and addition either Rs. 8-12 per thousand or Rs. 3-4 per lb., whichever is higher; Tobacco, manufactured Rs. 3-4 per lb., preferential rate Rs. 2-12 per lb. Tobacco leaf for the manufacture of cigars, when proved to have been imported for use in a cigar (standard) and Rs. 1-8 per lb. (preferential).

(In thousands Rs.).

	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39
Unmanufactured:—						
United Kingdom ..	10,626	13,299	11,702	13,298	21,128	37,550
Aden and Dependencies	4,427	5,398	7,315	8,336	7,182	3,438
Straits Settlements ..	1,555	1,167	1,072	1,113	..	..
F. M. S.	736	512	677	766	792	886
Netherlands ..	945	3,512	1,231	1,121	1,348	392
Japan	3,699	3,313	5,623	3,000	2,317	1,055
Other Countries ..	3,439	2,005	1,125	892	9,693	5,930
Total ..	25,427	29,206	28,743	28,526	42,460	60,143
Manufactured:—						
Cigars	118	64	73	60	58	54
Cigarettes ..	313	258	329	372	2,477	1,750
Other sorts			454	347	1,166	[illegible]

BANKING IN 1942-43

The progress of Indian banking in 1943 is important in more than one respect. It was in this year that many of the new giant banks were formed and that new savings were attracted to the banks. The series of new flotations began with the coming into being of the Bharat Bank Limited. The Bharat Bank, the United Commercial Bank, the Hindusthan Commercial Bank and the Hind Bank are some of the new banks with an impressive capital structure. The deposits attracted by these new banks alone in the short period of one year can be said to be nearly Rs. 20 crores. But with all the new banks the increase in banking activity has not been on such a scale as to cause alarm. The usefulness of the increased number of branches of banks and the new banks in the war period, when conditions for banking development are none too helpful, might perhaps be questioned but as providing facilities for a public which has inflated purchasing power and which has still to be taught the banking habit the new developments have to be welcomed. It is to be regretted that the improvement has been confined mostly to the urban centres. It might even be said that there has been redundant banking. But, as Sir Padampat Singhania said at the time when the Hindustan Commercial Bank commenced business, in this country of 400 million there can never be a surfeit of banking facilities. While every care has to be taken to see that progress is on proper lines nothing should be done to discourage the sponsors.

At the begining of the war the number of branches of scheduled banks was 1,252. They increased to 1,405 in June. 1942. At the end of June, 1943 the number was further higher at 1,600. In the three years immediately before the war there was an increase in the number of branches of scheduled banks to 1,125 from 723. Expressed in percentage it would appear, therefore, that the progress has not been anything very rapid. In the latter period, however, many new small banks have come into existence and these have been able to collect a good amount of deposits from small investors.

The emergence of war conditions, it has therefore to be said, has been beneficial to a certain extent so far as the banking community is concerned though, with the great difficulty in regard to the proper disposition of funds, the chief beneficiary has been the Central Government. Inflation can thus be said to have brought substantial benefits to the Central Government. The banks were collectors of deposits and agents for investments in giltedged securities. The higher level of profits was repaid to a great extent to the Government in the shape of tax. From the table given at the end, it will be seen that, with the continued expansion of currency, there has been a large increase in deposits both on current and fixed accounts. The improvement in deposits has been pronounced as the rate of currency expansion increased.

Thus, on September, 1939, demand liabilities were Rs. 141.4 crores and time liabilities Rs. 106.46 crores. Demand liabilities increased to Rs. 178.87 crores but time liabilities decreased to Rs. 100.44 crores on January 3. 1941, the total of both time and demand liabilities thus being only about Rs. 32 crores higher at Rs. 279.31 crores. In the years 1942 and 1943, however, the rise in deposits is more pronounced. After the fall of France, India played a larger part in the Empire's war effort. With the increase in war orders substantial payments in sterling were received. This necessarily resulted in an increase in earnings of the business community in India. In connection with the payments for goods and services rendered by Indian businessmen the note issue increased. Thus, we find that there is a parallel movement in the increase in the note issue and deposits with banks.

In the last two years especially deposits have nearly doubled to Rs. 658.11 crores.

The greater liquidity of banks was to a certain extent due to the large amounts held on current account but it was also partly due to the difficulty in regard to investments. On the eve of the war, the ratio of total cash to deposits was 13.14 per cent. It increased to 20.4 per cent in the beginning of 1941 though with the slow currency expansion, the improvement in demand for funds and the larger investments in Government securities, there was a decline to 12.77 per cent at the beginning of 1942. There is also another reason for the lower cash ratio. Banks in Eastern India experienced a large withdrawal of funds and many of the Bengalee banks had even to arrange for financial assistance. But this state of affairs did not continue for long as after April, 1942 normal conditions were again noticeable and the upward trend was resumed. At the beginning of 1943 the cash ratio was higher at 13.71 per cent. At the end of the year it further improved to 17.61 per cent. It would appear that the increase in the cash ratio is not consistent with the decrease in advances. This is because banks were obliged to put in idle money in giltedged securities to bring in income by way of interest to compensate the loss in profits due to the decrease in advances.

Against the increase in deposits of Rs. 410 crores, advances have risen by only Rs. 55 crores to Rs. 160.86 crores. So that the ratio of advances to total deposits came down to 25.47 per cent from 44.19 per cent at the beginning of the war. But for the improvement in the demand for funds in the latter half of 1943 which, it should be said, was due mainly to the inflationary level of prices, the ratio would be still lower.

Banks had thus a surplus of nearly Rs. 250 crores to deal with. Allowing for the increase in cash balances it appears that as much as Rs. 275 crores has been placed in investments mostly in giltedged and partly in equities, preference shares and debentures. In the absence of any large new issues, it cannot be expected that banks were keen buyers in the market. It cannot, therefore, be said that they would have placed more than Rs. 10 or Rs. 15 crores in investments other than giltedged. The subscription to new loans and fresh purchases of giltedged securities can therefore be estimated at Rs. 225 or Rs. 250 crores. As the total borrowings of the Central and Provincial Governments have not been more than Rs. 700 crores, since the outbreak of war, it can thus be said that jointstock banks have rendered valuable support to the authorities in their war effort.

This leads us to another question. The swollen deposits of banks have led to swollen investments in giltedged. Instead of keeping large sums idle, banks have found it more advantageous to put them in giltedged and earn a nominal interest rather than attempt to increase their advances. After the cessation of hostilities, the Government have therefore an obligation to protect the interests of banks and incidentally, of the large body of depositors who stood well by the Government in their difficult period. It is felt that as a result of the deflationary policy that might be pursued by the Government of India in the immediate post-war period, deposits might contract as they did soon after the first world war. If in this process interest rates were allowed to increase, the loss in the capital value of investments will be more than the increase in earnings of banks by way of higher interest rates on advances. It has, therefore, to be made sure that, consistent with the policy of maintaining giltedged prices, the programme of industrialisation in order to utilise the surplus funds is put through. Which means, that cheap money should continue to prevail and all efforts made, as far as possible, to find employment for surplus funds. The country should thus grow up to currency which will be the only solution for all the difficulties that are now facing us.

Reference must be made to the observations made by the Directors of the Central Board of the Reserve Bank regarding the need for banking development on healthy lines. The formation of new large banks with preference and deferred capital gave some room for doubt that promoters were finding ways and means to control the affairs of the newly-started institutions and that the interests of depositors could not be properly safeguarded if there were no restrictions regarding voting rights of shares other than ordinary. It is for this purpose it is pointed out that the subscribed capital should be entirely in ordinary shares, and that it should be half of the authorised capital. The paid-up capital also had to be 50 per cent of the subscribed capital. There was naturally some opposition to this proposal by the Central Board of Directors of the Reserve Bank as it was said that the stipulation to have the paid-up capital in the form of ordinary shares might not encourage investors to put in their money freely and that a small inducement with restriction on voting rights would prove to be of great advantage to the newly-started banks. While there is some force in this argument, it cannot be denied that banks having an influential board of directors will have no difficulty in securing their capital and the experience of the latter half of 1943 has definitely proved that with the continuance of easy money conditions, there can be no dearth of capital for new enterprises started under good auspices. The feature of the year is the promotion of new banks like the United Commercial Bank, Hindusthan Commercial Bank, the Hind Bank, the Bank of Jaipur and the Discount Bank of India Ltd.

THE CENTRAL BANK OF INDIA, LTD.

(Established Dec., 1911)

Authorised Capital	- -	Rs.	3,50,00,000
Subscribed Capital	- -	,,	3,36,26,400
Paid-up Capital	- -	,,	1,68,13,200
Deposits as at 31st December, 1943		,,	81,63,71,000
Reserve and Other Funds	-	,,	1,49,67,000

Head Office : **ESPLANADE ROAD, FORT, BOMBAY**

NUMBER OF BRANCHES AND PAY-OFFICES—200

DIRECTORS :

Sir Homi Mody, K.B.E., Chairman
Haridas Madhavdas, Esqr.
Ardeshir B. Dubash, Esqr.
Dinshaw D. Romer, Esqr.
Vithaldas Kanji, Esqr.
Noormahomed M. Chinoy, Esqr.
Bapuji D. Lam, Esqr.
Dharamsey Mulraj Khatau, Esqr.
Sir Ardeshir Dalal, Kt.
H. F. Commissariat, Esqr.

London Agents : **Barclay's Bank Ltd., and Midland Bank, Ltd.**

New York Agents : **The Guaranty Trust Co, of New York**

Banking business of every description transacted on terms which may be ascertained on application.

H. C. CAPTAIN
Managing Director

NATIONAL BANK OF INDIA, LIMITED.

(INCORPORATED IN THE UNITED KINGDOM)

Subscribed Capital	- - -		£4,000,000
Paid-up Capital	- - -		£2,000,000
Reserve Fund	- - -		£2,200,000

HEAD OFFICE :
26, BISHOPSGATE, LONDON, E.C. 2.

CALCUTTA BRANCH :
104, CLIVE STREET.

Bankers to the Government in Kenya Colony and Uganda.

INDIA : Calcutta, Amritsar, Bombay, Chittagong, Madras, Tuticorin, Karachi, Cawnpore, Delhi, Lahore, Cochin.

BURMA : Rangoon, Mandalay, (in Enemy Occupied Territory).

KENYA COLONY : Mombasa, Nakuru, Nairobi, Kisumu.

CEYLON : Colombo, Kandy, Newara Eliya.
TANGANYIKA TERRITORY : Dar-es-Salaam, Tanga, Mwanza.
ARABIA : Aden, Steamer Point, Aden.
UGANDA : Entebbe, Jinja, Kampala.
ZANZIBAR.

The Bank issues Letters of Credit and conducts every description of Banking and Exchange Business with the principal cities of the world.

TRAVELLERS' CHEQUES ISSUED

The Bank undertakes the recovery of Indian and British Income-Tax and Preparation of Income-Tax Returns on behalf of its constituents.

REVIEWS OF BALANCE-SHEETS:

IMPORTANT BANKS DOING BUSINESS IN INDIA

IMPERIAL BANK OF INDIA

The increase in gross profit for the second half of 1942 reported by the Imperial Bank of India is independent of any improved demand for funds. The report speaks only of improvement in the Government securities market; and the continued slackness of money conditions is illustrated by the fall during the period in the average rate on Treasury Bills to Re. 0-10-8 per annum. The balance-sheet changes as between the half-year ended December, 1941 and the more recent period support the conclusion that money was abundant and demand was poor. Since December, 1941 the total deposits have increased from Rs. 108.92 crores to Rs. 163.46 crores. This substantial increase is not reflected in the total advances shown at Rs. 33.79 crores against Rs. 38.88 crores at the end of 1941. The increase in cash balances from Rs. 15.27 crores at the end of 1941 to Rs. 23.53 crores at the end of 1942 is, of course, due to the increase in Deposits to a record level.

The poor demand for money, even while commodity prices were rising, explains the bulge in investments which have risen in a single year from Rs. 64.35 crores to Rs. 115.87 crores as shown in the balance-sheet. The Bank is the principal prop of the securities market owing to the slackness of trade demand. That Deposits have consistently risen after the loss of the Burma branches proves that the Imperial Bank's prestige in the last year has been higher than ever. An increase of Rs. 51 crores under investments and a fall of Rs. 5.1 crores under advances remove doubts as to the limited scope for bank finance in the cold weather of 1942.

The increase in the net profit for the half-year is followed by conventional disposition of the available balance of Rs. 85.43 lakhs. The sum of Rs. 5 lakhs is again appropriated to Reserve Fund which at the end of 1942 stood at Rs. 5.75 crores. The dividend is maintained at 12 per cent and the carry-forward is slightly higher at Rs. 45,51,645. The latest balance-sheet, while indicating that the Imperial Bank is more than primus inter pares proves that expansion of Deposits and Investments alike does not produce a proportionate growth of profits because the war has checked the normal growth of Advances and stabilised interest rates once for all.

	(Year ended December) (000's omitted)		
	1942	1941	1940
	Rs.	Rs.	Rs.
Liabilities:			
Capital ..	5,62,50	5,62,50	5,62,50
Reserves ..	5,75,00	5,62,50	5,62,50
Deposits ..	1,63,46,28	1,08,91,90	98,03,17
Sundries ..	38,89	38,39	37,67
Profit & Loss A/c. ..	45,52	45,29	38,61
Total ..	1,75,68,19	1,21,00,58	1,08,04,45
Assets:			
Cash ..	23,52,90	15,26,87	24,82,81
Investments ..	1,15,87,25	64,39,65	48,57,34
Loans & Cash Credit ..	27,26,78	31,74,37	28,49,12
Bills discounted ..	6,51,94	7,13,91	3,81,76
Dead Stock ..	1,73,92	1,78,27	1,80,89
Sundries ..	75,40	67,51	52,53
Total ..	1,75,68,19	1,21,00,58	1,08,04,45
Percentage of Capital & Reserve to deposits ..	6.96	10.33	11.71
Percentage of Cash to Deposits ..	14.39	14.02	25.65
Profit & Loss items:			
Brought forward ..	45,29	38,61	31,33
Net profit ..	91,13	76,66	78,04
Dividend Distribution ..	67,50	67,50	67,50
Bonus to Staff ..	8,50	—	—
Allocation to funds ..	14,90	2,48	3,31
Carry Forward ..	45,52	45,29	38,61
Dividend per cent ..	12	12	12

Total available of £557,132-5-0d, out of which

ALLAHABAD BANK LIMITED

The Allahabad Bank is one of the oldest of Indian joint stock banks, established in the year 1865. Its original Head Office was Allahabad, but since its affiliation to the P. & O. Banking Corporation, which has since been amalgamated with the Chartered Bank of India, about 20 years ago, its registered office has been transferred to Calcutta. The Allahabad Bank has devoted special attention to branch banking and finance of produce. Its branches are spread practically throughout the United Provinces and a good part of the Punjab. The bank has also branches at other important centres like Bombay, Ahmedabad, Nagpur, etc. In the field of produce finance, it did considerable pioneer work; and though new entrants into the field seek to cut into its business, the facilities which the Allahabad Bank has always offered, and is ever in a position to offer, should retain for it, its own clients and connections and business.

The balance-sheet for the year ended March, 1943 shows that the bank has been able to maintain its progress and that deposits are at a new high level, the total deposits being Rs. 16.82 crores against Rs. 12.95 crores at the end of the previous year. Consistent with the increase in deposits, however, there has been no rise in advances which are only Rs. 6.05 crores against Rs. 4.99 crores. Investments are, therefore, very much higher at Rs. 8.72 crores against Rs. 5.84 crores. The bulk of the increase in investments is in Government securities which are higher at Rs. 7.37 crores against Rs. 5.46 crores. Holdings of treasury bills are as much as Rs. 94.76 lakhs against nil previously. Cash balances are only slightly higher at Rs. 2.55 crores against Rs. 2.51 crores. The fact that the increase in deposits was mostly on account of current account, fixed deposits being actually lower at Rs. 5.36 crores against Rs. 6.24 crores, is, perhaps, responsible for the greater liquidity of funds and the moderate improvement in earnings. Also, it might be that the incidence of taxation was heavy for the item under travelling expenses, taxes and general charges is sharply higher at Rs. 8.42 lakhs against Rs. 5.48 lakhs.

The net profit after providing for depreciation in the value of house property and dead-stock is Rs. 11,24,065 against Rs. 10,54,753 for 1941-42. After transferring Rs. 2 lakhs to Reserve Fund and a similar sum to contingencies, the usual distribution of 6 percent on the preference shares and 18 percent on ordinary shares has been made.

BANK OF BARODA LIMITED.

Very impressive progress has been made by the Bank of Baroda Limited in 1942. There has been a big increase in deposits though one would have wished that such increase in deposits had been reflected in fixed deposits also. The total of the balance-sheet shows an increase of Rs. 3.8 crores. Fixed deposits are more than Rs. 50 lakhs lower at Rs. 2.83 crores, but there is a big rise in deposits in current, savings account, etc., to Rs. 10.37 crores from Rs. 6.18 crores.

In common with other banks the management has had considerable difficulty in the utilisation of funds. Loans and advances are considerably lower at Rs. 3.71 crores against Rs. 4.48 crores. Investments are sharply higher at Rs. 5.62 crores against Rs. 3.62 crores, the increase taking place mostly in giltedged securities. Other surplus funds have been invested in treasury bills the total under this head being more than Rs. 1.6 crores higher at Rs. 2.07 crores. In spite of the increase in investments in government securities and treasury bills cash balances are substantially higher at Rs. 2.93 crores.

In order to strengthen further the position of the bank, since the close of the year, a new issue of capital has been made at a premium of 90 per cent. As a result of the new issue of capital the total subscribed capital would have increased from Rs. 1.2 crores to Rs. 2 crores; the paid-up capital would show an increase of Rs. 40 lakhs at Rs. 1 crore and Reserves by the same figure to Rs. 99 lakhs.

It has not been possible to report any big increase in profits owing to the difficulties mentioned above. However, the net profit at Rs. 9.41 lakhs should be considered satisfactory, the figure for 1941 being Rs. 8.37 lakhs. The dividend have been maintained at 10 per cent.

BANK OF INDIA LIMITED.

The Bank of India Limited was registered in1906 and has 22 Branches. Its London Agents are the Westminster Bank Ltd. The Balance Sheet of the Bank of India Limited shows a very sound and compact position and the Bank's business continues to be run very satisfactorily. The Bank has an influential Board of Directors with Sir Chunilal V. Mehta, K.C.S.I., as Chairman. Mr. A. C. Clarke is the Manager.

THE BANK OF JAIPUR

INCORPORATED IN JAIPUR (1943) LIMITED LIABILITY OF THE MEMBERS BEING LIMITED

A SCHEDULED BANK

AUTHORISED CAPITAL Rs. 2,00,00,000 PAID-UP CAPITAL - Rs. 49,98,000
SUBSCRIBED CAPITAL ,, 1,00,00,000 WORKING CAPITAL EXCEEDS ,, 2,50,00,000

DIRECTORS:

SIR PADAMPAT SINGHANIA, Kt, M.L.A. (Chairman)
RAJA SARDAR SINGH BAHADUR of KHETRI
THAKUR MADAN SINGH of NAWALGARH
RAMNATH ANANDILAL PODAR, Esqr.
GOVINDRAM GORDHANDAS SEKSARIA, Esqr.
JAGAN NATH AGARWAL, Esqr.
MADHAV PRASAD BIRLA, Esqr.
SUNDERLAL THOLIA, Esqr.
BISHESWARNATH M. BHARGAVA, Esq. M.B.E., J.P.
GANGA SAHAI PUROHIT, Esqr.
MIRZA MOHAMMAD RAFI, Esqr.
} Government Directors

Manager : **S. L. KOTHRI**, Esqr., B.A., B. Com. (London), Chartered Accountant

Current Accounts **are opened with a minimum of Rs. 300 - and interest allowed at ½% per annum on daily balance up to Rupees one lac.**

Fixed Deposits **are received for long and short peiods on favourable terms.**

Savings Bank Accounts **are opened and interest allowed at 1½% p. a. minimum monthly balance up to Rs. 5,000**

ADVANCES ARE GRANTED ON APPROVED SECURITIES ON FAVOURABLE TERMS

TRANSACTS ALL KINDS OF BANKING BUSINESS

Head Office: **JAIPUR**

Branches:

Cook's Building, Hornby Road, Bombay, Laxmi House, Kalbadevi Road, Bomby, 65, Kazi Syed Street, Mandvi Bombay, Kishangarh (Raj), Gangapur City and Nawalgarh (Jaipur State) & Jodhpur

NATIONAL SAVINGS BANK, LIMITED

(A SCHEDULE BANK)
ESTABLISHED IN 1941

HEAD OFFICE:

43-45, APOLLO STREET, FORT, BOMBAY

Branches:

Kalbadevi, Mandvi, Zaveri Bazar, Ghatkopar, Ahmedabad, Amritsar, Baroda and Ludhiana.

Opening shortly at MULTAN CITY, LAHORE and BANDRA (Bombay).

AGENCIES AND CORRESPONDENTS THROUGHOUT INDIA

Built on Public Confidence

TOTAL WORKING FUNDS EXCEED TWO CRORES

Board of Directors:—**CONSISTS OF COMMERCIAL MAGNATES OF BOMBAY**

SETH SANKALCHAND G. SHAH, B.A., LL.B.
Merchant and Millowner,
Chairman.

N. C. KHORANA, B. Com., A.I.I.B.
Managing Director.

BANKING BUSINESS OF EVERY DESCRIPTION TRANSACTED

The Bank experienced a satisfactory year in 1942, the profit for the year being higher at Rs. 26,72,923 against Rs. 24,12,871 in 1941 and Rs. 19,53,948 in 1940. The Bank has not only maintained the dividend at 11 per cent but has paid a bonus of 1 per cent in 1942.

Deposits have increased from Rs. 25,86,02,583 to Rs. 36,82,34,398. Loans and Advances are and Rs. 7,52,49,160 in 1940. Cash and other balances are higher at Rs. 9,57,62,271 against Rs. 5,41,48,609 in the previous year; also the Investments are higher at Rs. 20,40,40,803 against Rs. 11,68,22,114. The liquid position is indicative of the settled policy of the Board and the management, and the ratio of cash to deposits is more than ever calculated to inspire faith.

(Year ended December)
(000's omitted)

	1942	1941	1940
Liabilities—			
Capital ..	1,00,00	1,00,00	1,00,00
Reserve ..	1,21,50	1,19,00	1,16,50
Deposits ..	36,82,34	25,86,02	22,27,61
Other items	5,57	1,56	1,34
Profit & Loss Account ..	24,64	23,61	20,45
	39,34,05	28,30,19	24,65,90
Assets—			
Cash ..	9,57,62	5,41,48	6,14,31
Loans & Advances ..	9,28,17	11,04,99	7,52,49
Investments etc. ..	20,40,40	11,68,22	10,77 69
Property and other items ..	7,86	15,50	20,91
	39,34,05	28,30,19	24,65.90
Profit & Loss Items—			
Brought for ward ..	9,41	8,99	8,66
Net Profit ..	26,73	24,12	19,59
Dividend distribution ..	12,00	11,00	11,00
Allocation to funds ..	6,50	7,50	5,00
Carry forward	9,44	9,41	8,99
Dividend per cent ..	12	11	.. 11

BANK OF MYSORE LIMITED.

Since deposits in the first half of 1943 have increased from Rs. 4.35 crores to Rs. 5.58 crores it is not surprising that the Bank of Mysore reports exceptional progress. With its large capital and reserves, the Bank of Mysore is long distinguished as a citadel of orthodoxy. The balance sheet supports the reputation, for the cash ratio is large and advances are moderate in proportion to investments. The payment of a bonus of 2 per cent in addition to the interim dividend of 12 per cent is in tune with precedent and the only point to stress here is that the carry-forward is larger than the amount disposed of. The increase in net profit is ascribable to the rise in Advances from Rs. 1.16 crores to Rs. 1.55 crores in six months. A further addition to Contingencies Reserve raises the total Reserves above the sum of Rs. 28 lakhs shown in the balance-sheet. The increase noted under Fixed and Thrift deposits is an unusual but welcome indication of banking progress in Mysome indicating that not only current accounts but smaller savings continue to increase there. Of the total increase of Rs. 1.23 crores only Rs. 73 lakhs fall under current deposits. The mild improvement under Bills in the first half of the year should also claim attention. Investments have risen by Rs. 26.5 lakhs while Advances have risen by Rs. 70.1 lakhs as compared with the position at the end of 1942. The increase in distribution, after the usual allocation to reserves, etc., may suggest that the shareholders despite an increase in taxation, are getting a full share in the profits. The Board in recording satisfaction with the results, pointing to a rise of over Rs. 1 lak in the net profit, do not refer to trade conditions or the increase in taxation which takes Rs. 65,000. But the increase in Advances in the period tells the whole story, and the progress reported finds support in the profit figures of the period. Other banks in the South report the same measure of progress, but none is so comfortably placed, to judge by the percentage of liquid assets to deposit liabilities at present. The balance-sheet total of Rs. 6.16 crores is likely to improve further as economic conditions in Myscre should be improving and the rise in prices and incomes should certainly have its own effect on the resources of the largest bank of the State.

BENGAL CENTRAL BANK, LIMITED

The Bengal Central Bank has achieved even greater success in 1942 than in 1941, and the achievements were summed up for the shareholders and clients by Mr. N. R. Sarker at the 24th Annual Meeting. The decision to increase the Bank's capital is justified by the balance-sheet changes which were explained admirably by the Chairman who stated that Rs. 11 lakhs worth of shares have been taken up and in the year of Jubilee the Bank's subscribed capital should increase further since total deposits stood at Rs. 2.83 crores. Permission to issue more new shares has been sought, and the record of 1942 showing an increase in profits and resources warrants complete confidence as to the brilliant future of the oldest Bengalee scheduled bank. Deposits increased in 1942 by Rs. 71 lakhs to stand at Rs. 2.21 crores in the balance-sheet as on December 31. Paid-up capital rose by over Rs. 2 lakhs and the Reserve Fund to Rs. 4 lakhs. The dividend of 10 per cent payable on the ten-rupee shares puts them in a special class, as they are not new shares, but one in a successful and well-established bank, distinguishable easily from those of new flotations in many ways.

In the balance-sheet, cash etc., totalling Rs. 57.45 lakhs is equal to 26 per cent of total deposits and investments at Rs. 87.09 lakhs are equal to 39 per cent of deposits. The degree of liquidity shown in the latest balance-sheet may claim more than usual attention in view of Mr. Sarker's remarks as to the growth of profits. The Board has been reinforced by Mr. B. N. Chaturvedi, President of the Calcutta Stock Exchange. The exceptional protection enjoyed by depositors is illustrated by the cash ratio of 26 per cent and the proportion of advances totalling Rs. 89.98 lakhs and investments Rs. 87.09 lakhs to total deposits of Rs. 220.73 lakhs. The acquisition of a site for suitable premises is not the least important of the events of the year. The strain of the opening months did not hamper usual expansion of activity. The Board record their satisfaction with the results described in the Chairman's speech at length. Mr. Sarker's views on banking development in the war period should command attention, and his plea for hastening slowly is entitled to special consideration.

Those who look to the exceptional progress made by the Bengal Central Bank since 1940 under Mr. J. C. Das will appreciate the difference between the old and the new, and for those who recognise the efficiency and permanence of the service given by the Bengal Central Bank, the figures have special value. No bank in Bengal can claim the same rate of progress in the first stage of its re-organisation and the Bengal Central's achievement in three years fulfils every test. It has more than stood the strain noted in December 1941 and succeeded also in getting its full share of the prosperity vouchsafed to banks in the war period. The figures now available indicate the magnitude of the meritorious achievement. Expansion has been secured without branch extension and the Bengal Central is represented by 4 branches in Bihar only.

BHARAT BANK, LIMITED

The balance-sheet of Bharat Bank, Limited for the period ending September 30, 1943 has been published. Needless to say, considerable interest attaches to the activities of the Bharat Bank, Limited. It is one of the large new banks in this country with the biggest paid-up capital. The accounts show that the Bank has been able to gather total deposits of Rs. 8.34 crores. The paid-up capital is Rs. 2.01 crores. Having regard to the large size of the paid-up capital, the calls in arrears are rather small at Rs. 16,543. Out of the paid-up capital of Rs. 2.01 crores, Rs. 53.57 lakhs is in 6 per cent cumulative preference shares of Rs. 100 each and the balance in ordinary shares having varying paid-up values and the deferred capital of Rs. 6 lakhs in six lakhs shares of Re. 1 each. It will thus be seen that against total deposits of Rs. 8.34 crores the uncalled liability in respect of subscribed capital is as much as Rs. 11.51 crores, the total of subscribed capital being Rs. 13.53 crores. The interest of depositors has, therefore, been fully safeguarded. On the assets side, the disposition of funds has been made in a satisfactory manner. Total advances amount to Rs. 2.96 crores out of the total of the balance-sheet of Rs. 11.79 crores. Cash in hand is as much as Rs. 3.38 crores and investments at cost Rs. 3.9 crores. Of the total investments of Rs. 3.9 crores, Government securities alone are for Rs. 3.5 crores. Cash and investments thus nearly cover the total of deposits. The gross profit of Rs. 22.62 lakhs has been able to cover fully all the preliminary expenses incurred in opening up branches, which is not heavy, having regard to the number of branches opened. The net profit is Rs. 2,56,218 and it is hoped that the progress during the current half-year will be more rapid and that shareholders will be able to realise a substantial premium on their investment.

CALCUTTA COMMERCIAL BANK LIMITED.

In the year ended December, 1942, the Calcutta Commercial Bank Limited has made striking progress, the increase in deposits alone being as much as Rs. 33 lakhs. There has

THE BANK OF INDIA LIMITED

(Established 7th September, 1906)

Capital Subscribed - - - Rs. 2,00,00,000
Capital Paid-up - - - ,, 1,00,00,000
Reserve Fund - - - - ,, 1,20,50,000

Head Office :—**QRIENTAL BUILDINGS, BOMBAY**

BRANCHES:

AHMEDABAD:
Bhadra (Main Office)
Ellis Bridge
Station Branch

AMRITSAR

ANDHERI:
Near Bombay

BANDRA:
Near Bombay

BHUJ (Kutch)

BOMBAY:
Bullion Exchange
Colaba
Kalbadevi
Malabar Hill

CALCUTTA:
102-A, Clive Street
(Main Office)
Bara Bazar
Chowringhee Square

JAMSHEDPUR

KARACHI

NAGPUR:
Kingsway
Itwari Bazar

POONA

POONA CITY

RAJKOT

SURAT

London Agents:—**THE WESTMINSTER BANK, LTD.**

Directors:

Sir Chunilal V. Mehta, K.C.S.I., Chairman.
Mr. Ambalal Sarabhai
Sir Joseph Kay, Kt.

Mr. A. Geddis
Sir Cowasjee Jehangir, Baronet, K.C.I.E., O.B.E.

Mr. Dinsha K. Daji
Mr. Ramniwas Ramnarain
Manager :—A. C. Clarke.

Current Deposit Accounts—Interest is allowed on daily balances from Rs. 300 to Rs. 1,00,000 @ 1% per annum. Interest on balances in excess of Rs. 1,00,000 allowed by special arrangement. No credit will be given in an account for interest amounting to less than Rs. 5 per half-year.

Fixed Deposits—Deposits are received fixed for one year or for shorter periods, at rates of interest which may be ascertained on application.

Savings Bank—Accounts opened on favourable terms.

The Bank acts as **Executor and Trustee under Wills and Settlements**, and undertakes Trustee business generally—Rules may be obtained on application.

General Banking Business transacted.

MERCANTILE BANK OF INDIA, LIMITED

(INCORPORATED IN ENGLAND)

Authorised Capital - - - - £3,000,000
Subscribed ,, - - - - £1,800,000
Paid-Up ,, - - - - £1,050,000
Reserve Fund Capital - - - - £1,075,000

LONDON BANKERS:

THE BANK OF ENGLAND and THE MIDLAND, BANK, LIMITED

Head Office:—**No. 15, GRACECHURCH STREET, LONDON, E. C. 3.**

BRANCHES and AGENCIES:

CALCUTTA, HOWRAH, DELHI, SIMLA, KARACHI, BOMBAY, MADRAS, COLOMBO, JAFFNA, KANDY, GALLE, MAURITIUS, NEW YORK (U S.A.)

The Bank transacts banking business of every description throughout the world. Current Accounts opened.

FIXED DEPOSITS

Deposits are received for fixed periods on terms which may be ascertained on application.

Saving Banks Accounts opened at DELHI, SIMLA and HOWRAH.

The Bank undertakes Trusteeships and Executorships.

A. P. POWLES, *Manager,*

CLIVE BUILDINGS, 8, CLIVE STREET, CALCUTTA

Howrah Agency: **21, GRAND TRUNK ROAD, MAIDAN**

been a further increase in the subscribed capital to nearly Rs. 14 lakhs from Rs. 12.59 lakhs at the end of the prevoius year. The paid-up capital was Rs. 8.57 lakhs against Rs. 7.79 lakhs. It was possible to utilise a good proportion of the increase in deposits towards advances. The figure was, therefore, higher at Rs. 34.22 lakhs against Rs. 22.73 lakhs. Cash on hand and with other banks was considerably higher at Rs. 24.68 lakhs against Rs. 15.82 lakhs. Investment in Government securities also was higher at Rs. 10 47 lakhs against Rs. 2.3 lakhs while holdings in cumulative preference and ordinary shares and shares of joint-stock companies showed a sharp decrease to Rs. 2,58,035 against Rs. 7,13,166. Bullion on hand was Rs. 5.69,963 at cost against nil in the previous balance-sheet. Net profit was Rs. 94,109 against Rs. 36,880. The sum of Rs. 5,535 was utilised to write off completely preliminary expenses and Rs. 61,487 to write off commission on placing of shares. The amount of Rs. 31,160 is carried forward to the next account. A dividend of 4 percent was paid for 1941.

The Bank has made further progress in 1943 and in the middle of that year the paid-up capital improved further to Rs. 9.03 lakhs. Holdings of gold realised a profit of Rs. 60,215. There have also been additions to and sales from the Bank's holdings in ordinary shares which the Bank has been holding as a hedge against Government securities. The results of these purchases and and sales was a profit of Rs. 1.1 lakh while the market value of the remaining shares exceeded the book value by about Rs. 10,000

The policy of consolidating the Bank's position by closing down the comparatively less remunerative branches as stated in the last report, was further followed in the year under review. It has also been continued in the present year, and up till now 21 branches have been amalgamated with neighbouring offices. This has brought down the expense ratio, and improved the efficiency of administration during these uncertain days.

CALCUTTA NATIONAL BANK, LIMITED

The progress achieved by the Calcutta National Bank, Limited in the year ended June 1943, is very striking. Total deposits at the end of June 1943, were nearly two and a half times the figure at the end of June, 1942, the figures on the two dates being Rs. 1.50 crores and Rs. 64.47 lakhs respectively. Cash balances are considerably higher at Rs. 47.34 lakhs against Rs. 19.90 lakhs. Holdings of Bullion are Rs. 5.12 lakhs against Rs. 1.20 lakhs. The liquid position of the bank, as is evident from the balance-sheet, is excepticnally strong, i.e., more than 31 per cent of the total deposits are held in cash alone and to this is to be added bullion and giltedged securities, which works out to more than 52 per cent. Investments total Rs. 35.57 lakhs against Rs. 8.61 lakhs. Giltedged securities alone show an increase from Rs. 5.08 lakhs to Rs. 26.37 lakhs. Investments in stock exchange securities are Rs. 8.96 lakhs against Rs. 3.47 lakhs. In spite of the difficult conditions in the trade, advances are considerably higher at Rs. 73.86 lakhs against Rs. 40.45 lakhs. Land and buildings are higher at Rs. 13.61 lakhs against Rs. 10.42 lakhs. The directors point out that the value of the bank's properties are considerably in excess of the book value and that the bank has the advantage of a "hidden reserve" in these assets

Another significant feature to which attention must be drawn is the increase in the paid-up capital from Rs. 12.17 lakhs to Rs. 20 lakhs. The unsubscribed portion of the authorised capital was issued for public subscription in September, 1943 at a premium of Re. 1 per share. The number of shares for which applications were received exceeded by a large amount the number that was available for allotment. Since the new issue was made, there has been an appreciation in the quotation for the shares to over Rs. 13-6. The premium on the issue of shares, with the appreciation in the market value of investments, has resulted in an increase in the reserve to Rs. 5,06,848 from Rs. 3,94,278 in the previous year.

Owing to the increase in working expenses, with the expansion in the activities of the bank, the increase in the net profit for the year has not been quite proportionate to the increase in working funds. Nevertheless, the net profit for 1942-43 is substantially higher at Rs. 1,44,425 against Rs. 90,527 for 1941-42. After transferring Rs. 30,000 (Rs. 15,000) to Reserve, the dividend has been maintained on the increased capital at 5 per cent.

The bank buildings at Calcutta, Chittagong and Gaya are now completed while the Bank building at Patna is nearing completion. These new buildings have proved to be a very profitable investment.

CENTRAL BANK OF INDIA LIMITED.

Accustomed to report increase in deposits, advances and profits year after year, the Central Bank of India is, perhaps, the best example of what has been done by Indians for India in the field of finance. That large claim is certainly supported by the statement of progress in 1942. The balancesheet sheet is no formal document but a detailed analysis of changes that have again put the Central Bank a long way ahead of other banks. A comparison with the position at the end of 1941 suggests at once that the bonus added to the dividend is not the only true measure of the year's achievements. Deposits have risen by over Rs. 18 crores in spite of a small fall under time liabilities. The increase in 1941 was Rs. 9 crores, in the next year the increase is Rs. 18 crores. The usual anticipations have been proved correct in regard to profits as well. Net profit for the year is up from Rs. 41 lakhs to Rs. 49 lakhs in spite of a large increase in cash and fall under Advances. The total under Advances is Rs. 17 crores as against Rs. 18.85 crores a year ago so that the increase under Investments from Rs. 20.77 crores to Rs. 33.72 crores is the direct major consequence of an unprecedented increase in Deposits.

The increase in the Central Bank's resources and business was supported by an addition to the number of pay offices more than ever large and a new item of treasury bills. The Bank held Rs. 1.85 crores in treasury bills, and a steady increase hereafter may be anticipated since the tender rate is high and the weekly offer large while other employment for bank funds is not available. The fall under bills reported again is a symptom of slacker money conditions, but what impresses the public most is the increase in the balance-sheet total in a single year from Rs. 50.12 crores to Rs. 68.16 crores. The increase in profits is directly related to the growth of investments which must be helpful to the Government in sterlising free purchasing power and as settling its loan programme. It is noteworthy that the Central Bank of India's holding of loans repayable after 1953 has increased to the same extent as the holding of short-term loans. The Bank's support given to the giltedged market over the last year may be cited in favour of improved tone in giltedged this year. The disposition of profits also suggests that Government is getting its own share through the enhanced provision for taxation. The regular annual addition to reserves is raised by one lakh and the increase in the staff bonus is a graceful admission of the part the Bank's staff, headed by Mr. H. C. Captain, have played in a year that has been marked by more than satisfactory progress.

CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA.

The statement that the profits for 1942 are shown after providing for all bad and doubtful debts is, of necessity, again qualified by the fact that, in the case of agencies in enemy hands, the directors have no up-to-date figures to work upon. Where access to all the information required in respect of agencies still under the Bank's control is available the directors have made full provision.

Total of balance-sheet at £85,975,194 shows a decrease of some £4,950,359 accounted for on the Liabilities side by reductions of £1,025,016 in current and other accounts, £1,372,438 in fixed deposits, £949,180 in acceptances on account of customers, and £1,116,250 in loans payable. On the assets side, cash in hand and at bankers shows a decrease of £1,980,754 but the liquid position remains very strong. Government and other securities have fallen by £1,156,485 bills of exchange etc., by £1,506,480 and bills discounted and loans by £4,536,797. A closer analysis reveals that there is no dimunition in the aggregate figures of our agencies in India and Ceylon, in spite of the fact that bills of exchange and bills discounted and loans, figures are smaller, due to changes in the methods of financing commodities made necessary by the war. The balance of head office and inter-branch remittance drafts etc., in transit, has increased by £5,138,822 due to still greater delays in mails and to the continued use of returns of enemy-occupied agencies that are not up-to-date.

Turning to the profit and loss account, no results have been obtained this year from enemy-occupied agencies, whereas last year the directors were able to include the results of those agencies, in some cases for the first six months and in others for the full year. The Rangoon agency, after having been evacuated to Mandalay, had ultimately to be closed, and the foreign business is now almost entirely concerned with India and Ceylon. It need hardly be reminded. so long as the Japanese remain in possession of the Far Eastern agencies, not only is the Bank deprived of their earning power, but the directors also have to make suitable provision for the interned members of the staff besides a number of unknown contingencies. Under these circumstances, the final results of the year's working namely a profit of £296,664-8sh-3d may be considered very satisfactory.

The directors brought forward from 1941 a balance of £260,467-16sh-9d making a total available of £557,132-5-0 out of which

THE INDIAN BANK, LIMITED

HEAD OFFICE:

NORTH BEACH ROAD, MADRAS

Authorised Capital	- - - -	**Rs. 1,00,00,000**
Issued & Subscribed Capital	- - -	**,, 60,00,000**
Called & Paid-up Capital on 31st December, 1943		**,, 28,90,385**
Reserve Fund	- - - -	**,, 30,50,000**
Deposits	- - - -	**,, 8,13,62,549**

LOCAL OFFICES:

ESPLANADE: Broadway. | THEAGARAYANAGAR: Prakasam Road.
TRIPLICANE: Big Street. | PURASAWALKAM: Purasawalkam High Road.
MYLAPORE: North Mada Street. | MOUNT ROAD: "South View", Mount Road.

BRNCHES:

Alleppey, Bangalore City, Bangalore Cantt., Bezwada, Bombay, Calicut, Cochin, Coimbatore, Devangere, Erode, Guntur, Karaikudi, Kumbakonam, Madura, Mysore, Pudukottah, Quilon Salem, Sivaganga, Tirunelveli, Tiruppur, Tiruvarur, Trichur, Trichinopoly, Trivandrum, Tuticorin, Tanjore, Vellore, Rajahmundry, Dindigul, Virudhunagar, Mangalore.

SUB-OFFICES:

Gudivada, Tenali, Bhimavaram, Repalli, Tanuku, Devakottah, Palacole Cannanore, Narasaraopet, Tadepallegudam, Koilpatti, Guntur Bazar, Tirunelveli Town, Ernakulam.

LONDON & NEW YORK AGENTS:

NATIONAL CITY BANK OF NEW YORK

N. GOPALA IYER, *Secretary.*

THE BANK OF BEHAR LIMITED

ESTABLISHED 1911

Head Office: **PATNA**

Authorised Capital	- -	**Rs. 30,00,000**
Subscribed	- - - -	**Rs. 21,31,250**
Paid-up	- - - -	**Rs. 16,43,760**
Reserve Funds	- - -	**Rs. 7,90,000**

Branches and Sub-Offices:

Arrah	**Calcutta**	**Gaya**	**Madhubani**	**Patna City**
Beharsharif	**Chapra**	**Jamalpur**	**Monghyr**	**Raxaul and**
Benares	**Daltonganj**	**Jaunpur**	**Motihari**	**Siwan**
Buxar	**Darbhanga**	**Jharia**	**Muzaffarpur**	

Advances against commodities made

Deposit received at interest.

All kinds of banking business done.

R. C. PANDIT

General Manager.

an Interim Dividend at the rate of 5 percent per annum costing £750,000 was paid in September, 1942. From the balance of £482.132-5sh-6d the directors paid a final dividend for the half-year to December 31, 1942, at the rate of 5 percent per annum costing £75,000 and £50,000 was transferred to Officers' Pension Fund leaving £357,132-5sh-0d to be carried forward.

COMILLA BANKING CORPORATION LIMITED.

A small inset table in the balance-sheet of the Comilla Banking Corporation Limited, suggests that exceptional prosperity is not confined to one or two banks, but is a generic characteristic of Bengal's banks. Perhaps, the feature to which greater interest attaches is the increase in capital. An offer of shares to the shareholders last year led to an useful addition to capital, and the further accretion to the paid-up capital before and after the promulgation of Rule 99A is the surest index of progress in this case. Issue at a premium was exceptionable, and calls in arrears should raise the paid-up capital to nearly Rs. 30 lakhs at the end of 1943, though no ratio between capital and deposit is desirable, the proclaimed intention to issue new shares, so as to augment resources from within, receives its justification from the proposals approved by the Reserve Bank Board this year. The principal feature is not the growth of deposits, but the further increase in capital since the former is the consequence of monetary policy as much as the bank's improving position. The increase in reserves during the limited period is, however, of special significance as proving that reserves received more attention than the issue of new capital, and the half-year's profit has since led to a further addition. The increase of Rs. 1.34 crores in total deposits is accompanied by other changes in the balance-sheet. It is not surprising that cash and bankers' balances constitute the principal asset when the demand for money has been moderate. The cash ratio is over 42 percent in this case, and the proportion of advances and acceptances to total funds is as low as 25 percent suggesting that liquidity is the outstanding feature of the balance-sheet published. Investments totalling Rs. 1.55 crores are virtually limited to trustee securities as may be expected and conventional estimates of the total under cash and investments to deposits are hardly required. The Comilla Banking Corporation is not as old as jointstock banks go but it has long looked beyond East Bengal, and the benefits of careful and enterprising direction have been vouchsafed as may be inferred from the fairly large holdng of bills shown in the balance-sheet. The Bank's position must be influenced by the increase in incomes and thrift observable during the war period and the expansion of profits to correspond to the increase in resources appears inevitable, so as to justify in another way the successful placing of the Bank's new shares.

The balance-sheet of the Comilla Banking Corporation Ltd., for the half-year ended June 30, 1943, records striking progress over the previous accounting period. The subscribed capital, paid-up capital and reserve funds have considerably improved, and all these items have further increased by lakhs at present. The most notable feature of the balance-sheet is the extreme liquidity of assets to total deposit liability, cash and G. P. notes etc., amount to Rs. 3,42,66,219-14-2½p which works out at nearly 80 percent of the total deposits of Rs. 4,29,44,435-6-7½p. This liquidity testifies to a praiseworthy conservative policy. The profits earned for the half-year under report are Rs. 1,77,920-12-9½p which is again, a notable achievement after maintaining such satisfactory liquid position. Bengalee banks have to work under great odds and the directors record with pleasure that the Comilla Banking Corporation Ltd, has worked its way up to this present satisfactory position during the last thirty years of hard, patient and honest work.

COMILLA UNION BANK LIMITED.

The Balance Sheet of the Comilla Union Bank Ltd as on the 14th of April, 1943 reveals striking progress in all directions. It is gratifying to find that the biggest Bengalee managed Bank has been able to maintain its trditional progress. There has been remarkable increase in Paid-up Capital, Deposits and Working Funds, the figures being Rs. 24,98,225, Rs. 4,20,27,616 and Rs. 4,99,09,638 as against Rs. 14,09,320, Rs. 2,41,55,663 and Rs. 2,87,76,819 as in the previous year. The figures speak for themselves and give satisfaction that, at last, a Bengalee managed Bank has been able to do a business of about five crores of rupees.

What is striking is the successful issue of shares at suitable premium. During the year under review, fresh issue of shares of the total face value of Rs. 25 lakhs of Rs. 25 per share was issued at a premium. It is gratifying to note that within a very short period the whole issue was very quickly taken up and at the date of the closing, the Paid-up Capital of the Bank reached a figure of Rs. 24,98,225 showing an increase by about Rupees eleven lakhs over the figure of the previous year. The entire issue of Rs. 50 lakhs had been fully subscribed and the authorised capital of the Bank was increased to Rupees one crore.

The Bank is building up Reserves rapidly. The Reserves of the Bank stand at over Rupees twelve lakhs showing an increase of over Rupees four lakhs in one year. This clearly shows the sound and cautious policy adopted by the management.

There is a remarkable and striking increase of deposits of the Bank during the year under review. The total deposits of the Bank, as on the 14th April, 1943 stood at Rs. 4,20,27,616 as against the deposit of Rs. 2,41,65,663 of the previous year—thus showing an increase of Rs. 1,78,61,953. As against the deposits of Rs. 4,20,27,616 it had cash balances aggregating Rs. 1,40,46,193 and investments at Rs. 1,71,77,241. The bulk of the investments, to be precise, Rs. 1,66,80,191, consists of Government Securities. On the above basis the ratio of liquid assets to total deposits works out to 74 per cent and the ratio of cash to deposit to 33 per cent. From the above figures it will be noted that the liquid and cash position of the Bank is quite satisfactory.

The examination of the Balance Sheet reveals that advances during the year under review has very slightly increased which may be attributable to the plethoric state of the money market. It is a well known fact that the general trend of Bank advances in India during the year was downward. But the decrease in advances has been off-set by the increase in Government securities and Treasury Bills in the investment portfolio. Another striking feature of the Balance Sheet is the very low percentage of fixed assets.

The gross and net profits of the Bank show a remarkable increase. The gross profit of the year is Rs. 13,09,287 which compares much favourably with Rs. 10,37,675 for the previous year. The net profit of the year at Rs. 2,02,586 discloses an increase of Rs. 79,157 over the previous year. After providing for dividends, Staff Gratuity Fund, Taxation and Charitable grants etc. the balance carried forward is Rs. 1,01,506-3-1 as compared with Rs. 47,600 brought forward from the previous year.

The position the Bank has been able to attain points to its growing popularity The achievements in a year characterised by uncertainties stand out as a landmark in the career of a Bank which in twenty-one years has forged ahead of its fellows.

The striking changes during the past year in Capital and resources alike warrant the hope that the Bank will be able to attain the position to rank with the big five of India. The steadily growing importance of the Bank will be further evident from the fact that it has been licensed by the Reserve Bank of India as one of the dealers in Dollar exchange —the only Bengalee managed Bank to attain this distinction. All praise and encomiums for this remarkable growth and pre-eminent position of the Bank are due to Dr. S. K. Dutt, the Managing Director, who is at the helm of the Institution and under whose able guidance the affairs of the Bank are being managed.

COMPARATIVE STATEMENT

Liabilities.

	Year ended April. (000's omitted).		
	1941.	1942.	1943.
	Rs.	Rs.	Rs.
Capital ..	12,18	14,09	24,98
Reserves ..	7,28	7,91	12,00
Deposits ..	2,07,75	2,41,66	4,20,28
Other items ..	26,62	22,45	39,33
Profit and Loss Account ..	1,32	1,66	2,50
Total ..	2,55,15	2,87,77	4,99,09
Assets.			
Cash ..	70,08	53,38	1,39,65
Investments ..	40,80	63,92	1,71,77
Loans and Advances ..	1,20,67	1,50,30	1,54,70
Bills receivable .	4,07	5,93	14,73
Other items ..	19,53	14,24	18,04
	2,55,15	2,87,77	4,99,09
Percentage of Capital & Reserve to deposits	9.36	9.11	8.73
Percentage of cash to deposits ..	33.73	22.09	33.27
Percentage of liquid assets to deposits ..	53.37	48.54	74.01

DEVKARAN NANJEE BANKING COMPANY LIMITED.

The Devkaran Nanjee Banking Company Ld., is one of those new banks which have the advantage of established connections. As such, there was no difficulty in making rapid progress in the war period with the large volume of surplus funds available. The balance-sheet for the year ended December

THE BANK OF BARODA, LTD.

(Incorporated in Baroda, Liability of Members being Limited)
Established 1908

Under the Patronage of and Largely Supported by the Government of
H. H. THE MAHARAJA GAEKWAR OF BARODA

CAPITAL AUTHORISED	- - -	Rs. 2,40,00,000
CAPITAL ISSUED	- - -	,, 2,00,00,000
CAPITAL SUBSCRIBED UPTO 31-12-43	-	,, 1,99,88,200
CAPITAL CALLED & PAID UP UPTO 31-12-43		,, 83,88,140
RESERVE FUND 19-8-43	- - -	,, 98,93,510
DEPOSITS AS AT 30-6-43	- - Over	,, 7½ Crores.

Head Office : **BANK ROAD, BARODA**

Calcutta Branch : **11, CLIVE STREET**

BRANCHES :

Ahmedabad (Bhadra), Ahmedabad (Panchkuva), Amreli, Bhavnagar, Billimora, Bombay (Fort), Bombay (Zaveri Bazar), Calcutta, Dabhoi Dwarka, Harij, Kadi, Kalol, Kapadwanj, Karjan, Mehsana, Mithapur, Navsari, Patan, Petlad, Port Okha, Sankheda, Sidhpur, Surat, Unjha, Visnagar, Vyara.

CALCUTTA LOCAL COMMITTEE :

SETH BAIJNATH JALAN, (Messrs. Surajmull Nagarmull)
Dr. SATYA CHURN LAW, M.A., B.L., Ph.D. (Messrs. Prawn Kissen Law & Co.)
SETH SURAJMULL MOHTA, (Jute & Gunny Brokers Ltd.)
Mr. K. M. NAIK, G.D.A., R.A., (Manager, National Insurance Co., Ltd)

London Agents : **THE EASTERN BANK LTD.**

Banking business of every description transacted on terms which may be ascertained on application

W. G. GROUNDWATER. *General Manager.* **BARODA**

S. H. JOKHAKAR, *Ag. Manager,* **CALCUTTA**

DENA BANK

DEVKARAN NANJEE BANKING CO. LTD.

Established 1938

Authorised Capital	- - Rs.	50,00,000
Subscribed Capital	- - Rs.	20,00,000
Paid-up Capital	- - Rs.	14,67,500
Reserve Fund	- - Rs.	1,20,000
Total Deposits 30-11-43	- Rs.	3,79,26,000
Total Working Funds ,,	- - Rs.	4,16,63,000
No. of Accounts ,,	- -	17,573
No. of Branches	- -	21

DENABANK SERVICES

★ BANKING SERVICES
★ CASH CERTIFICATES
★ INVESTMENT SERVICE
★ SAFE DEPOSIT VAULTS
★ SAVINGS INSURANCE
★ SMALL SILVER BARS
★ SUNDAY SAVINGS BANK SERVICE

Head Office:
DEVKARAN NANJEE BUILDINGS,
Elphinstone Circle Fort, BOMBAY

21 BRANCHES

PRAVINCHANDRA V. GANDHI
Managing Director.

COMILLA BANKING CORPORATION LTD.

CALCUTTA - CAWNPORE - DELHI - BOMBAY

Head Office: **COMILLA**

Calcutta Main Office: **4, CLIVE GHAT STREET**

ESTABLISHED 1914

Other Calcutta Offices:
BARABAZAR, HIGH COURT, SOUTH CALCUTTA

OTHER BRANCHES

Lucknow, Cawnpore, Delhi, Bombay, Dacca, Nawabpur, (Dacca), Narayanganj, Netaiganj, Barisal, Jhalakati, Chandpur, Puran Bazar, Hajiganj, Brahmanbaria, Dibrugarh, Cuttack, Jalpaiguri, Bazar Branch (Comilla), Chittagong.

Agency :—**NEW STANDARD BANK LTD.**

Silchar, Sylhet, Chhatak, Shillong, Tinsukia, Burdwan, Mymensingh, Tangail, Faridpur, Khulna, Asansol, Jorhat, Ranchi and correspondents in all other important trade centres of India.

London Agents:
WESTMINSTER BANK LTD.

A COMPLETE AND EFFICIENT SERVICE IN BANKING AND FOREIGN EXCHANGE BUSINESS OF ALL DESCRIPTIONS.

CAPITAL

AUTHORISED	Rs.	1,00,00,000
ISSUED	- ,,	60,00,000
SUBSCRIBED Over	- ,,	60,00,000
PAID-UP Over	,,	31,00,000
RESERVES	- ,,	15,00,000

Managing Director :—**Mr. N. C. DUTTA, M.L.C.**

1942 shows that deposits both on current, fixed and savings account were Rs. 1.26 crores against Rs. 45.75 lakhs at the end of the previous year. Total deposits at the end of 1940 were only Rs. 20.6 lakhs. Loans and advances have improved by a small amount to Rs. 18.8 lakhs from Rs. 12.93 lakhs while investments have increased sharply to Rs. 85.26 lakhs from Rs. 31.1 lakhs. Cash balances are Rs. 21 lakhs higher at Rs. 33.46 lakhs. Investments in Government securities have increased from Rs. 21.4 lakhs to Rs. 70.21 lakhs while the sum of Rs. 1.65 lakhs has been placed in debentures against nil previously. Shares in jointstock companies are of the value of Rs. 13.4 lakhs against Rs. 9.4 lakhs. Bank premises were shown at Rs. 8,42,209 in the previous account and have increased to Rs. 11,22,933 at the end of 1942. The Bank has made even more striking progress in 1943, deposits at the end of October being as much as Rs. 3.19 crores. Total working funds were Rs. 3.49 crores, the number of accounts 16,302 and the number of branches 21 At the end of 1942 authorised capital was Rs. 50 lakhs and the issued and subscribed capital Rs. 20 lakhs. The paid-up capital was Rs. 11.3 lakhs. There is no change in the authorised and subscribed capital at the end of October 1943 but the paid-up capital is Rs. 3 lakhs higher at Rs. 14.35 lakhs while the reserve fund is Rs. 1.2 lakhs against Rs. 20,000. Out of the profits for 1942 deferred expenditure for Rs. 13,660 was written off in full. This item in the balance-sheet is shown as nil. Out of the balance amount of Rs. 2,14,560 the total profit was Rs. 30,526 for 1941. A sum of Rs. 1 lakh was transferred to reserve fund and Rs. 5,000 to the small silver bars department goodwill account. A dividend of 3½ percent, free of tax, was paid out of the balance. It is the first dividend to be paid by the Bank.

HABIB BANK LIMITED.

The remarkable progress in a single year removes the Bank definitely from the category of new, unproved enterprises against which a caution was given by Professor Davar. The Habib Bank's statutory report indeed suggested that by getting its entire share capital in the briefest of periods and being admitted to the Second Schedule at once, the Bank had more than made good. All anticipations as to further progress have been fulfilled in the period of 16 months covered by the report and accounts. The shareholders who will have a right to take up the new preference shares will be duly gratified by the maiden dividend of Rs. 3 per share payable from profits after appropriating Rs. 1 lakh to Reserve and Rs. 60,000 for taxation.

The profit struck for 16 months or rather 14 months of successful working is as large as Rs. 3.66 lakhs and the dividend on Rs. 25 lakhs of paid-up capital takes only Rs. 1.51 lakhs. The directors record satisfaction with the progress shown in the first year. Expansion is admittedly desirable, and the additional capital of Rs. 25 lakhs along with the contingent liability to the extent of Rs. 50 lakhs will put the Habib Bank among the oldest and most successful of Indian banks.

The Habib Bank is now well established as a distributor of gold and silver to its depositors and others. And the Board has also expressed its thanks to the Bombay Mint for its help in providing gold and silver bars. The auspicious entry into the bullion trade has been followed by the issue of cash certificates. Depositors should be pleased by the payment of a bonus of 10 per cent in addition to interest for 1942 on their current accounts and they should be even more pleased with the astounding increase in deposits. At the end of 1942 the Bank's total deposits exceeded Rs. 239.49 lakhs. The advantage of a large paid-up capital will be appreciated by all banks who would find evidence of exceptional liquidity in the case of the Habib Bank achieved in this case by limiting investments and quick realising of profits thereon. It is noteworthy that the Bank at the end of 1942 reported advances exceeding Rs. 103.78 lakhs against which Rs. 116.68 lakhs was on deposit with the Bank of India. The cash ratio is not the only guarantee of experienced and skilful management in this case. The distribution of advances supports the belief that the managing directors have well nursed the bank in its first year. The Habib Bank is now more fortunately placed to obtain its share of the growing volume of bank deposits in India, and it would not surprise Bombay if deposits top Rs. 5 crores within this year.

INDIAN BANK LIMITED.

There have been two outstanding developments in banking in South India as may be inferred from balance sheets published in 1943. There was a drain on cash up to the end of June, 1942 and beyond followed by a steady recovery to which improved conditions contributed in a measure. There was an addition to capital to support the recovery through the second half of 1942. If allowance is made for the abnormal factors operative in the past year, the usual comparisons with the balance sheets of 1941 will lose their validity. The recovery since June alone has relevance and the Indian Bank's revival is all the more more impressive, because of the increase in its cash balances towards the end of 1942. Deposits show a fall of Rs. 1.2 crores compared with December, 1941, but the initial caution will save many from drawing the familiar conclusion. The setback is unimportant by any reckoning. What matters is the successful issue of new shares at a suitable premium, the striking recovery in the quotation for the shares, and the maintenance of business over a difficult period so that the dividend is the same as before. The influence of reduced Advances is most pronounced on the profit and loss account for 1942. The net profit for 1942 is approximately half of that reported in 1941 but the loss of overseas connexions, the strain on available resources and the plethora of money, like the grounding of interest rates in the war period, must be regarded as depressant factors. That investments are higher than Advances in the balance sheet will not occasion surprise owing to the fall in bills and advances, overdrafts etc. reported by the majority of banks. The high cash ratio over 28 per cent strengthens in the case of the Indian Bank the depositors' position and the reduction in rates of interest effected should restore the balance between income and outgo. The various marks of reform certainly derive their importance from the experience of 1942. Panic forced idleness for a period and the Directors' satisfaction with the results explains the maintenance of the dividend at 10 per cent for 1942. Since the Reserves are strong, there is no call to add to them and the Contingent Fund alone receives an allocation from 1942 profits. Material assistance in the 33rd year of working should be obtained by the large addition (made out of shares premiums) to the Reserve Fund which is again in excess of the paid up capital, increased by the issue of shares and the call made on the holders of partly-paid shares. The balance sheet of June, 1943 should, therefore, be of high interest to others besides shareholders of the Indian Bank, Limited.

Statement of Affairs as on November 26, 1943.

Liabilities—	Rs.	A.	P.
Capital Authorised ..	1,00.00.000	0	0
Capital Issued and Subscribed ..	60.00.000	0	0
Capital Paid up ..	28.89.143	5	0
Reserve & Other Funds	30,50.861	7	9
Deposits ..	8,14,31,673	4	2
Loan against Securities ..	....		
Sundries ..	42,27,689	4	6
Bills for Collection ..	36,62,813	11	2
Foreign Bills, Letters of Credit ..	1,59,158	1	5
Total ..	9,54,21,339	1	6

Assets—			
Cash on hand and with Bankers ..	1,67,62,217	5	5
Investments:			
Govt. of India Securities & Indian State securities ..	3,69,97,247	14	6
Debentures ..	2,83,466	10	8
Govt. of India Treasury Bills ..	34,92,637	8	0
Investment of Staff Security Deposits ..	4,79,895	13	9
Other Investments ..	1,92,906	12	2
Loans, Bills discounted, Bills Purchased & Other advances ..	3,10,76,787	15	9
Bank premises & other properties ..	2,10,971	15	0
Safes, Furniture, Books, Forms & Stationery etc. in stock ..	4,13,801	15	11
Sundries ..	16,89,323	5	9
Bills for collection per contra ..	36,62,813	11	2
Foreign Bills, Letters of Credit etc. ..	1,59,158	1	5
Total ..	9,54,21,339	1	6

INDO-COMMERCIAL BANK LIMITED.

The further recovery in deposits redounds entirely to the credit of the Indo-Commercial Bank whose balance-sheet proves again that real progress has been made by one more of the "Little Five" in India. The absence of any dividend on the A and B shares does not point to any noticeable change in profits. The recent additions to Reserves and the provision for taxation are large. The payment of 3 per cent tax-free on the C shares follows the request made in a circular of September 1942 to this class of shareholders to waive their right for a period to prepayment of tax. The net profit of over Rs. 1 lakh is reported after the Bank had written off all Branch preliminery expenses. The last should help in putting the A and B shares on a firmer basis in the future.

Of more interest is the rise in total deposits to Rs. 129.4 lakhs. The Indo-Commercial Bank made limited headway after 1938, when the banking crisis in South India led to large withdrawals. The trend was defi-

HABIB INSURANCE
COMPANY LIMITED

LIFE, FIRE, MARINE, MOTOR AND ACCIDENT

Authorised Capital	-	Rs. 1,00,00,000
Issued & Subscribed Capital	-	,, 50,00,000
Paid-Up Capital	-	,, 25,00,000
Reserve Fund	-	,, 2,50,000

Branch Office : 26, Dalhousie Square West, Calcutta
Head Office : Hanuman Building, Tamba Kanta, Bombay
Other Branches : Lahore, Delhi, Peshawar and Ahmedabad

HABIB BANK LTD.
BOMBAY

Main Office : Dada Manzil, Mahomedali Road.
Branch : Madan Mansion, Zaveri Bazar.
London Agents : Midland Bank Ltd.

CAPITAL & DEPOSITS

Authorised Capital	Rs.	2,00,00,000
Issued and Subscribed Capital	,,	1,00,00,000
Paid-Up Capital	,,	50,00,000
Reserve Fund	,,	2,00,000
Deposits as on 31-12-43	,,	3,07,74,000

HABIB BANK'S GOLD & SILVER BARS AVAILABLE IN CONVENIENT DENOMINATIONS

COMPLETE BANKING SERVICE

INDO-COMMERCIAL BANK LIMITED

Registered Office : MAYAVARAM
Central Office : MADRAS

Authorised Capital - Rs. 25,00,000
Issued & Subscribed Capital Rs. 21,25,000
Paid-up Capital (30-9-43) - Rs. 18,74,719
Total Resources exceed - Rs. Two Crores

BRANCHES :

AMDALAVALSA	MADURA	TANJORE
ANAKAPALLE	MAMBALAM	TINNEVELLY
CHIDAMBARAM	MAYAVARAM	TRICHINOPOLY
CONJEEVARUM	MYLAPORE	VELLORE
ERODE	PALGHAT	VIJAYAPURAM
KARAIKUDI	PUDUKOTTAH	VIRUDHUNAGAR
KUMBAKONAM	SHIYALI	and
MADRAS	TADEPALLIGUDEM	VIZIANAGRAM

FIXED DEPOSITS : received for one year at 2½% p.a. for two years at 3% p.a.
SAVINGS BANK ACCOUNTS opened : Interest allowed at 2½% up to Rs. 5,000, withdrawals by cheques Rs. 250 per week.
CURRENT ACCOUNTS : opened and interest allowed at ½% p. a.
LOANS & ADVANCE : Against Bullion, Government Pronotes, approved shares, securities and Merchandise.

Banking Business of Every Description Transacted

BOARD OF DIRECTORS

Sri. T. R. Venkatarama Sastri, C.I.E. (*Chairman*)
Sri. V. Venkatarama Aiyer, M.A., B.L.
Sri. R. S. A. Sankara Aiyer.
Sri. R. Viswanatha Aiyer, B.A., B.L.
Sri. K. Sivaswami, Aiyer.
Sri. S. N. N. Sankaralinga Aiyer, (*Managing Director*)

THE HINDUSTAN COMMERCIAL BANK LTD.

Head Office :—Marwari Library Building, CAWNPORE

Authorised Capital Rs. 5,00,00,000
Issued & Subscribed Capital Rs. 2,50,00,000
PAID-UP CAPITAL - Rs. 1,24,93,375

Chairman: Sir PADAMPAT SINGHANIA Kt., M.L.A.

DIRECTORS :

Sir Chunilal B. Mehta
L. Ram Ratan Gupta, M.L.A. (Central)
R. B. Rameshwar Prasad Bagla
Badrul Islam Esqr., Bar-at-law
L. Karam Chand Thapar
L. Shanker Lall
S. B. Sardar Gur Buksh Singh
L. Gurusharan Lall

MANAGING DIRECTOR :
L. KISHEN CHAND PURI, B.A., F.I.B. (London)

Chief Accountant :
Mr. BALWANT SINGH, B.A., LL.B.

Secretary :
M. L. GUPTA, Esqr., M.A. B. Com., A.S.A.A., R.A., Incorporated Accountant.

BRANCHES AND OFFICES AT :

CAWNPORE : Meston Road, Fahimabad, Kalpi Road, UNAO : Kalpi, Mauranipur.
LUCKNOW : Aminabad, Daliganj. GONDA : Nanpara and Bahraich.
GORAKHPUR : Padrauna. LAHORE : Rangmahal and Bukshi Market, Anarkali.

BOMBAY, CALCUTTA, DELHI, ALLAHABAD, BENARES.

OPENING BRANCHES IN OTHER PRINCIPAL TOWNS ALL OVER INDIA

GENERAL BANKING BUSINESS TRANSACTED.

nitely reversed only in 1941 and the latest balance-sheet affords proof of a large revival of confidence. Examination reveals that advances totalling Rs. 54 lakhs nearly at the end of 1942 are well distributed. The ratio of advances to deposits in the case of the Indo-Commercial Bank is fairly high, but much higher is the ratio shown under cash balances amounting to Rs. 59.23 lakhs to total deposits of Rs. 129.4 lakhs, a ratio really large for a fairly old and well-known bank. A very liquid position has been maintained in spite of the increase shown under investments at the end of 1942. The high degree of security enjoyed by the depositors of the Bank in all years warrants the judgment that the total under deposits will keep rising in spite of the reduction in interest allowed on all classes of deposits. The Board is confident that dividends will be resumed in the coming years since the growth of deposits and the enlarged demand for demands constitute enduring advantages.

LLOYDS BANK LIMITED.

Lloyds Bank Limited is one of the oldest as well as one of the largest of the great London joint stock banks, it having been formed as a private bank in 1765 and incorporated as a joint stock company just a hundred years later. Since its incorporation the Bank has absorbed or acquired a preponderant holding in many other well-known banks, among the most recent being the Capital and Counties Bank Ld., the National Bank of Scotland, Ld., the West Yorkshire Bank, Ld., Fox Fowler & Co., Bank of London and South America Limited. Cox & Co., and Henry S. King & Co.

To take the Liabilities side first, Current, Deposit and other Accounts again stand at a record figure and show an increase over last year of £65,000,000. Reserve Fund stands at £10,000,000.

On the Assets side, Cash in hand and with the Bank of England has increased by £4,061,000 and Balances with, and Cheques in course of collection on other Banks in the British Isles by £2,597,000.

Money at Call and short Notice has increased by £55,000 and the balance of British Bills of Exchange and Colonial and Foreign Bills by £1,998,000.

Investment in British Government Treasury bills has been increased by £13,835,000 and the Investment in British Government Short Term Securities, other Securities of, or Guaranteed by, the British Government and Indian and Colonial Government securities, and British Corporation stocks has increased by £30,063,000. In addition the Bank has lent to the Government £155,000,000 in what is called Treasury Deposit Receipts, the figure last year being £140,500,000.

The net profit is £1,364,000 which shows an improvement of £90,000 over last years figure.

(Year ended December). (000's omitted).

	1942	1941	1940
Liabilities—			
Capital ..	15,810	15,810	15,810
Reserve Fund	10,000	10,000	10,000
Deposits ..	646,173	581,314	490,827
Acceptances ..	77	265	680
Endorsements etc. ..	*22,332	*21,357	*19,598
Profit & Loss A/c. ..	994	978	1,036
Total ..	695,386	629,724	537,951
Assets—			
Cash ..	125,606	118,243	106,769
Investments ..	395,871†	337,006†	243,542†
Bills Discounted	3,763	1,764	1,766
Loans & Advances ..	120,356	128,539	140,533
Customers Acceptances ..	77	265	680
Endorsements etc. ..	22,332	21,357	19,598
Property ..	10,103	10,187	9,521
Other items ..	17,278	12,363	15,542
Total ..	695,386	629,724	537,951
Percentage of Capital and Reserve to Deposits ..	3.99	4.44	5.25
Percentage of Cash to Deposits ..	19.44	20.34	21.75
Percentage of Liquid Assets to Deposits	38.95	40.90	42.76
Profit and Loss Items—			
Brought Forward ..	529	520	519
Net Profit ..	1,364	1,274	1,384
Dividend Distribution ..	918	915	1,033
Allocation to funds ..	450	350	350
Carry Forward	525	529	520
Dividend per cent ..	‡12 § 5	‡12 § 5	‡12 § 5

‡ 'A' Shares. § 'B' Stock.

*Includes Notes in circulation (Isle of Man).

†Includes the balance of Treasury Deposit Receipts.

MERCANTILE BANK OF INDIA LIMITED.

As in the case of the Chartered Bank, there is no reduction in deposits in 1942. Current, fixed and other accounts including rebates and provision for taxation and bad and doubtful debts are actually higher at £25.079 millions against £24.784 millions in 1941. Bills payable were further lower at £588,080 against £130,000. Cash balances are substantially higher at £8.06 millions against £5.9 millions while investments in British and Indian Government and other securities was £12.8 millions against £9.3 millions. Deposits against note issue was more or less the same at £361,000. Loans and advances were appreciably lower at £3.6 millions against £5.7 millions as also bills receiveable at £2 million against £5.7 millions. It is not surprising therefore that there has been a decline in profits to £131,916. The amount available for distribution after adding £182,268 brought in from the last account is £314,184. From this sum has to be deducted £31,500 being the Interim Dividend of 3 percent less income-tax on "A", "B" and "C" shares paid in September, 1942. The Directors have added £13,000 to the Officers' Pension Fund, written £25,000 off Freehold Banking Premises, and made an additional allocation of £30,000 to Contingencies Account. They have declared a second Interim Dividend on the "A", "B" & "C" shares of 3 percent less income-tax (making 6 percent for the year), and as they do not recommend any further distribution, this leaves £183,184-1-3d to be carried forward.

NATH BANK LIMITED.

It is easy to see how the increase in deposits during 1942 (by over Rs. 63 lakhs in fact) supported the increase in profits reported by the Nath Bank, Limited. Formal comment on the balance-sheet and accounts is not required to show how the increase in dividends follows the increase in profits, the larger appropriation to reserve, and the special grant for charity and bonus. The issue of new shares recently was a direct result of the very considerable progress made by the Nath Bank, and wholly demonstrable in the figures published. Total deposits of over Rs. 206 lakhs constitute the main liability. The cash, bank balances and bullion, mentioned in the balance-sheet, represent a cash ratio of over 28 per cent, in this case well above the general average for India's scheduled banks. It is noteworthy that in the balance-sheet, advances totalling Rs. 96 lakhs exceed investments totalling Rs. 71.19 lakhs; this is as it should be. The classification of advances supports general anticipations. The audited figures show a gross profit of Rs. 8.76 lakhs that is to say more than double the interest paid on deposits. The net profit of Rs. 1,27,336 in spite of an increase in annual expenditure (pointing to a rise of over half a lakh over 1941) redounds to the credit of the management, while it will be agreed that the remarkable increase in deposits put the Nath Bank, Limited ahead of most Bengalee banks. It is obvious that notable results in the field of branch expansion have assisted in the growth of a bank which serves five provinces now. The balance-sheet shows a paid-up capital of Rs. 12.2 lakhs and a reserve of Rs. 1,30,400. Both these totals should show an increase in the next year's and the expansion in profits should be more than proportionate in the case of the Nath Bank as the demand for funds should be better than in the last year. While a sustained increase in deposits will not only correspond to the universal trend, it will provide further evidence as to the sound and progressive management enjoyed by the Bank.

NATIONAL BANK OF INDIA LIMITED.

Owing to war time conditions the issue of the report and of the accounts are again delayed and consequently it was deemed expedient to make a final distribution from the profits by means of a second interim dividend, the rate for the year being 14 percent, the same as on account of 1941. Although the Bank had to make materially increased provision for taxation the net amount of profit carried to the balance-sheet shows but little change from that of the previous year; actually, it is slightly larger. Pension Funds receive an allocation of £60,000 and Contingency Account £50,000 while £60,000 has been placed to premises account.

The totals on each side of the balance-sheet show an increase of £8,800,000 over those of the previous year. On the liabilities side, there is an increase by that amount under the heading of Current, Fixed Deposit and other Accounts. The greater proportion of this increase is in our deposits in India which reflects the flow of money into the hands of the public as a result of war expenditure. On the assets side, cash and money at call show an increase of £6,800,000 while British and Indian Government securities are higher by £2,100,000. Bills of Exchange which include treasury bills, have increased by £3,000,000 the whole of this increase being in treasury bills. Discounts and loans receivable are lower by £2,800,000 a

reduction which has been inevitable under existing conditions. The ratio of the combined items of cash and Government securities to the current accounts, fixed deposits and other accounts is 76 percent.

The net profits, after providing for all bad and doubtful debts amount to £439,159-0-11d and adding £284,253-5-10d brought forward the available total is £723,412-6-9d. An interim dividend at the rate of 14 percent per annum was paid on September 24 1942 absorbing £140,000. A further interim dividend at the same rate was paid on March 31 in place of the final dividend hitherto recommended for approval at the annual meeting. The Directors now propose to add £60,000 to the staff pension funds, to write £60,000 off house property account, and to transfer £50,000 to contingencies account leaving a balance of £273,412-6-9d to be carried forward.

PUNJAB NATIONAL BANK LIMITED.

The Punjab National Bank, Limited has made heady progress in recent years and as one of the "Big Five" of India can be said to have considerably improved its positoin. Deposits are at a new high level at Rs. 15.46 crores. The figure at the end of 1941 was only Rs. 9.80 crores. Eleven new branches have been opened during the half-year ended December, 1942. The Reserve fund has increased from Rs. 14 lakhs to Rs. 20 lakhs. The liquid position of the bank is very sound, the total of investments and cash being Rs. 11.22 crores against the total balance-sheet figure of Rs. 17.53 crores. The aggregate book value of investments was below market price as on December 31, 1942. Investments and cash in 1941 were Rs. 6.21 crores. That considerable difficulty has been felt in regard to advances will be evident from the total of Rs. 4.46 crores for 1942 against Rs. 3.94 crores for 1941. Most of the increase in funds has been reflected in higher investments and cash balances.

The profits have been utilised to strengthen the position of the Bank. The dividend has been maintained at 6 per cent per annum. Out of the total profit of Rs. 10,15,659 the sum of Rs. 8,93,224 has been written off bad debts. The net profit for the latter half of 1942 was Rs. 6,17,891.

UNITED COMMERCIAL BANK LIMITED.

It is remarkable to note that within a few weeks from the commencement of business, it has been possible for the management of the United Commercial Bank, Limited to report a deposit figure of as much as Rs. 2 crores. Needless to say, such a sensational progress has been possible only with the presence of prominent directors on the Board. The Bank has opened its branches in Bombay, Karachi and Delhi. It must be remembered that the deposit of Rs. 2 crores has been secured only from one centre alone, the The earning capacity of the Bank will be considerably increased by the opening up of new branches referred to above. The Bombay branch especially will contribute substantially towards the working capital as several prominent Bombay business interests are represented on the Board. Over Rs. 2 crores of rupee securities are held by the Bank and most of them are in short-dated loans maturing within 10 years. Both Mr. Birla, the Chairman of the Bank, and Mr. B. T. Thakur, the Managing Director, ought to be congratulated on their brilliant achievement.

UNITED INDUSTRIAL BANK LIMITED.

The United Industrial Bank has made good progress in the year ended March, 1943. There has been a further substantial increase in the amount of deposits from Rs. 37.97 lakhs to Rs. 67.78 lakhs. Advances show an increase by about Rs. 5 lakhs to Rs. 29.13 lakhs while cash balances have jumped Rs. 6.95 lakhs to Rs. 25.53 lakhs. As such the net profit for 1942-43 is not very much higher at Rs. 49,507 against Rs. 48,930 for 1941-42. The profits have again been utilised to strengthen the financial position of the Bank and no dividend has been paid.

During the year a branch of the Bank was opened in Dacca and a Pay Office in Mirkadim (Dacca District).

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PESHAWAR CANTONMENT
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QUETTA
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REVIEWS OF BALANCE-SHEETS:

INDIAN INSURANCE COMPANIES

ASIAN ASSURANCE CO. LTD.

(Established—1910)
Head Office: Bombay

The reports and meetings of insurance companies go to show that Indian insurance is finding greater support in the second and third years of war. The companies themselves have a better title to support in that their policy continues to improve. It is certainly typical of junior offices that new business has grown more rapidly than anticipated; but older, stronger companies have made headway. For instance, the Asian Insurance Company of Bombay, after the decisive changes in the Board, has been assisted to a large extent by a combination of favourable circumstances. What these are can be learnt from the report issued in 1943. New business has risen from Rs. 70.29 lakhs in 1941 to Rs. 84 lakhs in 1942. Business in force has risen by Rs. 34 lakhs in the past year. The average value of the policy issued in 1942 has further gone up to Rs. 2,500 Premium income again rose from Rs. 22.54 lakhs to Rs. 23.80 lakhs in 1942. Interest and other receipts showed a growth from Rs. 4.96 lakhs to Rs. 6.32 lakhs. In his comments on the brilliant results secured in 1942 Mr. G. N. Rajpal, the chairman, dwelt with pardonable pride on the further increase in business secured and better alround progress. Even more distinctive is the reduction in expenditure effected under the new regime in spite of increase in business and higher costs. The usual reduction in expense ratio has been secured without any reduction in revenue. Mr. Rajpal expects a further reduction in 1943 as business is known to be improving consistently; and policyholders will have more reason to feel pleased with results summed up judiciously at the annual meeting. The revenue account shows an outgo of Rs. 8.77 lakhs on account of claims in the year. The Life Fund is shown to have gained to the extent of Rs. 14.27 lakhs from the year's surplus of receipts. It stood at Rs. 111.16 lakhs at the end of 1942. The investments are very judiciously made with an eye for safety and better yield. Besides the giltedged the preference and ordinary shares account for about Rs. 26.70 lakhs nearly. The Asian's holding of mortgages is fairly high at Rs. 13.8 lakhs and its policy loans account for Rs. 16.87 lakhs out of the balance sheet total of about Rs. 1.27 crores. The Asian has a paid-up capital of Rs. 5 lakhs and a reserve of Rs. 4.04 lakhs in addition to its special funds. The strong position disclosed in the last balance-sheet warrants the confident note struck by Mr. Rajpal in his review of the company's affairs that the Asian stands very high in the Insurance World and that it will stand second to none in the matter of service, security and other benefits that it can afford to policyholders.

It has commenced Fire and Accident Insurance also.

LIFE ACCOUNT.

	(In thousands of Rs.)		
New Business.	1940.	1941.	1942.
No. of Policies (actual) ..	1,702	1,654	1,750
Premium Income	1,82	2,04	2,36
Total premiums	9,44	10,44	12,06
Life Fund at the beginning of the year ..	93,65	97,33	99,11
Life Fund at the end of the year ..	97,33	1,00,18	1,03,33
Net Increase ..	3,68	2,85	4,22
Claims ..	7,37	8,96	8,20
Expenses ..	2,64	2,87	3,76
Ratio of Expenses to Premium ..	28%	27.3%	31.1%

BALANCE SHEET.

Liabilities.			
Capital ..	1,45	1,45	1,45
Life Assurance Fund ..	97,33	1,00,18	1,03,33
Shareholders' Reserve Fund ..	8,00	8,00	7,50
Claims outstanding ..	1,98	3,42	4,15
Other items ..	30,53	34,10	39,22
Total ..	1,39,29	1,47,15	1,56,23
Assets.			
Giltedged Securities ..	1,03,04	1,03,11	1,07,83
Property ..	11,44	11,70	11,51
Cash ..	1,57	7,99	9,60
Other items ..	23,24	24,35	27,24
Total ..	1,39,29	1,47,15	1,56,23

BOMBAY MUTUAL ASSURANCE SOCIETY

Rao Bahadur U. S. Desai's speech at the Bombay Mutual Assurance Society's meeting on June 26, was devoted to an examination of the progress made in 1942 and the possibilities of the future. The Society's results certainly sustain optimism. The new business secured in 1942 amounted to 8,558 policies assuring in the aggregate Rs. 1.73 crores nearly, and the annual premium thereupon amounted to Rs. 8,99 lakhs nearly. Total business in force amounted at the end of 1942 to Rs. 14.03 crores. The Society's revenue account shows a premium income of Rs. 66.01 lakhs and investment receipts of Rs. 11.77 lakhs. Payments to policyholders and annuitants last year took over Rs. 13.5 lakhs and surrenders accounted for an outgo of Rs. 2.07 lakhs. After providing Rs. 1.24 lakhs for taxation and Rs. 43,233-15-0 for depreciation and meeting all expenses and commissions there is a substantial surplus transferred as usual to the Life Fund which stood at Rs. 295.59 lakhs at the end of 1942 explaining the increase of Rs. 44.32 lakhs in investments during the year. The greater part of the Fund was in stock exchange securities. The stiffening of giltedged by debentures and preferences is no new departure in investment policy. Loans including policy loans, amounted to Rs. 50.16 lakhs out of the total assets of Rs. 3.16 crores. Cash balances and revenue items over all liabilities outside the Life Fund, and the Society's results conform to the expectations raised by the continuance of Rao Bahadur Desai as Chairman. House property in India is shown at cost at Rs. 32,14 lakhs and total investments at market value on December 31, 1942 are put at Rs. 2.96 crores. The Society's favourable experience in regard to claims and expense ratio needs no mention, but the striking increase in investments last year proves that in the second stage of its long career, the Bombay Mutual is setting a remarkable example. Rao Bahadur Desai expressed the member's satisfaction with the year's results and indicated that opportunities for expansion at the usual place are not limited by the war since insurance offers undeniable advantages to the public even when the value of money tends to fluctuate.

EASTERN FEDERAL UNION ASSURANCE CO., LTD.

For 1942 the Eastern Federal Union Assurance is paying a dividend of 4 annas per share free of tax according to the Chairman, Mr. A. R. Siddiqui who described the year's underwriting results and the increase in funds as contradicting his own pessimistic forecast. The increase in capital last year, was independent of the announcement but certainly connected with the increasing influence and business connections of the company. The major feature claiming attention is the increase in the Reserve Funds from Rs. 6.54 lahks to Rs. 10.43 lakhs. Special Reserves also have been raised and except for the setback in the life branch, the company's experience is in accord with the experience of all insurance companies. In the Fire Branch net premiums amounted to Rs. 7.37 lakhs and claims took Rs. 2.22 lakhs. Commissions, etc., took Rs. 3.08 lakhs and the reserve was increased by Rs. 40,000 so that the revenue account shows a reserve of Rs. 3.45 lakhs as against Rs. 2.75 lakhs at the end of 1941. In the accident branch, the years net premiums were slightly lower compared with 1941 at Rs. 1.23 lakhs and claims were considerably lower at Rs. 27,307-10-7. After providing Rs. 20,000 against unexpired risks the account shows a surplus of Rs. 32,369-2-2. The large increase in the marine branch is linked with the higher rates enforced by the war. The year's premium income shows marked improvement at Rs. 8.98 lakhs of which claims absorbed Rs. 2.68 lakhs and expenses took Rs. 1.37 lakhs. The fund has been raised from Rs. 1.89 lakhs to Rs. 4.34 lakhs. In the life branch, new business accounted for the issue of 189 policies assuring Rs. 4.31 lakhs and the total premium income was Rs. 91,964-12-0. The lower expense ratio at 28.92 per cent and the light claim ratio account for the addition of Rs. 64,000 nearly to the life assurance fund in a year. In view of the recovery in 1942 mentioned by the Chairman, the moderate results may be ignored. Large provision for taxation from the sum transferred to Profit and Loss account does not affect the disposable sum which, after meeting the charge for dividend, is higher at Rs. 33,982-1-4. The increase in the funds explains the rise in the company's investments by over Rs. 3.4 lakhs in a year. There is little in the balance-sheet which calls for special notice, but reference may be made to the deposits in two Indian States in addition to the statutory deposits. The funds are supported by an Investment Reserve. The outstanding claims and other liabilities are covered by cash balances exceeding Rs. 20.15 lakhs. Investment in ordinary shares are unusually moderate and no mortgages figure among the assets. Investments

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AGENCIES THROUGHOUT INDIA

outside the giltedged market are in the correct proportions and E. F. U. policy was again illuminated by the Chairman's speech at the 11th annual meeting when his observations on the burden of taxation were directed as much to Government as to the shareholders.

HINDUSTHAN CO-OPERATIVE INSURANCE SOCIETY LTD.

The Hindusthan Co-operative Insurance Society Limited entered its 38th year with the satisfaction of having written more new business in 1942 than in 1941. The full report and accounts indicate the strong position retained after the loss of overseas connections. New business resulted in the issue of 13,649 new policies, assuring a total of Rs. 288.0 lakhs. The net annual premium income on the new business comes to Rs. 13.08 lakhs. Total business in force exceeds 1 lakh of policies and the total value is Rs. 19.37 crores nearly. Premium revenue for the year amounted to Rs. 93.2 lakhs and the interest receipts amounted to Rs. 16.2 lakhs. Total payments in respect of claims amounted to Rs. 26.97 lakhs and surrenders took Rs. 4.55 lakhs. Commissions and expenses took Rs. 23 lakhs nearly and after providing for tax, depreciation and writing down of investments, the revenue surplus is added to the Life Fund. The addition of Rs. 51 lakhs to the fund raising it at the end of the year to Rs. 472.89 lakhs makes 1942 memorable, particularly, after the valuation carried out and the declaration of bonuses. The Directors draw attention to the fact that the expense ratio in 1942 was 26.47 per cent in spite of the recovery noted under new business. The net income from the fund has been shown in the revenue account as Rs. 15.54 lakhs and profit on sale of properties Rs. 65,224 is added hereto. The Life Fund is the principal liability of the Society in the balance-sheet. The Society held over Rs. 1.9 crores in giltedged securities apart from the statutory deposits. Policy loans account for Rs. 52.87 lakhs and mortgages for Rs. 41.87 lakhs. As in the past, lands and houses form a considerable portion of the assets. The total is Rs. 55.39 lakhs and Rs. 65.72 lakhs respectively. Stock exchange investments including debentures remain small as compared with revenue items like premiums due. The cash balances totalling Rs. 25.3 lakhs call for general attention in view of the proportion of fully liquid assets (which are meant to cover outstanding claims, expenses, etc.), in this case. The Society's position as the second most important life office in India today is illustrated by the revenue and balance-sheet figures cited from the 1942 report. The major change in the balance-sheet is the higher proportion of giltedged to other assets in line with legislative requirements. The Society retains the Contingency and Investment Reserves. The changes in the familiar features furnished a favourable background for the observation of Kumar K. C. Mullick at the annual meeting on June 7. He referred to the diversification of investments and its effect on the average yield over a peroid. He remarked like all Chairmen on the poor yield on new investments. Compensation, of course, is available through the appreciation in the value of land. The new Alipore property has been undeveloped (if greater part has been requisitioned) it is likely to improve in value and the Head Office building is benig completed because it has been also requisitioned. The 1941 valuation showed a surplus of Rs. 37,87,788 for the period of 4 2/3 years. The valuation basis was strengthened by reducing the rate of interest by ¼ per cent and providing for all contingencies. A bonus of 1 per cent was declared after the valuation. Mr. Mullick announced to the meeting that Mr. N. R. Sarker's resignation from the Executive Council has been followed by his resumption of office as President.

HERCULES INSURANCE CO., LTD.

The Hercules Insurance Co. Ltd. made further good progress in 1942. The total premium income for the year was Rs. 8,52,952 as compared with Rs. 6,94,157 in 1941, an increase of Rs. 1,58,795. After making provision for all known claims outstanding departmental transfers aggregated Rs. 1,45,234, the highest recorded. The General Reserve received the substantial contribution of Rs. 1 lac from the Profit & Loss A/c and now stands at Rs. 5,20,000. Turning to the Balance Sheet the assets as at 31-12-42 stand at Rs. 34,91,852. The Company's investments remain unaltered in character; its holding in Govt. Securities and cash is on the increase and the Balance Sheet reveals the very satisfactory state of the Company's finances.

	1940	1941	1942
Premium ..	3.15	3,53	3,98
Claims ..	1,10	91	1,26
Expenses ..	1,62	1,64	1,75
Reserves ..	1,67	1,84	2,04
Ratio of Claims to Premiums ..	34.8%	30.%	31.5%
Ratio of Expenses to Premiums ..	51.4%	46.2%	43.8%
Ratio of Reserves to Premiums ..	53%	52.1%	51.2%



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SATARA

Accident Account.			
Premium ..	91	98	97
Claims ..	37	30	52
Expenses ..	20	39	38
Reserves ..	56	59	59
Ratio of Claims to Premiums ..	40.5%	30.1%	33.2%
Ratio of Expenses to Premiums ..	41.3%	40%	38.8%
Ratio of Reserves to Premiums ..	61.5%	60.2%	60.8%
Marine Account.			
Premium ..	1,70	2.43	3.57
Claims ..	52	1.01	1,52
Expenses ..	50	62	76
Ratio of Claims to Premiums ..	30.5%	41.4%	45.5%
Ratio of Expenses to Premiums ..	29.4%	25.7%	21.2%
Ratio of Reserves to Premiums ..	63.5%	74.8%	72.8%
Balance Sheet.			
Liabilities—			
Capital ..	900	3,00	9,90
Reserve ..	3,45	4,20	5,20
Fire Fund ..	1.67	1,84	2,04
Accident Fund ..	56	59	59
Marine Fund ..	1,08	1,82	2,60
Other items ..	6,68	10,08	15,49
Total ..	21,44	27.53	34,92
Assets—			
Giltedge Securities	10.29	14.40	15,57
Debentures and Preference Shares ..	4,43	5,51	5,43
Equity Shares ..	3,80	2,93	2,38
Other items ..	1,43	1,26	2,63
Cash ..	1,49	2,43	8,41
Total ..	21,44	27,53	34,92

JUPITER GENERAL INSURANCE COMPANY LTD.

Since the annual meeting at which the new Chairman of the Jupiter General Insurance Company reviewed the year's results took place, many will turn with interest to the report and accounts available. The increase in life business corresponds with expectations. The value of 1,429 policies issued in 1942 comes to Rs. 86.95 lakhs nearly. The life revenue account shows that the fund has received in addition of over Rs. 4 lakhs, because claims, expenses, etc., were below the premium income of Rs. 8.95 lakhs and interest receipts of Rs. 1.04 lakhs. The Life Fund has been raised to Rs. 28.49 lakhs. The life branch in spite of the further increase in business is overshadowed by the Fire and Marine business of the Company. Like other Indian companies, the Jupiter reports an increase in premiums as compared with 1941. Marine premiums totalling Rs. 7.72 lakhs were more than the claims for Rs. 1.7 lakhs and the expenses amounting to Rs. 1.41 lakhs. The Marine Fund at Rs. 9.57 lakhs is equal to 137.57 per cent of the year's premiums. Fire premium in 1942 totalled Rs. 15.05 lakhs. After meeting losses (Rs. 4.69 lakhs) expenses, taxes, etc., equal to 44.3 per cent of premiums, the Fire Branch allows a transfer of Rs. 2.36 lakhs to profit and loss account. The fund is maintained at Rs. 9.3 lakhs. The receipts in the accident branch went down but the fund for expired risks is maintained at Rs. 1.2 lakhs and Rs. 47,956-11-1, is transferred to profit and loss account.

The shareholders get a dividend of 12 annas plus a bonus of 2 annas per share on the ordinary shares while the preference shareholders get 6½ per cent tax-free. The increase in life business merits more attention than usual as Jupiter relies largely on its Chief Agencies. The increase in 1942 appears gratifying and policyholders should do well to note that the company's holding of industrial and other shares is important as raising the poor yield on giltedged securities totalling Rs. 12½ lakhs held by the Life branch. Since interest in the subsdiary has been lquidated, it may well be claimed that Jupiter's investments are exceptional, and the present proportion of debentures and preference shares to Government securities is not too small. The company's overseas connections and local influence has been more manifest in 1942 than in previous years, and the rate of progress is satisfactory in the life and marine branches. The paid-up capital of Rs. 23,74,800 supplements the Reserves and Funds of the company. In the balance-sheet published today, the feature is not the large cash balances but the distribution between approved securities and other investments. The results evoked satisfaction and Mr. D. M. Khatau's continuance as a Director must be mentioned here. The Jupiter's progress in the last three years has been greater than in its earlier years and the marks of validity are those which were described at the meeting in Bombay last week.

NORWICH UNION LIFE ASSURANCE SOCIETY

The Norwich Union Life Assurance Society's excellent results need not be des-



Head Office :- ILACO HOUSE, KARACHI

LEADING AGAIN

Facts from the Fifty-first Annual Report of the Company as on 31st December, 1942

New Business

New Business completed in 1942 ... Rs. 49,07,625
New Business completed in 1941 ... Rs. 37,10,375

Total Assets

Total Assets as on 31-12-1942 ... Rs. 1,56,22,763
Total Assets as on 31-12-1941 ... Rs. 1,47,15,884
Business in force as on 31-12-1942 ... Rs. 3,15,57,323
Yet it Speaks only of Quality Business :—
Lapse Ratio in 1942 ... ... 2·8%
Lapse Ratio in 1941 ... ... 5·1%

Bonus

As a result the following rates of Bonus were declared at the latest Valuation of the Company, as on 31st December, 1941 :—
Whole Life ... Rs. 20/-{
Endowment Rs. 16/-{ Per 1,000 per year
Interim Bonus at Full Rates. Also Bonus on Paid-Up Policies—a privilege which no other Company in India allows.

It will always PAY YOU to BUY or SELL an I-L A-CO. Policy.

INDIAN LIFE ASSURANCE CO., LTD.

ESTABLISHED — 1892

Branches and Agencies all over India

Insurance is a Means to Financial Security

THE JUPITER GENERAL INSURANCE COMPANY, LIMITED

(INCORPORATED IN INDIA)

TRANSACTS

LIFE, FIRE, MARINE, ACCIDENT AND OTHER PROGRESSIVE TYPES OF INSURANCE BUSINESS

Authorised Capital	-	Rs. 2,00,00,000
Issued & Subscribed Capital	- -	„ 1,50,00,000
Paid up Capital	-	„ 23,74,800
Total Assets Exceed	-	„ 1,07,50,000
Total Life Assurance Fund Exceeds	-	„ 28,49,000

The above figures speak convincingly about the Popularity and confidence of the Public enjoyed by the Company.

Head Office : FORT, BOMBAY

Calcutta Branch : 15, CLIVE STREET

HERCULES

INSURANCE CO., LTD.

(INCORPORATED IN INDIA)

Head Office

16, HARE STREET, CALCUTTA

BRANCHES

BOMBAY .·. MADRAS

Directors :

Sir Badridas Goenka, Kt., C.I.E. (Chairman)
G. Euthymopulo, Esq. (Deputy Chairman)
N. A. Grant, Esq.
Mr. G. B. Gourlay
Rai Bahadur Moongtu Lall Tapuriah.
P. G. Valieri, Esq.

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FIRE

MARINE - ACCIDENT - MOTOR

ASIAN

records further Excellent Progress

1941		1942	
New Paid for Business Rs.	70,29,535	New Paid for Business Rs.	84,17,000
Life Funds - - „	96,89,554	Life Funds - - „	1,11,16,000
Business in Force - „	4,46,15,000	Business in Force - „	4,80,00.000
Expense Ratio - „	25·42%	Expense Ratio - „	23·94%

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LIFE - FIRE - MOTOR

and all Miscellaneous Insurances transacted

THE ASIAN ASSURANCE CO., LTD.

Asian Building - - BALLARD ESTATE - - BOMBAY

Branches and Agencies throughout India, Ceylon and East Africa.

cribed in detail. Indian insurance companies will rightly find in Mr. Ernest Hicks' speech many points to claim their attention. £7.4 million in business and £1¾ million in new investment in British Government securities are telling figures. The provision of £250,000 through savings bond schemes, is a part of the Society's war effort indicated also in the President's statement that the society's investment in four years in British Government securities totalled £6.4 million and the investments in Dominion and Indian securities totalled £2.5 millions. The results described were secured in spite of branches being closed and the staff being reduced. Progress is maintained without a large field force. The Society's reputation and the recommendation of policyholders are adequate substitutes. In India and the Dominions, the Society enjoys a strong position and policyholders may derive further encouragement from the fall in the expense ratio to 13.6 per cent in 1942 as compared with the higher prewar percentage. The Society paid out £3.35 million on claims through death and maturity last year. The war deaths at home and abroad were treated like other claims and Mr. Hicks justly described the payment as a further direct contribution to the Nation's needs. The net yield on the funds was over 3 2/5 per cent showing a small rise on 1941. The addition to the funds last year as £1.67 millions to raise the total to £55 million, a figure well below the market value of securities held. With a total income of over £6.38 million and disbursement of £4.7 million in 1942, the Society reported a fair increase in the funds. Mr. Hick's retirement should make no difference as he has expressed willingness to serve on the Board. The speech indicate that in the fourth year of war Norwich Union's business and revenue have improved while the entire increase in the funds has gone into War Loans. The fall in surrenders last year shows an absolute revival of confidence in life assurance that makes for further progress.

NATIONAL INDIAN LIFE INSURANCE COMPANY LTD.

The National Indian Life Insurance Company had a new Chairman last year, but there were no great changes as in 1941. The balance-sheet published today, hardly stands in need of formal comment, but extended reference to the report for 1942 is necessary. There was an increase in new business since 3,037 policies assuring Rs. 60.8 lakhs were issued last year as against Rs. 60,8 lakhs in 1941. The further progress made in regard to business explains the rise in income. Premium rvenue showed an improvement at Rs. 15,12 lakhs and the fall in investment income is the only direct result of the war though the Directors speak of an eventful year in which internal troubles and enemy air raids had affected new business. The year's revenue account shows that claims took Rs. 6,65 lakhs and surrenders accounted for Rs. 1,12 lakhs. The changes in the value of investments explains the provision of Rs. 39,566-9-9 against depreciation. offsetting which is the margin of Rs. 3.84 lakhs between book value and market value which remains, of course, an internal reserve. The change that interests policyholders most is the annual addition to the fund which has been raised from Rs. 77,85 lakhs to Rs. 82,47 lakhs. But for the special provision referred to, the increase would have exceeded Rs. 5¼ lakhs added in 1941 to the fund. The maintenance of the dividend at 8 per cent tax-free is in accordance with expectations and the company's paid-up capital of Rs. 1 lakh today requires only a small sum as dividend. In the balance-sheet stock exchange investments predominate, and the problem of yield is solved by the retention of debentures and preference shares (Rs. 4.1 lakhs and Rs. 13,9 lakhs). Policy loans are a little higher than before, but mortgages, house property, etc., are inconspicuous items as compared with giltedged and approved securities totalling over Rs. 35 lakhs. As usual, cash balances at year-end exceed claims due and other liabilities; and in the summary of assets, too, the revenue items appear as moderate as ever. What has been said about previous reports certainly applies to the 1942 report since the familiar features of sound finance remain inseparable from the balance-sheet made available recently.

ORIENTAL GOVERNMENT SECURITY LIFE ASSURANCE CO., LTD.

(Established—1874).

(*Head Office*—Bombay).

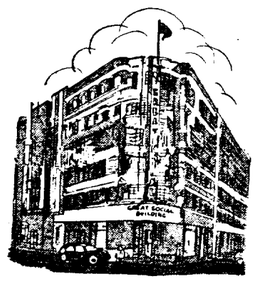
The amount of New Business completed in the year 1942 by this Premier Life Assurance Company of India was 36,713 Policies assuring just over Rs. 95¼ lakhs showing an increase in the aggregate Sums Assured of just over Rs.135 Lakhs as compared with the results of 1941.

The total number of Policies in force as at 31stDecember, 1942 was 4.39.940 assuring with Bonus aditions and increases under Triple

THE GREAT SOCIAL LIFE AND GENERAL ASSURANCE LTD.

Head Office : BOMBAY

BOARD OF DIRECTORS



COMPANY'S BUILDING AT SIR PHEEROZE SHAH MEHTA ROAD

Mr. Amritlal Ojha, *Chairman*
Rao Saheb P. I. Patil.
Mr. Mavji Govindji Sheth.
Mr. Kanakmal Hazarimal Chaudhari.
Mr. Shaligram R. Bhartiya.
Mr. Vasantray Ojha.
Mr. Bhupatrai Ojha, (*Managing Director*).
Mr. Vishnu Hari Patil, Landlord and Hon. Magistrate, Savada, E. K.
Sir A. H. Guznavi, Kt., M.L.A. (Cantul)

General Manager : Mr. B. K. VAIDYA, B. Com. :: *Life Manager :* Mr. G. L. DESAI, B. A.

LIFE AND GENERAL ASSURANCE

Business Transacted on Liberal Terms

Branches and Agencies all over India.

The INDIAN GLOBE INSURANCE COMPANY LIMITED

Head Office:

Prospect Chambers, 315-321, HORNBY ROAD, FORT, BOMBAY

Managing Director :—VIJAYSINGH GOVINDJI

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Company Transacts the Following Classes of Business

FIRE, MARINE, LIFE, ACCIDENT and Miscellaneous, Loss of Profits by fire, Earthquake, Workmen's Compensation, Passenger's Baggage, Fidelity Guarantee, Third Party Risk, Motor Vehicle, Burglary all Risks, Motor Cycle, Material Damage and Loss of Profits Arising from Riot and Civil Commotion, Personal Accident and Sickness, Motor Buses, Passengers Legal Liabilities, etc. etc.

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Branch Offices :

CALCUTTA	135, Canning Street	NAGPUR	Sita Bardi
LAHORE	The Mall	POONA	Laxmi Road
AHMEDABAD	Haveli Building, Eatesa's Street	BARODA	Hira Nivas, Palace Road
SHOLAPUR	Fulan Gally, Mangalwar Peth	PORBUNDER	Sagar Building
VERAVAL	Commercial Building	CUTCH MANDVI	Opp. G. T. High School
MADRAS	310/311, Linghi Chetty Street	BHAVNAGAR	Khar Gate
KAMPALA, UGANDA	Bombo Road		

Imports of Foreign Merchandise for 1940-43

	Twelve Months, 1st April to 31st March		
	1940-41	1941-42	1942-43
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco			
A. Fish (*excluding* canned fish)	6,61,030	6,24,242	4,88,262
B. Fruits and Vegetables	1,02,15,888	1,12,10,973	1,11,61,179
C. Grain, Pulse and Flour	14,31,15,286	15,02,02,992	30,85,190
D. Liquors ..	1,59,59,106	2,13,51,315	1,18,97,076
E. Provisions and Oilman's stores ..	2,26,01,344	2,55,71,101	70,44,069
F. Spices ..	2,19,79,883	2,21,86,828	1,51,38,720
G. Sugar ..	36,10,089	4,07,54,498	1,87,314
H. Tea ..	12,59,316	11,98,434	51,74,354
I. Other Food and Drink	50,20,663	1,01,45,009	89,72,696
J. Tobacco	1,33,95,193	2,51,64,267	1,33,18,699
Total Class I	23,81,37,802	27,84,09,689	7,61,90,859
II—Raw Materials and Produce and articles mainly unmanufactured			
A. Coal ..	1,11,253	2,66,054	1,67,589
B. Other non-metallic mining and quarry products and the like ..	1,13,29,117	1,12,09,567	1,89,35,246
C. Fodder, Bran and Pollards	1,14,430	58,379	329
D. Gums, Resins and Lac ..	37,66,94	51,12,324	27,48,046
E. Hides and Skins raw or undressed	16,77,695	31,64,254	12,11,560
F. Metallic ores and scrap iron or steel for re-manufacture	6,80,247	13,62,171	2,02,675
G. Oils-Vegetable Mineral and Animal ..	21,03,33,104	21,84,98,720	27,78,11,804
H. Oilcakes of all kinds	22,252	20,442	1,618
I. Paper-making materials	12,69,227	11,23,677	2,75,406
J. Rubber, raw or crude ..	31,88,942	80,13,9 0	7,70,838
K. Seeds, *including* nuts for oils	1,53,73,824	1,98,47,573	2,27,07,163
L. Tallow, Stearne and Wax	30,69,345	58,01,071	36,57,224
M. Cotton, raw and waste..	9,43,33,314	15,34,42,565	15,42,47,727
N. Jute, raw..	2,28,324	45,295	13,421
O. Silk, raw and cocoons ..	75,76,436	80,87,485	1,73,599
P. Wool, raw	2,78,84,047	2,77,18,194	2,95,50,191
Q. Other textile materials	29,81,095	32,34,699	23,04,162
R. Wood and Timber ..	2,60,67,475	2,74,50,079	16,24,201
x. Miscellaneous	1,09,75,887	60,48,103	31,05,634
Total Class II	42,09,79,708	50,05,04,561	51,94,84,433
III—Articles wholly or mainly manufactured			
A. Apparel	37,40,877	32,23,319	12,01,323
B. Arms, Ammunition and Military Stores ..	48,41,058	48,60,111	37,59,918
C. Chemicals, Drugs and Medicines	8,06,69,981	8,75,61,077	6,39,08,995
D. Cutlery, hardware, Implements and instruments (*excluding* Electric instruments and Apparatus)	5,05,24,869	5,43,85,187	3,25,32,346
E. Dyes and Colours ..	6,37,55,398	6,96,22,295	5,42,45,454
F. Electrical Goods and Apparatus (*other than* Machinery)	2,48,95,443	2,40,08,924	1,63,20,311
G. Furniture, Cabinetware and Manufactures of wood and Timber	41,34,348	17,86,625	6,59,741
H. Glassware and Earthen ware ..	1,16,83,766	1,00,91,461	36,37,319
I. Hides and Skins, tanned or dressed, and Leather	47,65,027	62,90,497	41,76,835
J. Machinery of all kinds *including* belting for Machinery	11,82,50,624	13,72,91,863	10,52,60,161
K. Metals—Iron and Steel and manufactures thereof ..	6,81,10,500	6,29,53,421	2,77,15,460
L. Metals *other than* Iron and Steel and manufactures thereof ..	5,00,80,446	6,33,91,594	3,29,15,452
M. Paper, Paste board and Stationery	4,51,34,088	4,06,64,757	2,15,67,024
N. Rubber manufactures	1,56,00,480	1,55,35,324	18,52,145
O. Vehicle (*excluding* Locomotives, etc., for Railways)	6,81,60,957	13,03,56,343	5,71,83,021
P. Cotton yarns and manufactures	11,35,33,803	6,79,11,384	1,36,70,618
Q. Jute ..	7,64,573	6,10,445	3,35,583
R. Silk ..	95,98,710	68,20,706	1,24,878
S. Woollen ..	1,49,53,174	1,92,79,592	82,67,764
T. Other yarns and textile fabrics ..	7,31,64,235	4,96,83,820	55,47,722
U. Miscellaneous	6,86,70,081	8,01,65,717	3,99,35,466
Total Class III	89,50,65,438	93,64,90,462	49,48,20,536
IV—Living Animals—			
A. Horse ..	5,34,937	2,25,426	3,54,479
B. Other living animals	34,321	16,387	5,396
Total ClassIV	5,69,258	2,41,813	3,59,875
V—Postal Articles and baggoge not specified—			
A. Postal Articles	1,35,31,575	1,60,76,109	1,32,81,063
B. Articles imported as baggage	14,04,454	9,78,705	3,65,852
Total Class V	1,49,36,029	1,70,54,874	1,36,46,915
GRAND TOTAL	156,96,88,235	173,72,01,339	110,44,82,618

Exports of Foreign Merchandise

	Twelve Months, 1st April to 31st March		
	1940-41	1941-42	1942-43
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco—			
A. Fish (*excluding* canned fish)	5,161	3,959	16,658
B. Fruits and Vegetables	9,42,807	23,73,676	10,09,796
C. Grain, Pulse and Flour	11,32,114	26,92,734	16,32,435
D. Liquors	2,47,341	3,64,521	2,68,388
E. Provisions and Oilmans' stores	5,33,129	7,55,925	4,39,479
F. Spices ..	7,41,993	10,68,190	8,58,072
G. Sugar ..	16,19,520	70,93,629	10,06,65,583
H. Tea ..	4,739	2,45,317	7,17,975
I. Other Food and Drink ..	39,934	50,300	..
J Tobacco ..	2,81,627	37,15,259	7,13,190
Total Class I	55,48,665	1,83,53,510	1,63,17,556
II—Raw materials and produce and articles mainly unmanufactured—			
A Coal and Coke	765	225	..
B Other non-metallic mining and quarry products and the like ..	60,597	44,049	1,43,584
C Fodder, Bran and Pollards	...	...	..
D Gums, Resins and Lac ..	4,08,415	9,68,978	5,25,771
E. Hides and Skins, raw or undressed	5,16,84,309	6,19,10,378	1,10,73,288
F. Metallic ores and scrap iron or steel for re-manufactures	13,01,132	10,599	30,53,867
G. Oils—Vegetable, Mineral and Animal	6,28,948	4,17,425	6,86,803
H. Oilcakes of all kinds ..	..	..	..
I. Paper-making materials	..	..	..
J. Rubber, raw or crude ..	..	35,396	...
K. Seeds (*including* nuts for oils) ..	1,18,898	6,29,224	39,275
L. Tallow, Stearine and Wax ..	2,149	1,00,045	12,808
M. Cotton, raw and waste ..	14,53,087	36,31,675	27,90,646
N Jute ..	..	..	..
O Silk, ..	2,04,364	1,00,997	36,51,106
P Wood ..	79,00,498	87,42,814	10,84,122
Q Other textile materials ..	..	4,30,131	34,704
R. Wood and Timber	83,045	1,05,623	61,380
S. Miscellaneous ..	5,25,411	6,28,770	4,45,734
Total Class II ..	6,46,74,618	7,77,56,329	2,36,03,148

	Twelve Months, 1st April to 31st March		
	1940-41	1941-42	1942-43
	Rs.	Rs.	Rs.
III—Articles wholly or mainly manufactured—			
A. Apparel	2,82,326	6,55,982	4,03,713
B. Arms, Ammunition and Military stores	5,48,708	72,141	9,13,310
C. Chemicals, Drugs and Medicines	13,50,493	14,61,012	9,63,784
D. Cutlery, Hardware, Implements, and instruments (*excluding* Electrical Instruments and Apparatus)	54,76,748	46,43,003	26,44,864
E. Dyes and Colours	10,80,236	12,39,529	6,13,700
F. Electrical Goods and Apparatus (*other than*) Machinery	13,19,939	8,78,528	3,44,629
G. Furniture, Cabinetware and Manufactures of Wood and Timber	2,87,138	1,83,912	54,887
H. Glassware and Earthenware	2,54,570	4,29,712	1,84,674
I. Hides and skins tanned or dressed and Leather..	48,527	54.745	44,920
J. Machinery of all kinds *including* belting for Machinery) ..	31,19,527	16,85,612	8,51,619
K. Metals—Iron and Steel and manufactures thereof ..	21,87,532	8,18,704	6,09,569
L. Metals *other than* Iron and steel and manufacture thereof ..	8,46,325	5,37,666	23,91,098
M. Paper, Paste board and Stationery	7,03,932	4,14,932	1,94,698
N. Rubber manufactures	1,17,795	4,67,142	87,187
O. Vehicles(*excluding* Locomotives, etc, for Railways	3,82,770	57,16,470	14,56,450
P. Cotton yarns and manufactures ..	1,03,48,981	1,92,14,663	76,08,926
Q. Jute ..	..	..	..
R. Silk ..	9,93,442	9,21,099	11.56,046
S. Woollen	11,56,816	22,08,507	33,37,482
T. Other yarns and textiles fabrics ..	86,19,279	1,35,56,959	36,69,561
U. Miscellaneous articles ..	11,63,709	18,43,083	20,30,620
Total Class III	4,76,71,788	5,70,03,401	2,95,61,442
IV—Living animals—			
A. Horses ..	1,16,600	11,400	..
B. Cattle ..	..	...	..
C. Sheep and Goats	..	..	..
D. Other living animals	1,668	450	..
Total Class IV	1,18,268	11,850	..
V—Postal Articles	1,50,031	1,69,061	40,097
Grand Total	11,81,63,370	15,32,94,151	6,95,22,253

Exports of Indian Merchandise

	Twelve Months, 1st April to 31st March		
	1910-11	1911-12	1912-13
	Rs.	Rs.	Rs.
I—Food, Drink and Tobacco—			
A. Fish (*excluding* canned fish)	6 ,11,852	60,20,165	78,28,691
B. Fruits and Vegetables ..	2,11,02,665	3,09,13,852	1,97,03,505
C. Grain, Pulse and Flour ..	5,91,47,381	10,42,61,211	6,95,19,011
D. Liquors ..	1,21,187	2,29,502	16,375
E. Provisions and Oilman's stores	73,09,030	79,15,811	59,85,690
F. Spices ..	88,53,090	1,13,05,117	1,93,81,916
G. Sugar	27,19,964	31,78,118	1,07,96,650
H. Tea ..	27,78,61,225	39,57,22,693	31,60,61,133
I. Other Food and Drink ..	28,61,871	43,80,333	52,58,770
J. Tobacco ..	2,87,61,561	2,20,00,971	1,19, 9,853
Total, Class I	41,83,63,826	58,60,00,406	46,95,27,600
II.—Raw Materials and Produce and articles mainly unmanufactured—			
A. Coal ..	1,82,63,548	1,45,73,658	85,53,791
B. Other non-metallic mining and quarry products and the like ..	1,60,87,133	2,95,06,070	2,80,31,776
C. Fodder, Bran and Pollards	5,52,523	6,43,222	7,20,868
D. Gums, Resins and Lac ..	2,5 ,61,591	5,44,01,195	3,23,51,218
E. Hides and skins raw or undressed	3,13,65,204	4,77,15,331	3,32,12,491
F. Metallic ores and scrap iron or steel for remanufactures ..	1,83,21,826	2,91,18,779	2,32,19,978
G. Oils—Vegetables, Mineral and Animal ..	2,10,11,595	2,63,71,830	1,36,12,867
H. Oilcakes of all kinds ..	84,15,772	37,14,398	61,19,012
I. Paper-making materials ..	7,00,749	7,85,533	4,69,091
J. Rubber, raw or crude ..	91,99,408	72,77,382	6,28,754
K. Seeds (*including* nuts for oils)	1 ,49,91,594	10,50,2 ,394	10,56,49,122
L. Tallow Stearine and wax ..	4,91,571	7,16,291	7,61,490
M. Cotton, raw and waste ..	24,45,56,249	17,54,09,613	5,29,9 ,365
N. Jute ..	7,84,59,918	10,41,72,886	9,01,32,556
O. Silk ..	2,65,091	9,44,735	23,52,771
P. Wool ..	1,64,18,626	2,60,33,554	1,20,12,913
Q. Other textile materials ..	76,28,742	96,66,532	52,27,356
R. Wood and Timber	23,86,113	19,97,571	13,80,794
S. Miscellaneous	1,57,78,510	1,45,50,995	1,56,91,577
Total Class II	61,86,45,673	65,26,17,969	42,82,57,856
III Articles wholly or mainly manufactured			
A. Apparel ..	68,09,301	71,51,883	54,98,519
B. Arms, Ammunition and Military Stores ..	113	11,001	1,200
C. Chemicals, Drugs and Medicines	65,16,301	95,12,828	68, 7,057
D. Cutlery, Hardware Implements, and Instruments (*excluding* Electrical Instruments and Apparatus)	64,02,965	72,79,506	26,73,012
E. Dyes and Colours	62,57,157	59,18,985	36,01,663
F. Electrical Goods and Apparatus *other than* Machinery ..	..	..	..
G. Furniture, Cabinet ware and manufactures of Wood and Timber	2,60,732	2,87,574	1,70,080
H. Glassware and Earthenware	7,28,636	12,84,693	7,33,227
I. Hides and skins tanned or dressed and Leather	5,98,53,872	6,02,49,911	4,81,52,893
J. Machinery of all kinds (*including* belting for Machinery) ..	5,95,116	6,15,772	5,90,087
K. Metals—iron and Steel and manufactures thereof	5,04,98,115	3,75,12,959	1,14,78,794
L. Metals, *other than* Iron and Steel and manufactures thereof ..	21,98,569	34,67,547	15,37,672
M. Paper, Pasteboard and Stationery	11,10,112	39,89,192	5,17,386
N. Rubber manufactures ..	11,13,535	47,25,762	30,08,707
O. Vehicles (*excluding* Locomotives, etc. for Railways)	1,61,713	1,43,512	98,487
P. Cotton yarns and manufactures	16,49,31,137	36,07,83,184	46,10,15,590
Q. Jute ..	45,38,45,807	53,89,53,850	36,38,06,701
R. Silk ..	2,47,761	2,66,111	10,01,359
S. Woollen ..	73,23,961	78,83,285	40,18,851
T. Other yarns and textile fabrics	67,12,274	1,37,91,345	1,10,39,082
U. Miscellaneous articles ..	2,88,91,924	2,96,23,327	2,20,31,610
Total class III	81,06,99,434	109,38,19,163	95,28,74,927
IV—Living Animals—			
A. Horses ..	41,700	1,95,700	300
B. Cattle ..	1,01,226	1,42,775	2,81,820
C. Sheep and goats	5,09,868	4,35,547	12,31,990
D. Other living Animals ..	65,163	44,085	34,837
Total Class IV	7,17,957	8,18,107	15,48,947
V—Postal Articles	205,69,530	2,25,13,027	2,38,01,568
Grand Total	186,89,94,420	237,57,68,672	187,60,10,948

FINANCE AND CURRENCY

Balance of Trade in India from 1933-34

(In Lakhs of Rupees)

	1933-34	1934-35	1935-36	1936-37	1937-38*	1938-39*	1939-40*	1940-41*	1941-42*	1942-43*
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Exports of Indian Merchandise (private)	1,17,25	1,51,67	1,60,52	1,96,12	1,80,92	1,62,79	205,92	186,91	2,37,58	1,87,60
Re-exports of foreign	3,12	3,55	3,77	6,24	8,28	6,42	9,65	11,81	15,33	6,95
Imports of foreign	—1,15,00	—1,31,80	—1,33,69	—1,24,60	—1,73,32	—152,37	—1,6 ,28	—1,56,79	1,73,01	1,10,34
Balance of trade in Merchandise ..	35,67	23,12	30,60	77,76	15,88	16,81	18,37	41,93	79,90	81,21
Gold (private)	57,05	52,53	37 35	27,85	16,34	13,05	..	..	..	..
Silver („)	—1	—37	—1,27	—13,59	—2,26	—1,75	..	..	..	..
Currency Notes (private) ..	19	27	29	24	28	58	..	..	..	..
Balance of transaction in Treasure (private)	57,23	52,53	36,37	11,50	11,36	11,88	..	..	..	..
Total Visible Balance of Trade ..	92,90	75,95	66,97	92,26	30,24	28,72	..	..	..	..
Gold earmarked on account of Purchasers abroad	..	..	..	..	..	10,19	..	..	..	..
Council Bills, purchases of Sterling andth other Government remittance to the United Kingdom. ..	—59,97	—49,82	—45,58	—70,87	—29,51	—32,64	..	..	..	..
Sterling transfers on London sold in India;	..	..	..	..	..	..	..	..	..	..
Transfers of Government Securities	—11	—32	—56	—18	—11	8	..	..	..	..
Interest drafts on India in respect of Government of India securities	—36	—28	—31	—29	—28	—28	..	..	..	..
Balance of remittance of funds ..	—60,44	—19,78	—46,45	—71,34	—29,90	—33,60	..	..	..	..
Total Visible Balance of Accounts	+31,50	+26,17	+20,12	+20,91	+34	6,16	..	..	..	..

Note.—(1) Imports of merchandise are exclusive of railway materials imported direct by State Railways working under Company management as the charges of these are not paid for in the ordinary way.
(2) In the balance, (—) means net Import.
(3) All transactions which do not enter into the balance of trade are excluded.
*Exclusive of Burma. Figures for treasure 1939-41 are not available.

Monthly Exports from and Imports into India of Gold from 1935-36 to 1940-41

(In Thousands of Rupees)

	1935-36		1936-37		1937-38*		1938-39*		1939-40*		1940-41	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
April	4,18	1,04,28	7,17	2,79,89	21,69	1,83,28	6,49	1,24,04	8,18	1,04,02		
May	17,60	1,94,63	28,92	3,28,07	16,84	1,47,18	16,51	1,10,36	8.55	1,27 24		
June	8,58	1,10,61	9,07	2,79,58	33 69	81 53	7.28	70,16	15,35	73,32		
July	11,17	6,04,26	11,92	1,04 83	11,17	2,40,28	6,80	3,05,05	14,48	3 04,76		
August	5,57	6,76,96	17,26	2,25,74	7,28	1,44,01	6,62	2,01,15	3,79	1,53,82		
September	14,65	3,17,91	6,65	2,21 31	23,76	1,44,82	3,83	30,20	3.86	1,65 17		
October	6,94	3,04,63	9,02	3,19,08	7,17	1,30,47	3,98	2,16	65,46	4,88,76		
November	8,79	3,96,16	7,43	2,58,29	6,87	1,17,53	4,00	68,21	2,57	2,47,57		
December	3,62	2,77,62	8,44	1 55,71	8,21	1 65,73	6,06	38	1,76	6 56,71		
January	5,77	3,71,17	12,37	2,38,62	7,09	1,54,39	2.94	6,55	7,10	8 12,28		
February	3,04	2,63,89	30,21	1,15,10	4 25	1,99,35	4,70	97	(a)	(a)		
March	5,04	2,08,42	12,42	1,19 26	7,57	80 67	5,92	1,50	(a)	(a)	..	..
Total	94,95	38,30,55	160,88	29 51,19	1,55,60	17,89,24	74.54	13,79,52	(a)	(a)	..	..

FIGURES NOT AVAILABLE

Note—Value is at market rate at the time of Import or Export and the metal is of unknown fineness.
* Exclusive of Burma.
† Figures from 1941-42 are not available.

Monthly Exports from and Imports into India of Silver from 1934-35 to 1940-41

(In Thousands of Rupees)

	1934-35		1935-36		1936-37		1937-38*		1938-39*		1939-40*		1940-41†	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.
April	1,6,61	21,00	13,75	33,91	87,68	2,19	17,60	3,90	14,85	8	25,08	..		
May	16,28	35,38	5,94	46,32	200,70	2,06	27,66	12	34,73	..	61,04	..		
June	1,00,20	50,15	20,09	7,17	135,03	2,24	77,48	2,79	16,00	39	44,09	2,00		
July	99	68,85	16,36	6,69	94,83	3,50	45,68	72	11,62	2,77	50,34	73		
August	5,25	1,02,47	6,76	1,02,68	80,85	1,97	38,37	3,59	14,96	3,51	45,96	4,18		
September	8 99	86,14	3,14	9,53	92,29	2,01	51,94	5,21	39,40	12	70,90	2,00		
October	1,42	1,10,02	2,36	11,92	86,79	3,39	2,86	21	33,21	12	..	..		
November	26,39	78,84	8,16	9,81	150,58	2,09	8,68	5,21	8,45	10,99	22,59	1,00		
December	48,31	55,31	6,27	4,62,29	60,97	2,06	9,12	17,62	3,17	9,96	..	..		
January	9,95	89,19	87,27	9,29	1,70,54	2,00	10,82	28,17	6,02	40	55,42	..		
February	2,92	1,52,24	3,76,98	2,04	2,19,29	1,00	1,45	5,35	7,96	..	(a)	(a)		
March	62,80	1,37,16	98,61	1,45	7,90	3,96	8,41	1,59	12,91	8	(a)	(a)		
TOTAL	4,45,11	9,86,75	6,45,69	7,03,10	13,87,64	28,47	3,00,06	74,49	2,03,27	28,31	(a)	(a)	..	..

FIGURES NOT AVAILABLE

NOTE—Value is at the market rate at the time of Export or Import and the metal is of unknown fineness.

* Exclusive of Burma.

† Figures from 1940-41 are not available.

Monthly Sales and Discharges of Treasury Bills, 1938-39 to 1942-43

(In Lakhs of Rs)

Month	1938-39		1939-40		1940-41		1941-42		1942-43	
	Sales	Discharges	Sales	Discharges	Sales	Discharges	Sales	Discharges	Sales	Discharges
April	9,00,00	729.25	6,58.50	7,29.25	4,00.00	8,85.25	660.25	500,00	10,63,75	10,53 50
May	415.25	1128.50	6,71.50	11,28.75	11,62.25	9,81.50	1649,25	1089,75	29,54,25	903 25
June	417 50	2156.50	10,00.00	8,21.25	8,00.00	8,60.00	1341,75	994,50	21,00,00	10,5450
July	664.25	9,00.00	13,08.50	6,78.50	8,00.00	4,00.00	851,25	660,25	39,81.75	10,63 75
August	700.00	4,15.25	10,57.75	6,50.00	7,00.00	11,62.25	500,00	1649,75	24,18,25	29 54.25
September	916.25	3,17.50	11,80.75	10,00 00	7,00.00	8,00.00	800,00	1341,75	23,,13.50	21,00 00
October	950.00	6,64.75	6,91.00	13,08.50	10,00.00	7,06.00	1210,00	851,25	36,,53,25	29 81.75
November	1050.00	7,00.00	9,63.25	10,57.75	15,86.00	7,00.00	1114,50	500,00	37,37,25	24,18 25
December	800 00	9,16.25	6,85.00	10,13 25	4,00.25	13,00.00	824.75	800,00	32,68,75	23,13 50
January	400 00	12,60.30	11,31.25	16,94.00	5,00.00	11,76.25	1050,50	1210		36,53.25
February	400.00	9,33.75	10,46.75	12,43.00	10,89.75	5,09.50	903,25	1114 00	38,00,50	37,,17,25
March	500 00	8,63.00	6,48.75	8,53.75	9,94 50	..	1051,50	824,75	40,11,25	32,68 75

Total Imports and Exports of Silver and Gold for each of the years 1900-01 to 1942-43

(Value in Thousands of Rupees)

	Gold.		Silver	
	Imports	Exports.	Imports	Exports
	Rs,	Rs.	Rs.	Rs,
1900-01	11,89,80	11,05,59	12,67,87	3,17,15
1901-02	8,30,75	6,36,99	12,29,38	5,10,10
1902-03	13,19,24	4,43,78	12,18,65	5,22,98
1903-04	20,14,79	10,21,62	18,37,82	4,82,77
1904-05	21,81,20	12,10,61	17,69,62	4,32,27
1905-06	14,75,90	14,29,10	16,90,20	1,17,90
1906-07	18,53,34	3,67,73	26,04,64	2,04,09
1907-08	20,75 26	3,38,49	21,53,19	2,06,36
1908-09	8,40,42	4,04,88	14,34,00	2,27,15
1909-10	25,03,10	3,35,17	12,49,25	3,04,75
1910-11	27,89,25	3,91,39	11,84,34	3,21,31
1911-12	41 49 36	3,73,38	11,97,72	6,62,01
1912-13	41 29 08	7,28,96	20,54,10	3134 22
1913-14	28,22,64	4,90,26	15,21,32	2,18,03
1914-15	10,70,38	3,05.64	11,10.45	2,23,39
1915-16	5,28,17	5,39,08	6,66,46	1,83.50
1916-17	13,33,79	10,25	25.11,48	6,31.17
1917-18	29,09,49	3,91,63	22,66,94	3,62.76
1918-19	2,27,63	7,84,00	69,08,92	1,17.02
1919-20	48,25,16	12,92,13	29,98,73	75,84
1920-21	23,57,38	21,46,56	11,11,82	4,70,57
1921-22	13,82,04	16,48,49	17,47 86	2,38,24
1922-23	41,32,39	13,31	20,94,33	2,58,86
1923-24	20,35,31	6,68	22,10,27	3,10,17
1924-25	74,28,98	36,32	24,28,07	4,20,67
1925-26	35,22,99	37,54	19,89,70	2,77,29
1926-27	19,50,12	10,07	21,76,34	1,89,54
1927-28	18,13,34	3,44	16,47,37	2,63,69
1928-29	21,21,90	2,03	15,92,18	6,15,11
1929-30	14,23,11	1,03	13,41,91	4,79,79
1930-31	13,24,60	49,34	13,46,63	3,38,70
1931-32	2,79 95	60,77,23	4,42,64	4,84 81
1932-33	1,31,81	66,84,09	1,62,95	3,61,26
1933-34	1,09,94	58,15,30	81,73	7,17,45
1934-35	71,93	53,25,68	4,15,10	9,85,75
1935-36	94,95	38,26,55	6,45,75	7,03,09
1936-37	1,60,88	29,45,49	13,87,64	28,17
1937-38	1,55,60	17,89,24	3,12,49	1,55,19
1938-39	74,54	13,79,52	2,16,45	81,91
10 months Apr.— Jan. 1939-40	1,31,42 *	32,66,50	3,93,88	3,96,66
1940-41	..	..	..	FIGURES NOT AVAILABLE
1941-42	..	..	..	.. ..
1942-43	..	..	..	.. ..

* Exclusive of Burma.

London New York Cross Rate (£ 1 per 4 dollars)

Rate Price of Gold in London and in Bombay.

		London-New York cross rate dollars to pound sterling		Price of Gold in London		Price of Bar Gold at Bombay		Estimated stock at the end of each month in Bombay
		Highest	Lowest	Highest	Lowest	Highest	Lowest	Tolas
				£. s. d	£. s. d.	Rs. A P	Rs. A. P.	
April	1941 ..	4.025	4.025	8-8-0	8-8-0	43 9 0	42 6 0	6,00,000
May	,, ..	,,	,,	,,	,,	42 12 3	42 0 3	250,000
June	,, ..	,,	,,	,,	,,	42 6 9	42 1 6	150,000
July	,, ..	,,	,,	,,	,,	42 6 6	41 11 0	275,000
August	,,	,,	,,	,,	,,	42 3 9	41 15 0	50,000
September	,,	,,	,,	,,	,,	42 6 9	42 2 6	1,75,000
October	,, ..	,,	,,	,,	,,	42 3 9	42 0 9	125,000
November	,, ..	,,	,,	,,	,,	44 13 0	42 3 0	125,000
December	..	,,	,,	,,	,,	50 2 0	44 6 6	100,000
January	1942 ..	,,	,,	,,	,,	47 12 0	46 1 0	200,000
February	,, ..	,,	,,	,,	,,	51 0 0	46 15 0	125,000
March	,, ..	,,	,,	,,	,,	58 4 0	50 6 0	125,000
April	,, ..	,,	,,	,,	,,	52 8 0	44 12 0	775,000
May	,, ..	,,	,,	,,	,,	49 5 0	47 4 0	125,000
June	,, ..	,,	,,	,,	,,	50 15 0	48 5 0	150,000
July	,, ..	,,	,,	,,	,,	52 8 0	50 10 0	75,000
August	,, ..	,,	,,	,,	,,	53 15 .. 0	.. 52 10 0	150,000
September	,, ..	,,	,,	,,	,,	58 8 0	56 10 0	75,000
October	,, ..	,,	,,	,,	,,	61 10 0	60 10 0	100,000
November	,, ..	,,	,,	,,	,,	72 0.. 0	.. 63 .. 0	.. 125 000
December	,, ..	,,	,,	,,	,,	67 3 0	61 0	75,000
January	1943 ..	,,	,,	,,	,,	66 12 0	65 2	60,000
February	,, ..	,,	,,	,,	,,	67 0.. 0	.. 64 10 0	100,005
March	,, ..	,,	,,	,,	,,	71 13 6	67 14 0	100,000

Price of Silver—Bombay (per 100 tolas country bar), London (per Standard ounce) and New York (per fine ounce) for 1938-39 to 1942-43

	1938-39 Bombay Highest	Bombay Lowest	London Highest	London Lowest	New York Highest	New York Lowest	1939-40 Bombay Highest	Bombay Lowest	London Highest	London Lowest	New York Highest	New York Lowest	1940-41 Bombay Highest	Bombay Lowest	London Highest	London Lowest	New York Highest	New York Lowest
	Rs. A.	Rs. A.	d.	d.	Cents	Cents	Rs. A.	Rs. A.	d	d.	Cents	Cents	Rs. A.	Rs. A.	d	d.	Cents	Cents
April	49 15	48 3	19⅝	18 15/16	42¼	42¼	53 2	52 9	20 5/16	19 13/16	42¼	42¼	59 9	54 10	21⅛	20⅝	34⅞	34⅞
May	49 11	49 5	18 15/16	18⅝	42¼	42¼	53 10	52 11	20⅝	19 15/16	42¼	42¼	61 13	59 5	23⅛	20⅝	35⅛	34⅞
June	50 6	49 6	19 1/16	18 15/16	42¼	42¼	52 11	48 1	20	17 15/16	42¼	42¼	59 2	59 13⅝	23⅛	21⅛	35⅛	34⅞
July	51 10	50 2	19 5/16	18 15/16	42¼	42¼	49 8	41 7½	18 15/16	16 3/16	36⅝	34 15/16	63 12	61 9⅝	22⅝	21 13/16	34⅞	34⅞
August	51 7	50 9	19 7/16	19 7/16	42¼	42¼	53 1	41 10	20 5/16	16	39⅛	34⅛	64 3	62 7⅛	23⅝	22 5/16	3	34⅞
September	52 0	50 3	19 5/16	19 5/16	42¼	42¼	63 12	49 14	23⅝	19⅛	39⅛	35	65 15⅛	62 8⅝	23⅛	23⅝	34⅞	34⅞
October	51 7	50 13	19 5/16	19 5/16	42¼	42¼	61 7	55 10⅝	23⅝	21⅛	35⅛	34⅛	62 11⅛	60 10⅝	23⅛	23⅝	34⅞	34⅞
November	51 7	50 10	20⅛	19⅝	42¼	42¼	64 8	59 15⅝	23⅝	23 1/16	34⅛	34⅛	61 15	60 2	23⅝	22⅝	34⅞	34⅞
December	51 2	50 6	20 1/16	19 15/16	42¼	42¼	66 4	58 11	23⅛	22⅝	36⅛	34⅛	62 7	60 6	23 5/16	22 15/16	34⅞	34⅞
January	52 7	51 13	20⅛	19 15/16	42¼	42¼	61 5⅛	55 3⅛	22⅝	21 13/16	34⅛	34⅛	63 7⅛	61 11⅛	23⅛	23 5/16	34⅞	34⅞
February	52 6	51 15	20 7/16	19 15/16	42¼	42¼	58 9	55 7	21 13/16	20 7/16	34⅛	34⅛	63 8	62 11	23⅝	23⅛	34⅞	34⅞
March	52 12	52 1	20⅝	19⅞	42¼	42¼	59 10	56 0	21 15/16	20 1/16	34⅛	34⅛	63 12	62 10	23⅞	23 1/16	34⅞	34⅞
Yearly	53 1½	48 2	21½	18 7/16	42½	42½	66 1	41 7½	23½	16 1/16	12¼	34½	64 13	54 2⅝	20½	20⅛	35⅝	34⅝

Price of Silver (per 100 tolas country bar) London (per Standard ounce) and New York (per fine ounce) for 1938-39 to 1942-43

Month	1941-42 Bombay Highest	Bombay Lowest	London Highest	London Lowest	New York Highest	New York Lowest	1942-43 Bombay Highest	Bombay Lowest	London Highest	London Lowest	New York Highest	New York Lowest
	Rs. A.	Rs. A.	d.	d.	Cents	Cents	Rs. A.	Rs. A.	d	d.	Cents	Cents
April	63 6	62 6	23⅛	23½	34⅞	34⅞	87 8	75 4	23½	23½	35⅛	35⅛
May	63 1	62 0	23½	23⅝	34⅞	34⅞	92 5	77 6	23½	23⅛	35⅛	35⅛
June	63 1	62 9	23 7/16	23⅝	34⅞	34⅞	85 9	80 6	23½	23½	35⅛	35⅛
July	63 2	62 12	23½	23 5/16	34⅞	34⅞	85 4	82 14	22⅝	23½	35⅛	35⅛
August	62 15	62 11	23⅛	23 5/16	34⅞	34⅞	85 3	81 13	23½	23½	35⅛	35⅛
September	63 1	62 11	23½	23⅜	34⅞	34⅞	91 0	85 4	23½	23½	44⅜	44⅜
October	63 1	62 6	23½	23½	34⅞	35⅛	107 0	106 0	23½	23½	44⅛	44⅜
November	62 3	63 0	23½	23½	35⅛	34⅞	116 8	106 0	23½	23⅛	44⅜	44⅜
December	71 11	63 1	23½	23½	35⅛	35⅛	108 10	95 8	23½	23½	44⅜	44⅜
January	71 2	69 5	22½	23½	35⅛	35⅛	104 2	97 14	23½	23½	44⅜	44⅜
February	80 0	69 14	23½	23½	35⅛	35⅛	105 4	99 10	23½	23½	44⅜	44⅜
March	96 8	80 0	23⅛	23½	35⅛	35⅛	112 10	106 10	23½	23½	44⅜	44⅜
Yearly	96 8	62 0	23⅛	23 5/16	35⅛	34⅞	116 8	75 4	23½	23 7/16	44⅜	35⅛

Details of sale of Provincial Government Treasury Bills from April 1938 to March 1943

(In 000's Rupees)

Week ended	Issuing Government.	Period	Amount offered for tender	Amount tendered	Amount sold	Average rate of discount % per annum	Amount outstanding with the public
Jan., 12, 1940	Assam	3 months	50,00	50,50	50,00	2 8 0	25,25
,, 26,	U. P.	3 ,,	60,00	65,75	60,00	2 7 9	40,00
Feb., 2, ,,	C. P. & Berar	3 ,,	40,00	45,00	40,00	2 4 11	40,00
March, 8, ,,	Bengal	3 ,,	30,00	48,25	30,00	2 1 9	30,00
April, 12, ,,	Assam	3 ,,	25,00	67,25	25,00	1 15 0	25,00
Aug., 16 ,,	Madras	3 ,,	1,00,00	2,11,25	1,00,00	0 13 0	1,00,00
Sept., 6, ,,	,,	3 ,,	50,00	86,00	50,00	0 12 7	1,50,00
,, 6,	Bengal	3 ,,	40,00	40,00	40,00	0 13 0	40,00
Oct., 4, ,,	C. P. & Berar	3 ,,	50,00	85,00	50,00	0 13 7	50,00
,, 4, ,,	Bengal	3 ,,	50,00	52,00	50,00	0 15 0	90,00
,, 25, ,,	Madras	3 ,,	75,00	1,76,00	75,00	0 11 0	2,28,00
Nov., 8, ,,	,,	3 ,,	75,00	1,35,00	75,00	0 11 10	3,00,00
Nov., 8, ,,	C. P. & Berar	3 ,,	25,00	73,00	25,00	0 14 1	75,00
,, 15, ,,	Madras	3 ,,	75,00	1,23,00	75,00	0 15 3	2,75,00
Dec., 6, ,,	Bengal	3 ,,	75,00	90,50	75,00	1 2 10	1,25,00
Jan., 10, 1941	C. P. & Berar	3 ,,	50,00	86,00	50,00	1 0 6	75,00
June, 6 1941	Bengal	3 ,,	40,00	50,00	40,00	0 15 9	40,00
July 4, ,,	,,	3 ,,	60,00	1 6150	60,00	0 15 1	1,40,00
Aug., 8, ,,	,,	3 ,,	75,00	1,22,00	75,00	0 13 0	1,75,00
Sept., 5 ,,	,,	3 ,,	10000	2 14,25	1,00,00	0 7 11	2,35,00
Oct., 3-10 ,,	,,	3 ,,	75,00	2,85,00	75,00	0 11 11	2,50,00
,, 10, ,,	C. P. & Berar	3 ,,	40,00	1,55,25	40,00	0 11 3	40,00
,, 17, ,,	Madras	3 ,,	50,00	1,80,50	50,00	0 11 0	50,00
Nov., 7, ,,	Bengal	3 ,,	1,25,00	1,67,25	1,25,00	0 12 5	3,00,00
,, 21, ,,	Madras	3 ,,	50,00	1,26,00	50,00	0 13 1	1 00 00
Dec., 5, ,,	Bengal	3 ,,	100,00	2,48,00	1,00,00	0 15 4	3,00,00
Jan, 13, 1942	,,	3 ,,	100 00	1,05,00	1,00,00	1 5 9	1,00,00
,, 9, ,,	C. P. & Berar	3 ,,	50,00	1,31,00	50,00	0 10 0	50,00
,, 25, ,,	Madras	3 ,,	50,00	1,78,00	50,00	0 10 0	50,00
Feb., 30, ,,	Assam	3 ,,	30,00	36,00	30,00	0 12 7	30,00
March, 16, ,,	Madras	3 ,,	50,00	1,24,00	50,00	0 10 8	1,00,00
April 16, ,,	Bengal	3 ,,	50,00	1,34,50	50,00	0 10 0	50,00
,, 13, ,,	U. P.	3 ,,	75,00	97,00	75,00	0 12 3	75,00
June 11, ,,	Madras	3 ,,	50,00	1,54,00	50,00	0 15 1	1,50,00
Jan,, 29, 1943	Assam	3 ,,	50,00	73,00	50,00	1 4 0	80,00
,, 26, ,,	Assam	6 ,,	50,00	40,00	30,00	1 4 0	80,00
		Total ..	1938-39	7,17,00	5,70,00	...	1,50,00
		,, ..	1939-40	13,75,75	11,50,00	...	1,80,00
		,, ..	1940-41	12,28,00	6,90,00	..	50,00
		,, ..	1941-42	18,14,25	8,15,00	...	1,00,00
		,, ..	1942-43	9,67,50	4,35,00	...	80,00

Post Office Saving Bank*

(In lakhs of Rupees.)

	Deposits	Withdrawals	Interest	Net increase	Amount Outstanding at the end of the year
1913-14	10,99	9,01	61	2,56	23,16
1914-15	9,07	17,88	53	—8,28	14,89
1915-16	7,73	7,73	43	43	15,32
1916-17	8,93	8,10	15	1 28	16,59
1917-18	9,72	10,17	11	—1	16,58
1918-19	12 99	11,21	16	2,21	18,82
1919-20	17,18	15,22	56	2,52	21,31
1920-21	18,22	17,33	62	1,51	22,86
1921-22	17,11	18,32	64	—60	22,26
1922-23	17,67	16,75	62	91	23,19
1923-24	17,71	16,79	67	1,59	24,78
1924-25	17 11	17,61	71	—51	25,63
1925-26	19,05	18,19	73	1,59	27,23
1926-27	20,38	18,89	79	2,28	29,50
1927-28	23,14	20,84	86	3,16	32,66
1928-29	26,21	25,39	97	1,82	34,49
1929-30	26,25	24,63	1,02	2,64	37,13
1930-31	24,36	25,50	1,04	—10	37,02
1931-32	27,29	27,29	1,08	1,18	38,20
1932-33	30,96	26,86	1,15	5,25	43,45
1933-34	36,87	29,37	1,28	8,78	52,23
1934-35	38,67	37,26	1,34	2,75	58,30
1935-36	46,33	38,88	1,50	8,95	67,25
1936-37	43,38	37,40	1,15	7,13	74,68
1937-38	43,27	39,76	1,46	4,97	77,36
1938-39	44,61	44,65	1,42	4,38	81,74
1939-40	40,51	45,22	1,15	—3,56	78,38
1940-41	25,35	45,09	93	—18,81	59,57
1941-42	21,91	30,18	83	—7,11	52,43
1942-43	22,26	22,84	73	15	52,28

* Figures are included for Burma also up to 1936-37

Post Office Defence Savings Bank Deposits

(In lakhs of Rupees)

	Receipts	Withdrawals	Amount Outstanding
1941-42	11	—	11
1942-43	29	—	40

Post Office Cash Certificates*

(In lakhs of Rupees.)

	Receipts	Repayments	Net receipts	Total amount Outstanding
1917-18	10,00	1,12	8,88	8,88
1918-19 1919-20	4,03	7,16	—3,13	5,75
1920-21 1921-22	1,00	2,41	—1,41	4 34
1922-23 1923-24	7,61	3,53	4,08	8,42
1924-25 1925-26	15,65	3,10	12,55	20,97
1926-27 1927-28	13,61	3,88	9,73	30,70
1928-29	4,91	3,31	1,60	32,30
1929-30	7,15	4,45	2,70	35,00
1930-31	11,78	8,35	3 43	38,43
1931-32	14,49	8,34	6'15	44,58
1932-33	15,74	4,68	11,06	55,64
1933-34	13,31	5,24	8,07	63,71
1934-35	9,95	7,70	2,25	65,96
1935-36	13,15	13,13	2	65,98
1936-37	14,88	16,46	—1,58	64,40
1937-38	13,97	18,16	—4,19	60,21
1938-39	14,71	15,35	—64	59,57
1939-40	10,25	12,80	—2,55	57,02
1940-41	4,89	14,93	—10,04	46,98
1941-42	3,97	11,94	—7,97	39,01
1942-43	3,76	8,20	—4,44	34,57

* Figures fo Burma are included up to 1936-37

Post Office Defence Savings Certificates

(In lakhs of Rupees)

	Receipts	Withdrawals	Amount Outstanding
1940-41	2,41	12	2,92
1941-42	2,81	75	4,35
1942-43	2,02	81	5,56

Provincial Government Budgets

(In Lakhs of Rupees)

PROVINCES	1941-42. Revenue	1941-42. Expenditure	1941-42. Surplus (+) or Deficit (—)	Revised Estimates—1942-43 Revenue	Revised Estimates—1942-43 Expenditure	Revised Estimates—1942-43 Surplus (+ or Deficit (—)	Budget Estimates—1943-44 Revenue	Budget Estimates—1943-44 Expenditure	Budget Estimates—1943-44 Surplus (+) or Deficit (—)
Madras	19,55	18,67	+88	21,05	21,05	..	21,33	21,23	+10M,
Bombay	16,86	15,25	+1,61	17,61	17,02	+59	17,69	17,69	.. B.
Bengal	14,94	15,50	—56	15,67	17,21	—1,54	16,02	17,55	—1,53 B.
United Provinces	16,50	16,48	+2	20,11	20,00	+11	20,26	20,18	+8 U.P.
Punjab	14,31	13,67	+64	15,77	15,71	+6	15,19	14,69	+50 P.
Bihar	6,55	6 01	+54	7,21	6,65	+56	6,97	6,36	+61 B,
Central Provinces and Berar ..	5,31	5,11	+20	6,47	6,32	+15	6,40	6,33	+7 C.P,
Assam	3,28	3,31	—3	3,44	3,54	—10	3,64	3,72	—8 A.
N. W. F. Province	2,20	1,98	+22	2,29	2,46	—17	2,07	2,15	—8
Orissa	2,06	1,94	+15	2,19	2,26	—7	2,12	2,16	—4
Sind	5,85	5,59	+26	8,70	6,33	—63	4,96	5,09	—13
TOTAL ..	1,07,41	1 03,18	+3,93	1,17,51	1,18,55	—1,04	1,16,55	1,17,15	—60

Consolidated Debt Position of Provinces At the end of

(Rs. Lakhs)

	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43
I. Public Debt						
(a) Permanent Debt	12,64	15,07	19,60	23,33	23,04	27 74
(b) Floating Debt	..	1,'0	1, 0	50	1,00	1,11
c) Loans from Central Gove ment	1,24,67	1,23,24	1,21,77	1,21,09	1,18,49	1,11,61
II. Unfunded Debt	22,3)	23,39	24,41	25,54	26,62	27,2)
III. Gross Total Rupee Debt	1,59,70	1,63,20	1,67,61	1,70,31	1,69,15	1,67,66
IV Net Debt (Deduct Outstanding loans and advances made by Provincial Governments) ..	1,00,32	1,02,48	1,35,65	1,38,34	1,37,92	1, 4,33
V. Provisions for the reduction of Debt during the year ..	1,60	1,06	1,51	2,17	3,64	9,35
I. Closing Cash balance	10,07	7,34	9.59	10,64	11,34	19,93

Subventions and other Payments made by the Centre to the Provinces under the Niemeyer award.

(In Lakhs of Rupees)

PAID TO	Income Tax 1941-42 Accounts	Income Tax 1942-43 Accounts	Income Tax 1943-44 Accounts	Jute Duty 1941-42 Accounts	Jute Duty 1942-43 Accounts	Jute Duty 1943-44 Accounts	Subventions 1941-42 Accounts	Subventions 1942-43 Accounts	Subventions 1943-44 Accounts
Bengal	1,47 80	2,18.00	2,42.00	1,65.55	1,19.09	1,32.45	..	..	..
Bombay	1,47.80	2,18.00	2,42 00	..	..	..	..	..	..
Madras	1.10.85	1,63.50	1,81.50	..	..	..	..	..	..
United Provinces	1,10.85	1,63.50	1,81.50	..	..	..	25.00	..	...
Punjab	59.12	87.20	96.80	..	..	..	..	..	..
Central Provinces and Berar	:6.95	54,50	60.50	..	..	..	..	..	..
Bihar	73.90	1.0.00	1,21.00	16.14	10.92	10.12	..	..	..
Assam	14.78	21.80	24.20	12.48	9.64	11.59	30.00	30.00	30.00
Orissa	14.78	21.80	24. 0	1.00	0.65	0.84	43.00	40.00	40.00
N. W. F. Province	7.39	10.90	12.10	..	..	..	1,00.00	1,00.00	1,00.00
Sind	14.78	21.80	24.20	..	..	..	1,05.00	1,05.00	1,05.00
TOTAL	7,39.00	10,90.00	12,10.00	1,95.17	1,40.30	1,45.00	3,03.00	2,75.00	2,75.00

Government of India Ways and Means Advances and Treasury Bills

Transactions with the public during 1941-43.

(In thousand of Rupees)

	Opening Balance	Ways And Means Advances; Opening balance 1st April 1941 16,00,00 1st April 1942 Nil			Treasury Bills 1st April 1941 25,51,75 1st April 1942 1,36,97,75			
		Advances Taken	Advances Repaid;	Outstanding at the end of each month	Sales.	Discharges	Outstanding † at the end of each month	Total outstanding of ways and means advances and Treasury Bills.
April 1941		2,50,00	7,50,00	11,00,00	7,75,50	15,36,00	76,42,00	87,42,00
May		7,50,00	18,50,00	..	15,45,50	28,95,00	82,50,50	82,50,50
June		5,00,00	5,00,00	..	13,51,50	25,05,75	112,39,75	112,39,75
July		8,00,00	8,00,00	..	8,30,50	32,35,25	102,05,25	102,05,25
August		5,50,00	..	5,50,00	5,00,00	36,51,25	87,87,25	93,37,25
September		8,50,00	7,50,00	6,50,00	8,00,00	43,29,75	79,25,00	85,75,00
October		..	6,50,00	..	12,10,00	30,20,75	73,79,25	73,79,25
November		..	..	..	11,11,75	34,36,75	66,42,00	66,42,00
December		..	..	..	9,27,00	31,00,00	49,77,00	49,77,00
January 1942		7,50,90	7,50,00	..	8,53,75	18,96,50	45,56,75	45,56,75
February		23,50,00	23,50,00	..	9,03,75	20,16,25	1,22,20,25	122,20,25
March		29,00,00	29,00,00	..	10,17,75	25,64,25	1,36,97,75	136,97,75
April		26,00,00	26,00,00	..	15,10,00	14,72,50	1,57,50,75	157,50,75
May		7,00,00	7,00,00	..	26,78,00	81,81,25	1,82,45,50	182,45,50
June		24,50,00	24,50,00	..	21,00,00	68,61,00	1,66,34,00	166,34,00
July		..	..	..	39,81,75	60,00,00	1,70,31,75	170,31,75
August		19,00,00	17,00,00	2,00,00	21,18,25	53,94,75	1,65,01,00	167,01,00
September		18,50,00	11,50,00	9,00,00	24,00,00	53,28,25	1,94,17,75	203,17,75
October		17,00,00	26,00,00	..	36,00,00	75,18,00	1,76,32,75	176,34,75
November		22,50,00	22,50,00	..	38,00,00	47,56,00	1,91,46,50	191,46,50
December		..	..	..	31,85,25	71,66,25	1,89,05,75	189,05,75
January 1943		23,00,00	23,00,00	..	39,06,25	62,05,50	2,63,86,50	263,86,50
February		..	..	..	41,89,75	62,60,75	2,66,45,25	266,45,25
March		4,50,00	4,50,00	..	35,93,50	89,38,50	2,64,69,50	266,69,50

† Includes ammount outstanding on account of the Issue Department the provinces and Burma.

Statistics of the Reserve Bank of India for the Years 1935-

ISSUE DEPARTMENT

(In Lakhs of Rupees)

Month	Notes held in Banking Dept.	Notes in circulation;	Total	Gold Coin & Bullion	Sterling Securities;	Rupee Coin*	Rupee Securities;	% of Gold & sterling securities to total Notes issued
Annual Average of Friday Figures								
1935-36	161,06	27,58	191,61	44,42	62,09	55,51	29,62	55.58
1936-37	175,81	25,81	201,62	44,42	69,57	64,01	23,62	56.54
1937-38	185,15	25,61	211,76	44,42	79,92	60,23	27,19	58.72
1938-39	182,36	28,28	210,64	44,42	66,95	67,11	32,16	52.91
	(7,97)	(1)	(7,98)					
1939-40	209,22	18,79	228,01	44,42	78,63	67,52	37,44	53.97
	(11,09)	(8)	(11,17)					
1940-41	241,41	17,26	258,67	44,42	129,92	35,87	48,46	67.39
	(13,38)	(20)	(13,58)					
1941-42	301,68	12,21	319,89	44,42	165,00	35,28	75,19	65.47
	(20,20)	(23)	(20,43)					
1942-43	513,14	11,80	525,24	44,42	319,11	22,33	139,38	69.26
1941-42 Last Friday of								
April	267,12	13,48	280,60	44,42	108,80	36,06	91,32	54.60
	(17,85)	(23)	(18,08)					
May	272,97	12,79	285,76	44,42	113,80	36,23	91,31	55.37
	(17,79)	(22)	(18,01)					
June	276,93	14,17	291,10	44,42	118,80	36,57	91,31	56.07
	(18,13)	(24)	(18,37)					
July	273,01	19,17	292,18	44,42	121,65	37,65	88,46	56.84
	(18,63)	(32)	(18,95)					
August	276,59	16,44	293,03	44,42	131,63	38,49	78,49	60.08
	(18,50)	(27)	(18,77)					
September	286,12	10,64	296,76	44,42	136,63	39,21	76,50	61.01
	(18,48)	(21)	(18,69)					
October	293,45	13,94	307,39	44,42	155,67	38,84	68,46	65.09
	(19,36)	(24)	(19,60)					
November	297,42	11,72	319,14	44,42	180,65	37,60	56,47	70.52
	(19,66)	(22)	(19,88)					
December	335,60	12,12	347,72	44,42	227,62	34,18	41,50	78.24
	(21,08)	(23)	(21,31)					
January 1942	356,41	9,77	366,18	44,42	248,62	31,64	41,50	80.03
	(23,22)	(39)	(23,61)					
February	379,68	9,34	389,02	44,42	273,62	29,48	41,50	81.75
	(25,15)	(4)	(25,19)					
March	410,07	10,99	421,06	44,42	212,85	27,53	136,26	61.10
	(28,33)	(1)	(28,34)					
April	442,61	11,35	453,69	44,42	241,85	29,47	138,22	63.06
	(28,75)	(5)	(28,80)					
May	460,65	12,56	473,21	44,42	251,85	27,79	149,15	62.61
	(28,81)	(..)	(28,81)					
June	443,19	12,92	456,11	44,42	261,85	27,55	122,29	67.15
July	451,00	12,30	463,30	44,42	286,79	29,72	108,37	71.49
August	474,25	13,09	487,34	44,42	311,79	28,73	102,40	73.09
September	492,58	10,77	503,35	44,42	329,79	26,71	102,43	74.34
October	514 70	9,78	524,48	44,42	325,83	21,84	132,39	70.59
November	510,36	11,58	551,94	44,42	359,83	15,30	132,39	73.24
December	570,36	15,44	585,80	44,42	404,83	41,17	122,38	76.69
January	593,25	10,94	604,19	44,42	355,83	14,58	189,36	66.25
February	614,36	11,87	626,23	44,42	385,73	13,62	182,46	68.69
March	643,58	11,53	655,11	44,42	421,71	14,51	174,47	71.15

Note—Burma figures shown in brackets below totals. Figures for India only from June 1942.
* Including govt. of India one rupee notes from July 1940.

Statistics of Reserve Bank * of India for the Year 1935-43

BANKING DEPARTMENT

Annual Average of weekly figures	Deposits: Govt.	Banks	Other A/c	Total	Other Liabilities;	Notes and Coin	Balances held abroad	Loans and advances to Govt	Investments	Other assets
1935-36	11,26	27,26	9	38,61	91	27,68	14,99	86	5.47	51
1936-37	9,83	26,56	41	36,80	1,13	25,90	13,61	1,54	6,04	82
1937-38	11,37	24,96	69	37,02	87	25,70	13,48	79	7,12	72
1938-39	14.90	16,19	75	31,84	1 28	28 38	4,21	1,72	6,36	90
1939-40	13,84	17,82	1,05	32,71	1,54	18,88	12,34	1,05	7,25	1,75
1940-41	17,10	36,84	1,91	56,15	2,56	17,39	39,32	2,01	7,78	1,17
1941-42	17,60	37,73	3,89	59,22	4,33	12,36	46,08	4,09	8,96	1,76
1942-43	21,09	57,36	3,30	81,75	7,91	11,92	75,11	1,49	7,12	3,50
Last Friday of										
April 1941	14,00	28,41	6,28	48,69	4,87	13,59	28,73	11,00	7,85	1,39
May	20,10	29,52	3,66	53,24	5,00	12 92	40 30	5,50	7.87	1,65
June	12 30	50,35	3,06	45,71	5,64	14,30	37,06	15	8,44	1,40
July	26,60	30,60	3,36	60,56	1,51	19,30	43,18	10	8,00	1,19
August	14,07	45,17	5,11	64.35	1 49	16,57	45,14	5,01	7,63	1.05
September	15.77	49 15	2,92	67,84	1,52	10,80	52,55	5,51	8,98	1,07
October	31,61	50,81	4,42	86,84	2,47	14,09	75,41	..	8,44	1,18
November	17,08	47,31	4,30	68,69	2,53	11,89	59,83	..	8,16	1,27
December	17,91	33,95	4,28	56,14	4,33	12,30	47,15	..	8,83	1,80
January 1942	29,46	40,06	2,07	71,59	6,21	9,97	54,77	7,54	13,37	1,09
February	15,05	41,12	3,01	59,18	8,59	9,50	33,03	20,40	9,96	4,70
March	19,44	42,03	2,25	63,72	7,90	11,13	35.29	17,50	12,18	5,12
April	13,07	43,81	1,69	58,57	11,49	11,48	41,57	11,67	8,38	5,88
May	22,30	56,09	2,16	80,55	8,60	12,68	66,65	3,14	8,56	8,12
June	12,67	62,72	1,74	77,13	10,09	13,04	60,77	5,00	8,60	9,68
July	20,68	65,20	1,91	87,79	4,60	12,44	80,63	59	6,40	2,27
August	12,34	69,84	2,92	85,10	5,20	13,25	77,21	87	6,64	2,12
September	23,15	64,58	3,36	91,09	6,10	10,92	86,27	1,29	6,58	1,88
October	22,92	76,81	3,62	97,35	6,15	9,91	94,41	..	6,67	2,17
November	25,50	61,47	4,37	91,34	7,23	11,73	87,28	41	6,55	1,81
December	25,82	48,67	5,00	79,49	6,64	15,59	70,98	58	5,98	2,34
January 1943	40,09	44,50	4,55	89,14	8,60	11,09	85,18	39	6,38	2,77
February	40,56	50,52	3,65	94,73	8,72	12,04	91,32	1	6,51	2,55
March	36,47	47,01	4,51	87,99	9,88	11,70	87,34	18	5,68	2,38

Imperial Bank of India Official rates of interest.

1923	per cent.	Average for whole year.
11th January ..	8	
25th May ..	7	
31st May; ..	6	
7th June ..	5	5.947
24th June ..	4	
15th November ..	5	
29th November ..	6	
20th December ..	7	
1924		
3rd January ..	8	
14th February ..	9	
10th April ..	8	
29th May ..	7	6.682
19th June ..	6	
3rd July ..	5	
31st July ..	4	
21st August ..	5	
16th October ..	6	
1925		
22nd January ..	7	
21st May ..	6	
18th June ..	5	5.642
2nd July ..	4	
24th September ..	5	
3rd December ..	6	
1926		
20th May ..	5	4.825
10th June ..	4	
1927		
1st January ..	5	
13th January ..	6	
10th February ..	7	
2nd June ..	6	
23rd June ..	5	5.720
8th July ..	4	
8th September ..	5	
8th December ..	6	
22nd December ..	7	

1928	per cent.	Average for whole year
21st June ..	6	
19th July, ..	5	6.196
15th November ..	6	
13th December ..	7	
1929		
11th February ..	8	
11th April ..	9	
9th May ..	6	6.328
6th June ..	5	
10th October ..	6	
31st October ..	7	
1930		
3rd April; ..	6	
10th July ..	5	5.887
20th November ..	6	
1931		
22nd January ..	7	
28th May ..	6	7.046
6th August ..	7	
24th September ..	8	
1932		
14th January ..	7	
25th February ..	6	5.021
28th April ..	5	
7th July ..	4	
1933		
From 16th February ..	3½	3.563
31st December ..	3½	
1934 ..	3.5	
1935 ..	3.5	
Reserve Bank of India		
5th April ..	3.5	3,3
28th November ..	3 0	
1936 ..	3.0	
1937 ..	3.0	
1938 ..	3.0	
1939	3.0	
1940 ..	3.0	
1941 ..	3.0	
1942 ..	3.0	
1943 ..	3.0	

Monthly Purchase of Sterling from 1937-38 to 1942-43

	1937-38 Amount Thousand £	1937-38 Average rate per; rupee d.	1938-39 Amount Thousand £	1938-39 Average rate per; rupee d.	1939-40 Amount Thousand £	1939-40 Average Rate Per rupee ..	1940-41 Average rate per rupee; £ ..	1941-42 Amount Thousand £	1941-42 Average rate per; rupee d.	1942-43 Amount Thousand £	1942-43 Average rate per rupee d.
April ..					1,710	1-515/16	2,314	3,276	18,0	9,963	18,0
May ..	5,480	18.125	3.03	18.125	..	..	4,855	3,122	,,	3,825	,,
June ..	95	,,	..	..	3,75	1-515/16	5,765	3,529	,,	4,424	,,
July ..	985	,,	..	..	..	..	3,824	3,119	,,	4,222	,,
August ..	425	,,	4,15	17.9375	5,790	1-515/16	5,137	2,210	,,	3,514	,,
September ..	753	,,	6,60	,,	6,860	1-15/16	4,186	1,638	,,	2,145	,,
October ..	80	,,	6,30	,,	10,393	5/32	2,735	6,160	,,	6,020	,,
November; ..	3 035	,,	1,625	,,	8,445	1-6	5,509	10,411	,,	7,530	,,
December ..	650	,,	1,135	,,	9,920	5 11/64	7,332	16,424	,,	13,049	,,
January ..	570	,,	1,193	,,	11,438	1-6	5,582	7,737	,,	8,132	,,
February ..	3,270	,,	6,495	,,	7,79	1-6	1,955	8,419	,,	11,070	,,
March ..	4,945	,,	7,707	,,	9,867	1-6	5,095	7,214	,,	17,779	,,
	4,892	,,	5,305	17.933							
TOTAL ..	25,140	18 125	25,464	17.9375	72,596	1-564	57,043	73,319	18,0	91,673	18,0

Remittances Through the Reserve Bank of India Telegraphic Transfer issued and Paid

(In Lakhs of Rs.)

Centre	1942-43 April to Sept. Issued	1942-43 April to Sept. Paid	1942-43 Oct. to March. Issued	1942-43 Oct. to March. Paid	1941-42: April to Sept. Issued	1941-42: April to Sept. Paid	1941-42: Oct. to March. Issued	1941-42: Oct. to March. Paid	1940-41 April to Sept. Issued	1940-41 April to Sept. Paid	1940-41 Oct. to March. Issued	1940-41 March. Paid
Bombay	34,91	115,92	109,93	150,79	43,29	71,26	46,65	63,91	33,57	58,38	35,97	41,69
Calcutta	1,58,62	63,31	251,91	123,54	90,46	52,12	101,63	18,59	80,14	47,04	57,91	36,19
Cawnpore	5,31	13,81	3,36	27,72	6,23	8,65	1,35	12,23	1,78	8,12	3,31	4,26
Delhi	7,97	3,17	12,09	7,03	6,27	2,31	8,70	3,58	8,30	2,68	7,13	1,42
Karachi	8,65	12,72	15,68	18,95	5,64	7,82	7,10	11,41	7,42	7,52	5,70	8,21
Lahore	12,20	22,30	8,97	45,44	8,87	8,62	7,01	22,40	9,81	13,01	6,14	12,26
Madras	5,68	22,02	8,45	30,86	11,02	16,49	7,52	21,40	10,89	16,82	6,67	12,20
Total	2,33,34	254,13	410,39	404,33	172,78	167,30	182,96	183,52	154,91	153,57	122,83	116,13

Remittances Through the Imperial Bank of India

Demand Drafts Purchased

	By Bengal Circle Offices		By Bombay Circle Offices		By Madras Circle Offices		Total.	
	1941-42	1942-43	1941-42	1942-43	1941-42	1942-43	1941-42	1942-43
Sent to Offices in Bengal Circle ..	61,58	84,82	10,55	13,20	2,05	2,36	74,18	100,37
Sent to Offices in the Bombay Circle..	17,35	29,71	42,73	59,31	5,17	7,79	65,80	96,52
Sent to Offices in theMadras Circle ..	2,49	2,65	3,70	5,13	17,54	24,51	23,73	32,29
TOTAL	81,42	117,18	56,98	77,64	25,31	34,66	163,71	229,18

Clearing House Returns (In Lakhs of Rupees)

	Bombay	Calcutta	Cawnpore	Delhi	Karachi	Lahore	Madras	Rangoon	Total
1935-36	7,16,64	9,18,68	11,69	13,73	30,12	11,16	69,23	72,00	18,43,35
1936-37	7,62,38	923,68	11,51	15,61	31,94	11,40	91,39	83,75	19,31,66
1937-38	8,15,56	966,93	11,91	18,27	35,53	11,21	1,09,61	82,07	20,51,12
1938-39	7,86,22	934,65	11,76	18,58	32,66	10,36	98,91	81,40	19,74,89
1939-40	8,83,97	11,54,03	14,23	20,35	37,53	11,14	99,91	97,55	23,18,73
1940-41	8,02,32	10,08,53	19,20	28,53	46,76	16,33	1,08,65	1,18,64	21,48,96
1941-42	10,48,60	12,33,61	29,59	41,35	58,80	26,71	1,36,41	1,09,15*	26,84,92
1942-43	13,15,23	10,74,66	56,21	81,94	77,51	48,76	1,31,40		28,15,71
April	80,43	84,27	1,89	2,91	4,73	1 87	11,44	14,75	2,01,79
May	78,75	90,92	2,09	2,75	4 15	1,85	10,68	14,16	205,75
June	80,49	91,97	1,95	3,59	4 10	2,73	10,42	14,28	209,63
July	83,71	1,01,24	2,16	2,98	4,99	2,12	11,54	13,73	222,47
August	80 76	1,02,60	2,33	3,01	4,59	1,82	10,74	14,70	218,55
September	80,45	1,06,70	2,14	2,73	4,67	1,82	11 54	11 81	221 86
October	87,88	1,08,18	2,45	3,56	5,04	2,30	11,41	12,65	233,47
November	83,48	1,26,18	2,47	3,51	4,91	1,97	11,52	14,97	249,01
December	106,67	1,15,29	2,64	4,28	5,63	2,29	12,83	...	243,60
January 1942	99,78	1,15,60	3,30	4,17	5,89	2,89	13,18	...	244,72
February	89,18	99,06	3,18	3,91	5,39	2,26	10,19	...	213,17
March	1,03,02	91,66	3,49	4,95	14,83	2,79	10,92	...	221,60
April	1,02,38	80,57	3,50	5,43	5,48	2,98	9,17	...	209,51
May	83,19	64,50	3,34	5,46	5,81	3,29	7,07	...	172,66
June	89,60	72,62	3,06	5,13	6,02	3,35	8,21	...	187,99
July	95,18	77,59	3,24	6,14	5,96	4,46	9,47	...	202,06
August	87,22	71,74	2,91	4,79	5,24	3,85	8,96	...	184,73
September	91,84	84,41	3,73	5,03	5,16	3,89	10,68	...	204,74
October	1,60,64	84,98	4,74	5,55	6,22	3,70	11,01	..	222,82
November	1,08,99	1,01,35	4,89	7,10	6,39	4,44	11,92	..	245,08
December	1,28,63	1,13,68	6,00	8,23	6,92	4,29	13,37	...	281,12
January 1943	1,31,82	99,70	5,81	9,25	7,50	4.26	11.32	...	269,66
February	1,32,65	92,78	6,83	8,86	7,64	4,59	12,47	...	266,82
March	1,87,08	1,30,76	8,16	10,97	9,17	5,66	17,25	...	369,05

*Figures from December 1941 not available.

PUBLIC DEBT. OF INDIA

(In Crores of Rupees)

A. Rupee Debt.

End of March	Undated	Over 10 years	Between 5 and 10 years	Under 5 yrars	Treasury Bills	Post Office Savings Bank Depo its and Cash Certi-cates	Other Obliga-tions	Total	Percentage increase (+) or decrease (−)
1914	114.52	1.00	...	...	...	23.17	11.08	179.77	..
1919	113.20	26.42	29.44	59.43	49.24	27.03	24.02	358.78	+99.5
1924	137.25	29.29	96.93	91.45	51.77	33.21	39.62	482.52	+35.5
1929	137.41	121.03	50 25	81.54	43.15	56.79	61.04	551.21	+14.2
1934	126.69	160.73	67.93	79.22	59.24	115.94	83.34	693.09	+25.7
1939	127.75	129.62	112.70	70.89	46.30	141.46	84.34	709.96	+ 2,4
1940	133.93	147.24	113.75	49.35	54.71	135.35	87.48	727.79	+ 2.6
1941	148.52	182.98	150.31	95.07	68.90	108.80	106.59	861.17	+18.3
1942 (Revised) ...	164.18	261.77	68 75	117.16	136.98	95.55	96.61	941.00	+ 9.3
1943 (Preliminary) ...	245.50	238,41	91.75	172.80	264.70	93.00	102.29	1,208.45	+28.4

B. Sterling Debt.*

(In Crores of Rupees)

End of March	Undated	Over 10 years	Between 5 and 10 years	Under 5 years	Other Obliga-tions	Total	Percentage increase (+) or decrease (−)
1914	265.57	...	...	...	0.24	265.81	...
1919	257.80	45.96	...	...	0.32	304.08	+14.4
1924	366.80	38.90	...	...	2.06	397.76	+30.8
1929	296.61	169.93	4.66	...	1.58	472.78	+18.9
1931	269.19	198.50	...	43.08	1.38	512.15	+ 8.3
1939	268 05	138.11	29.30	32.46	4.18	469.10	— 8.4
1940	255.63	115.44	39.09	28.15	4.18	442.49	— 5.7
1941	246.81	40.81	32.87	20.62	3.82	344.93	—22.1
1942 (Revised)	131.00	31.66	17.32	20.95	3.77	210.70	—38.9
1943 (Preliminary	22.13	4.06	6.88	20.62	3.72	57.41	—72.8

*Converted at 1 sh. 4d. per Rupee up to end of 1924 and thereafter at 1 sh. 6d.

INDIAN MONEY RATES

First of	Bank rate %	Imperial Bank and India Hundi rate	Call Money rate Calcutta	Call Money rate Bombay	Bazar Bill rate Calcutta	Bazar Bill rate Bombay	Average monthly Treasury Bill rate of accepted Tenders	Deposits 3 months	Deposits 6 months	Deposits 12 months
							Rs, a. p,			
April 1942 ...	3	3	½	¼	6—7	6¾	1 3 9	1 to 1½	1½ to 1¾	1¾ to 2
May	3	3	½	¼	6—7	6	1 4 1	1 to 1½	1½ to 1¾	1¾ to 2
June	3	3	½	¼	6—7	6	0 14 1	¾ to 1	1½	1½ to 1¾
July	3	3	½	¼	6—7	6	0 9 11	½	1 to 1½	1½ to 1¾
August	3	3	½	¼	6—7	5	0 7 6	½	1 te 1¼	1¼ to 1¾
September ...	3	3	½	¼	6—7	5	0 8 4	¼ to ½	¾ to 1	1½ to 1¾
October	3	3	½	¼	6—7	5	0 9 10	¼ fo ½	¾ to 1	1½ to 1¾
November ...	3	3	½	¼	6—7	5½	0 11 3	½	1	1½ to 1¾
December ...	3	3	½	¼	6—7	6	1 0 3	½	¾ to 1	1⅝ to 1¾
January 1943 ...	3	3	½	¼	6—7	6	1 1 6	¾	¾ to 1	1½ to 1¾
February	3	3	½	¼	6—7	6	1 1 11	¾ to 1	1½ to 1½	1½ te 1¾
March	3	3	½	¼	6—7	6	1 1 11	¾	1½ to 1½	1½ to 1¾

Value of the Merchandise Imported from each Provincial Country by sea into British India during the twelve months 1st April to 31st March, 1941-42 and 1942-43.

Countries.	Twelve months 1941-42 Rs.	1st April to 31st March. 1942-43 Rs.
BRITISH EMPIRE:		
United Kingdom	36,58,71,842	,29,53,43,214
Aden and Dependencies ..	47,94,421	56,39,783
Ceylon	3,40,88,317	4,37,63,179
Burma	29,47,49,331	1,45,93,731
Straits Settlements ..	5,35,98,981	23,95,471
Hongkong	81,85,256	14,20,323
Union of South Africa ..	1,23,86,764	2,24,97,516
Anglo-Egyptian Sudan ..	3,67,76,927	3,09,54,980
Mauritius and dependencies ..	5,79,766	47,480
Zanzibar and Pemba ..	53,59,009	92,03,109
Kenya Colony	6,79,30,540	3,87,35,259
Canada	6,72,94,252	5,53,53,841
Australia	4,95,06,447	3,34,25,485
New Zealand	40,93,213	26,86,542
Other British Possessions ..	5,10,96,710	5,71,26,647
Total British Empire ..	1,05,63,11,776	61,31,86,551
FOREIGN COUNTRIES:		
Sweden	22,91,591	14,54,148
Switzerland	1,72,71,973	1,05,16,113
Arabia	32,28,139	32,90,430
Iraq	1,02,84,069	22,84,267
Iran	6,03,89,560	17,80,86,918
Java	1,95,13,178	12,77,794
Borneo (Dutch) ..	45,42,287	24,199
Thailand	7,57,159	16,839
China	2,82,32,462	6,60,606
Japan	11,77,80,479	2,84,407
Egypt	4,69,40,942	8,11,79,302
Portuguese East Africa ..	1,08,44,211	1,06,87,022
United States of America ..	34,61,08,222	19,00,67,662
Other Foreign Countries ..	85,05,291	1,14,66,360
Total Foreign Countries ..	67,63,89,563	49,12,96,067
Grand Total	1,73,27,01,339	1,10,44,62,618

Value of Indian Merchandise Exported to each principal Foreign Country by sea from British India during the twelve months 1st April to 31st March, 1941-42 and 1942-43.

Countries.	Twelve months 1941-42 Rs.	1st April to 31st March. 1942-43 Rs.
BRITISH EMPIRE:—		
United Kingdom	76,84,98,098	57,34,25,903
Palestine	2,46,58 233	1,97,27,343
Aden and Dependencies ..	2,96,63,041	4,12,46,818
Ceylon	9,76,18,018	14,45,48,030
Burma	11,73,58,499	32,945
Straits Settlements	4,29,75,621	...
Hongkong	1,00,77,954	...
Nigeria	1,64,51,454	2,41,31,914
Union of South Africa ..	5,88,49,218	10,49,38,162
Anglo-Egyptian Sudan ..	1, 33,52,023	2,00,56,254
Mauriting and Dependencies ..	1,19,10,439	1,17,19,504
Zanzibar and Pemba ..	25,55,822	31,58,633
Kenya Colony	3,47,21,072	3,51,54,553
Canada	6,47,14,563	3,77,99,797
Australia	12,31,79 05f	16,12,70,375
New Zealand	1,02,03,918	1,69,86,050
Other British possessions ..	6,17,08,559	6,43,94,795
Total British Empire ..	1,48,94,94,563	1,25,85,91,076
FOREIGN COUNTRIE:—		
U.S.S.R.	71 12,065	86,09,876
Sweden	4,74,115	14,72,209
Spain	8,97,700	...
Switzerland	10,05,847	2,14,469
Turkey, European	20,45,570	1,26,75,646
Jurkey, Asiatic	27,67,544	30,00,285
Syria	72,20,457	2,19,65,420
Arabia	2,15,83,013	4,21,65,249
Iraq	3,25,26,754	7,93,44,695
Iran	1,33,94,935	4,25,69,621
Sumatra	17,12,677	...
Barneo and Java	4,87,21,019	...
Philippines	40,62,347	
China	70,05,726	3,36,857
Japan	2,14,98,191	..
Egypt	4,59,24,548	3,67,23,617
Portuguese East Africa ..	27,19,613	56,78,153
Italian East Africa	71,81,134	94,14,510
U.S.A.	46,59,13,734	27,79,33,581
West Indies	1,91,03,750	1,46,75,731
South America	8.49,57,561	4,20,17,339
Hawaii	53,42,321	3,13,868
Other Foreign Countries ..	2,33,35,892	1,83,08,230
Total Foreign Countries ..	88,62,69,359	61,74,19,873
Grand Total	2,37,87,63,942	1,87,60,10,949

INDIAN FINANCE ANNUAL

(INCORPORATING YEAR-BOOK 1944)

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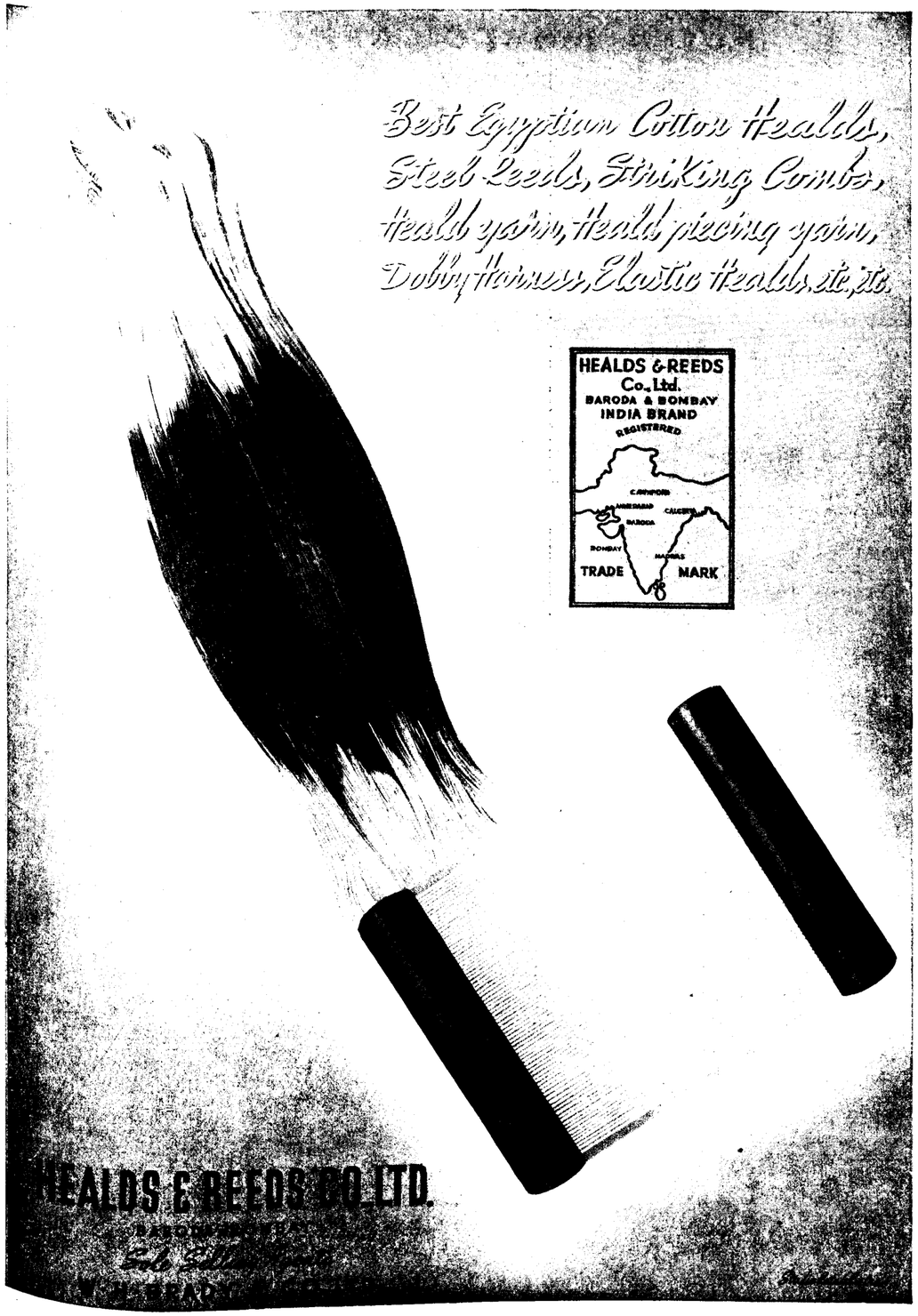
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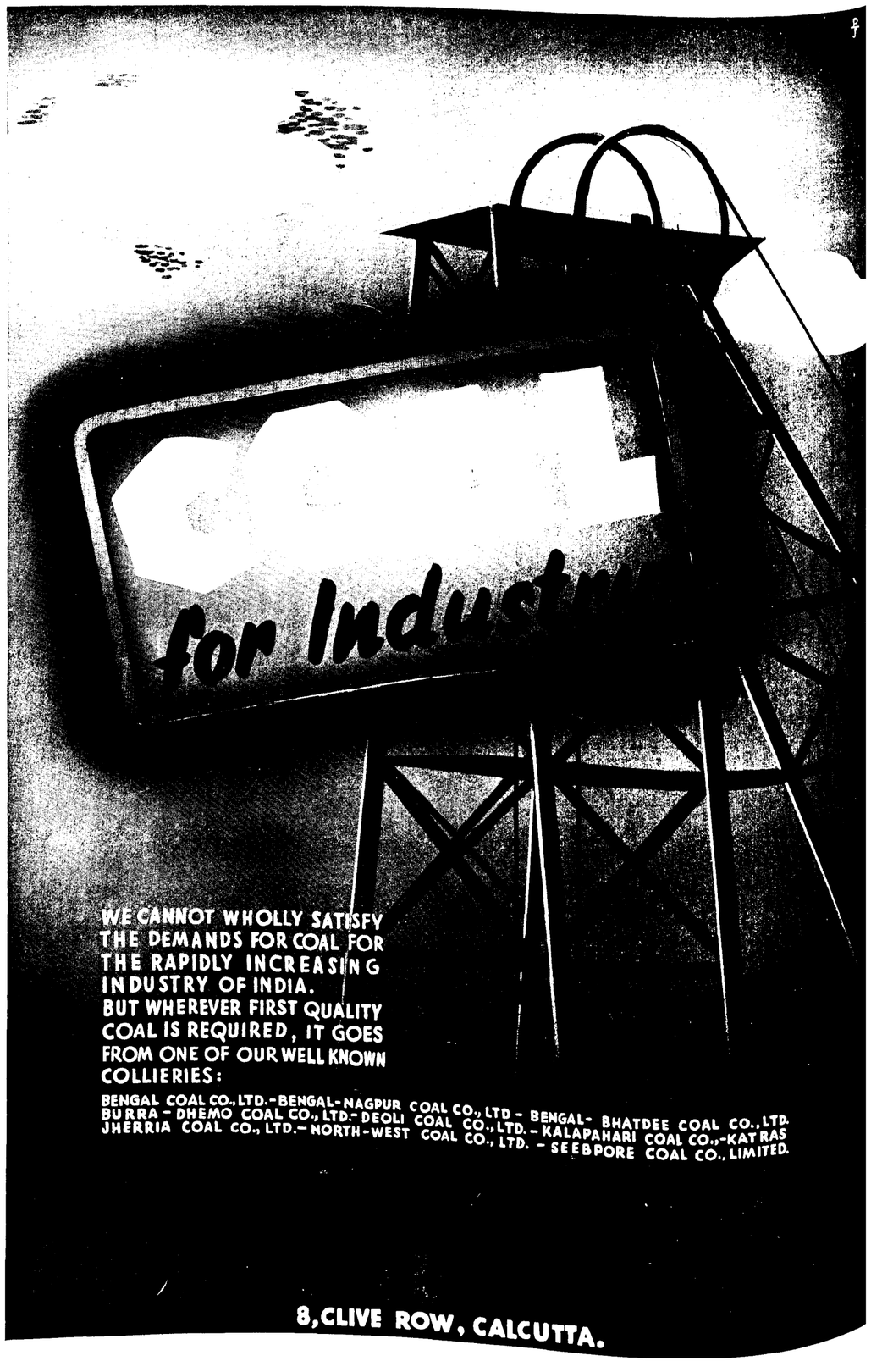
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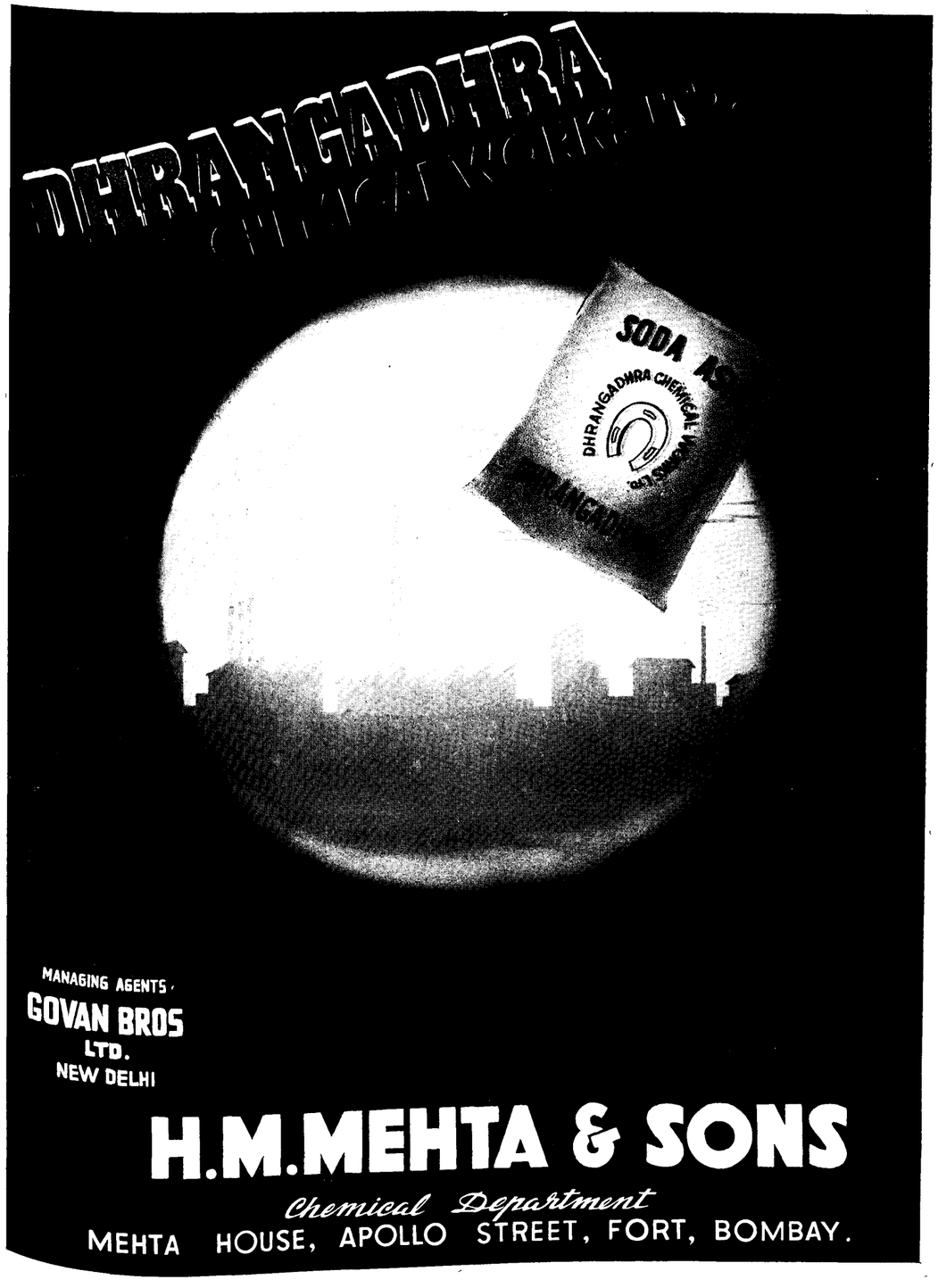
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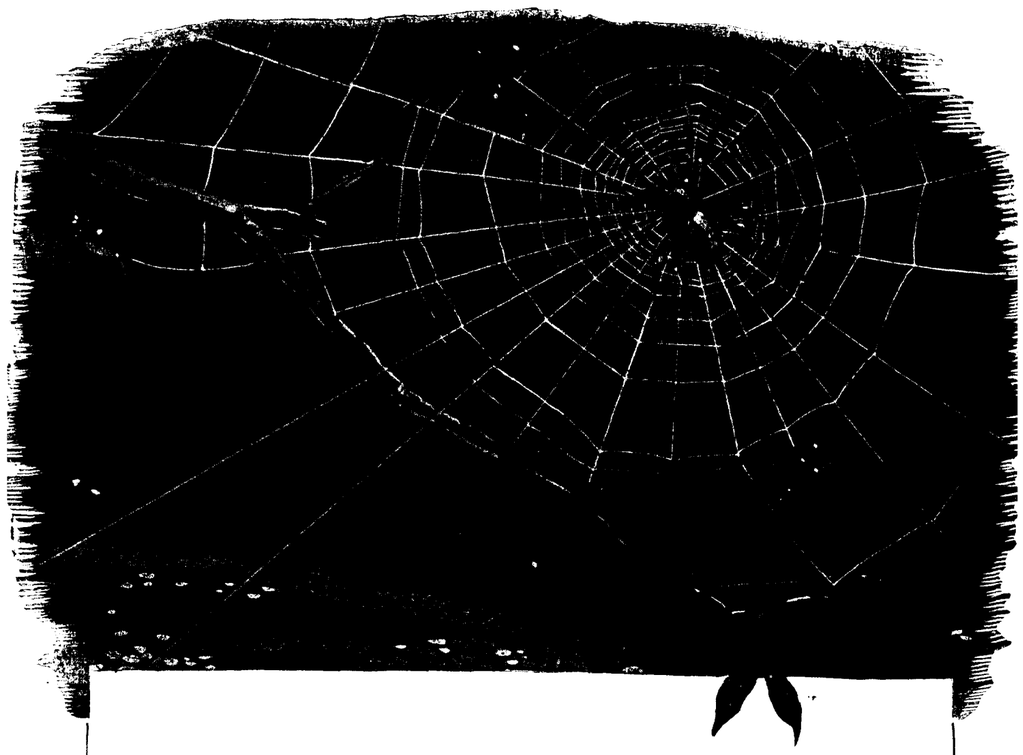
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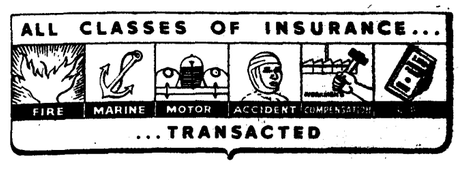
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INCREDIBLE sums of money have been spent by Governments during the past few years in the prosecution of War. Most of what this money has bought is lost for ever, becoming the biggest casualty of this war, and leaving in its wake inflation and high prices.

The exchange-value of money has suffered everywhere; almost every commodity now costs many times its pre-war price; that is why more and more people are putting by their surplus money in **life assurance.** Insurance prices have continued more or less unchanged and will be the least affected by any post-war slump.

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may ask for a wider spread of the allocations under each head. But so far as these subjects are concerned, needs and methods have been mapped out with a fair degree of accuracy. The Sargent Plan for Education, the Kharegat Plan for Agriculture, the Misra Plan for the Railways and, before long, the Bhore Plan for Public Health will form an important part of our overall plan for the future. These plans, while they are different from the Bombay Plan or the Roy Plan in being more closely related to a careful estimate of present positions and future needs, are however, plans evolved at the Centre. How far they are in accordance with the special conditions obtaining in each Province or State is a matter which will have to be gone into in the future. Besides, this method of planning at the Centre, while it is no doubt applicable to the Railways and, to a lesser extent to road transport, cannot work when questions like general industrial development or crop planning are considered. The work that has so far been done at the Centre has therefore to be viewed as a sort of reconnaissance rather than as the beginning of the actual offensive. The latter rests more with the local authorities and it is not till the States and Provinces have carried out their own enquiries in the light of the work done at the Centre and drawn up their own conclusions that the Reconstruction Committee of the Viceroy's Council can attempt to proceed to the next stage.

The Second Report on the Progress of Planning is remarkable for its grasp of this point. Throughout the report, stress is laid on the Provinces and the States doing their part and losing no time in doing it. One of the leading principles stated in the Report for the guidance of the component units is the principle of regionalisation. It is stressed that, when economic development is sought to be achieved by planning, schemes have to be related to the economic and not the political unit. If plans are to be made for, say, groundnuts, the whole of a groundnut growing area has to be taken into account, regardless of whether it is under one or more political jurisdictions. Another principle is what is called that of the "phased" plan. The plans of the future are to have definite phases. The manner in which the States and Provinces will attempt to lay down definite plans for themselves is stated. The appointment of Development Commissioners and special machinery is recommended. And the Report states that, while the appointment of Development Commissioners will not reduce the responsibility of the Departments of the Central Government to push forward with their enquiries, the provincial governments must realise that the formulation of plans is their primary responsibility. What the Central Government can be expected to do by way of providing help or assistance has been definitely stated. The appointment of the Central Power Board shows that the Centre realises the need for a body which, while being ready to provide assistance to the provinces in highly technical matters will continuously study problems and promote action on its own initiative. The position and functions of the Central Electricity Board furnish the best illustration of the relations between the Centre and the Provinces in the matter of planning for the future. It is generally on these lines that mutual help between the Centre and the States and Provinces in the matter of developing schemes and projects is expected to proceed. In the matter of industrialisation especially, the Second Progress Report specifies the help which the Centre will provide for the Provinces.

It will be seen from the above that so far as the progress towards concreteness is concerned, we have arrived at a stage which is both crucial and critical. Since the responsibility for the next few steps rests on a number of disparate local governments, there is danger of the pace being slowed down by uneven progress in the Provinces and States. It is encouraging to note that Sir Ardeshir Dalal has been exerting himself to minimise that danger. He has toured all the provinces and exhorted the governments to make the utmost progress with their plans. It is, therefore, reasonable to hope that these plans will be ready in time for the integration of provincial and state plans to be effected before the end of the war.

Even if this should fail to happen either because of an unexpectedly early end of the war or because of the Provinces being unduly long in their part of the work, there is, in the plans already framed, enough to furnish a sound start in the matter of planned development. These plans, it must be remembered, are not vague guess work, but accurate estimates of the tasks ahead, the costs involved and the ways in which they should be tackled. This is indubitably true of the Sargent Plan for national education. There is careful working out of the details of every aspect of the problem, the training of teachers, the spread of educational institutions and the rate at which their number can be increased. On only one point has the plan to rest on the findings of others, namely, the nature of the predominant industrial activity of each area, on which will depend the nature of the technical education to be afforded in that area. But otherwise the scheme is ready to be put into effect. The same thing may be reasonably presumed of the Bhore Plan to come. The Misra Plan for the Railways is necessarily clear-cut, since it leaves no room for vague statements. And as for the Kharegat Plan, it is really an assembling of a number of schemes in respect of agriculture, which have been shelved in the past.

We may, therefore, turn to a consideration of the development in regard to the financial aspects of post-war planning. It will be remembered that in his budget speech of February, 1944, Sir Jeremy Raisman, the Finance Member of the Government of India, did a great deal to strengthen India's confidence in her ability to finance her post-war development. He threw cold water on the idea of employing "created money" for the financing of the Plan. But when he said that India could raise Rs. 1,000 crores in the first five years of the post-war period the criticism of created money becomes a valuable help. The second Progress Report goes a step further when it says that Rs. 1,000 crores could be found in the first five years, not counting Rs. 500 crores for private investment. While these estimates and forecasts are interesting, it is necessary to see how far the changes of the war period in the realm of Indian finance are helpful to the execution of schemes of post-war development and where they may be expected to create special difficulties.

The experiences of the war period may be examined here from this point of view. Before we go into the details of public finance during the last five years, it may be mentioned that the most notable effect of war finance is to deprive the country of the freedom to spend created money on post-war planning. In fact, this change had occurred to a sufficient extent by the time of the publication of the Bombay Plan that it is surprising that its authors took created money at all into consideration. In any case, the prospect of the Indian note circulation rising to Rs. 1,500 crores by the end of the war, despite measures for the avoidance of inflation such as sales of gold, as distinct from mere anti-inflationary measures, is sufficient to put created money out of serious consideration, till a very late stage of planning when probably it will not

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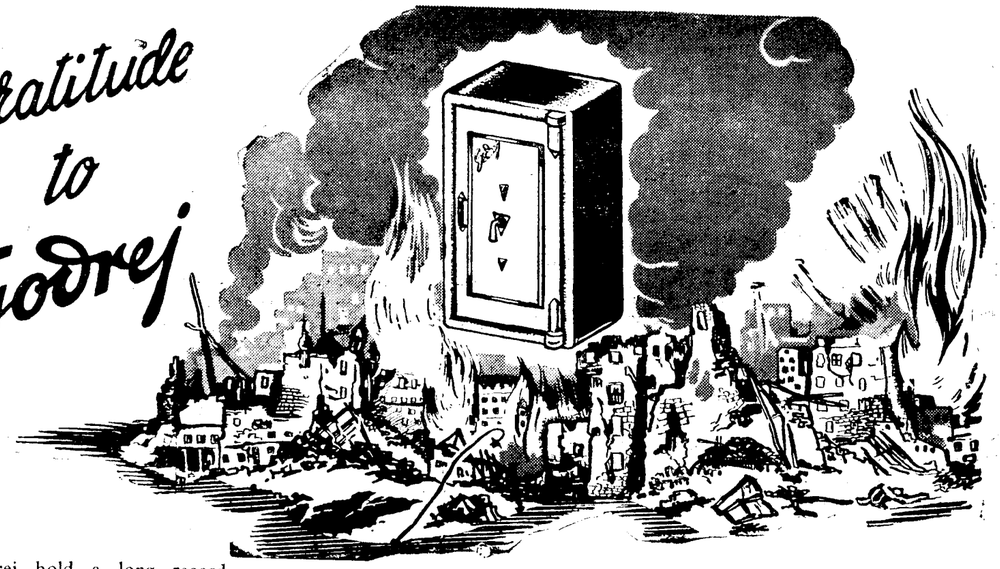
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Although we cannot thank you sufficiently, as a small token of our appreciation we request you to supply to us a similar safe of yours.

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Our safe remained caught for 15 days in the fierce flames of fires which followed the ammunition explosions in Bombay last month. Such fires have never before been heard of in the history of Bombay. It was our great luck that this 28" safe was of your make, and which contained our precious documents, "hundies", bank deposit receipts worth lacs of rupees, etc. When you opened this safe for us, we were delighted beyond words to find that all our precious possessions were quite safe and unscathed inside your safe. Before we had the safe opened by you, we were confident that although our precious possessions were caught in fire of no matter what intensity, they were in the keeping of a safe of your well-known firm so that during that period we were sleeping peacefully in the nights. Accordingly, your safe has protected not only our goods but has also taken care of ourselves. For this we are obliged to you and congratulate you on such unrivalled enterprise, and wish you greater and greater success.

Yours faithfully,
For Tarmohamed Janoo,
(Sd.) RAJAK HAJI HABIB JANOO

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Vishrani Nivas,
Matunga, Bombay, 23th April, 1944.

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We cannot express to you sufficiently our gratitude and we wish your firm ever increasing prosperity in your valuable work.

Yours faithfully,
Per Pro Velji Nappoo,
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be needed. Far from India being able to embark on additions to the note circulation, the adjustment of wartime inflation will have to be accomplished as a necessary preliminary to the inauguration of an economic plan.

It is necessary in this attempt to get to close grips with the problem to see the main principles which should guide the post-war adjustment of wartime inflation. Without going at length into the question, we may briefly enumerate these principles as (1) the acceptance of a note circulation well above the pre-war figure, say, Rs. 500 or 600 crores as the normal for the post-war period, (2) the lowering of the general price level to about forty or fifty per cent over the pre-war level with discrimination in favour of agricultural prices, (3) the inauguration of special measures to increase the internal production of quality foods and certain conventional luxuries, the supplies of which may be less than the possible effective demand therefor. With these guiding principles post-war deflation could be carried out without the fear of production or business activity suffering from the effects of contraction of currency. This will be possible mainly because redundant currency in the country is still very large, in spite of various anti-inflationary measures, and, what is more, they are so many different classes of it that they will not all be affected at the same time or to the same extent by the deflationary measures of the post-war period. For instance, the black money that lies in the safes of individuals will be the last to be drawn into the currency system. The Indian Banking system has succeeded, partly owing to the development of the banking habit and partly owing to the larger scale of money incomes and savings, to command a larger volume of deposits relative to the total circulation. There are thus buffers against deflation, which, while they may not defeat the attempt to lower prices, will save business from being adversely affected by deflation. In the matter of profit margins also, the existence of controlled prices which unquestionably leave wide margins of profit for the producers but which are far below the level of unregulated prices, will smooth the transition from the present high price level to the level of 40 or 50 per cent over the pre-war level.

The necessity to abandon the idea of created money for some time and even to embark on a deflationary policy may be said to complicate the problem of financing the plan. It may be said that, though deflation may be prevented from affecting production, deflation cannot but affect profits; and in so far as public revenues are dependent on profits and money incomes, the ability of the State to finance planning may be seriously curtailed. This circumstance may in this view be said to alter the somewhat optimistic forecasts which were made immediately after the publication of the Bombay Plan. It is fortunate that Sir Jeremy Raisman has dealt at some length with this question in his last budget speech and done his best to dispel such fears. On the question of the relation between the level of prices and tax revenue, Sir Jeremy observed:

> The revenue depends, in the last resort, on the rate of tax and the national income. The national income, in its turn, is determined by the level of prices and the scale of economic activity. If then, to fulfil the programme of development, India will require a level of expenditure much more closely related to its present than its pre-war scale, a great deal must necessarily turn upon the future price-level and the future level of economic activity. Both these must be taken into account.
>
> When the productive power of the nation is turned from manufacturing for war to manufacturing for civilian use there will be a larger supply of goods available and this additional supply must result, in my judgment, in lower prices for those goods. But if simultaneously the total volume of activity deployed during the war can be maintained and increased, the total national income can be maintained and even increased in spite of a fall in unit-prices. It is the maintenance of the aggregate national income in terms of money and not the stabilisation of prices of individual commodities that should be the objective in the years after the war.

That the total national income can be maintained and even increased in spite of a fall in unit prices is the most relevant fact in this context. If the national income in terms of money is maintained at the same level in spite of the fall in prices, then it means an increase in real income; and public expenditure on the present scale can be borne more easily by the tax-payer. Expenditure on peacetime projects will take the place of that part of the war expenditure which is being met from current revenue. The other part which makes for an addition to the unproductive debt may or may not have a counterpart in peace time. But if there should be any, that is, if expenditure on planning should lead in the post-war years to an uncovered deficit, such deficit will not be an unproductive debt in the sense that wartime deficits can be said to be. The question whether nation-building should or should not be financed by additions to the public debt is not of practical importance, since nation-building expenditure will have to be incurred in the immediate post-war years, when further deficits will be generally deemed to be out of the question. Such a course will be necessary only if the post-war revenue position will leave the country no other alternative.

An analysis of the course of public revenue in the Centre and in the Provinces during the present war period will show that no considerable shrinkage of public revenue need be feared. Taking first the case of the Government of India, the following table is of interest as showing the change in the principal revenue heads.

In Lakhs of Rupees

Year	Revenue from Customs	Revenue from Central Excise duties	Revenue from taxes on Income including Corporation tax	Revenue from Salt	Other Tax Revenue	Total net Tax Revenue	Net Revenue from Commercial departments	Opium receipts (less expenditure)	Currency and Mint (receipt less expenditure)	Interest receipts	Other Revenue	Total net Revenue
1932-33 ..		51,95	17,97	10,07	94	76,74	—45	6	1,65	1,88	2,94	82,82
1933-34 ...	...	47,16	17,13	8,86	90	69,66	—56	88	74	1,63	2,72	75,07
1934-35 ...	..	52,67	17,55	8,00	1,05	74,57	33	37	75	2,01	2,72	80,75
1935-36 ...	...	52,25	17,07	8,43	89	73,71	— 4	27	75	87	2,73	78,29
1936-37 ...	..	51,45	15,34	8,81	82	71,19	— 1	19	81	40	3,12	75,70
1937-38 ...	...	43,11	7,66	14,58	8,39	81	69,85	3,25	26	38	59	2,93	73,26
1938-39 ...	...	40,51	8,66	15,78	8,12	83	68,59	1,47	25	22	74	3,16	74,43
1939-40 ...	..	45,88	6,52	16,58	10,86	83	75,66	5,14	23	88	76	3,00	85,67
1940-41 ..	..	37,30	9,49	21,77	7,67	91	72,16	13,34	24	96	79	3,38	97,99
1941-42 ..	..	37,89	13,15	36,67	9,20	1,01	91,89	23,50	41	2,17	67	3,44	123,54
1942-43 ..	..	25,12	12,75	74,86	10,91	1,21	119,10	24,58	26	3,50	86	4,06	164,74
1943-44 ..	...	26,20	27,42	109,64	8,34	1,66	167,22	46,61	— 2	7,70	1,62	4,29	238,56
1944-45 (Budget) ..	..	28,00	46,90	158,81	9,25	1,47	231,43	42,42	—45	7,65	1,45	3,69	293,90
1944-45 (Revised) ...		40,00	39,07	183,44	9,30	1,83	265,20	41,23	— 6	10,35	1,74	5,02	340,02
1945-46 (Budget) ...		55,25	48,59	167 21	9,30	1,83	273,99	43,78	—36	10,57	1,44	4,74	345,27
Percentage of income in 1945-46 over prewar year. ...		36.39	461.01	959,63	14.53	120.48	299.46	2878.25	...	4701.54	94.59	50.0	364 83

A scrutiny of the above table will show the extent to which old sources have expanded and new sources have been fruitful. Prima facie the expansion of old revenue heads such as income-tax and contributions of commercial departments must be attributed to abnormal war expenditure and must, on that account, be held to be more or less insecure. But this conclusion must be more carefully examined. It is well to note in the first place the expansion of indirect taxation. While in the early 'thirties, customs and excises together yielded about Rs. 52 crores, customs revenue alone stands in the budget estimates for 1945-46 at Rs. 55.25 crores. The whole of the excise revenue of about 48 crores must therefore be deemed to be new revenue for the post-war period compared to the pre-war period. Neither customs nor excise can possibly show a deterioration after the war, unless some unforeseen catastrophe occurs. Even if imports of consumer's goods should be reduced, the cut will be more than made up by imports of producer's goods, so that the chances are for an increase rather than a decrease in customs revenue. Likewise, excises should yield more, since not only the list of excised articles may expand but the production of articles now excised must also be increased as a result of post-war development.

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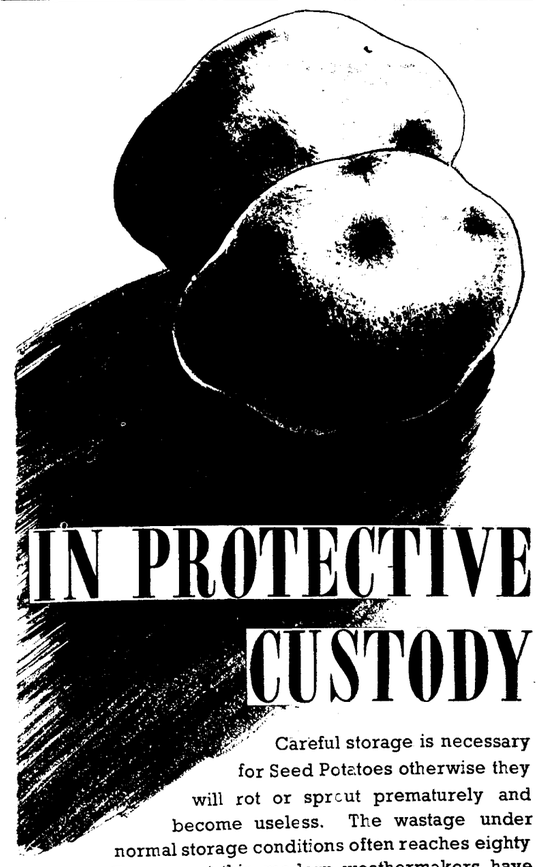
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Of the other important items, no similar or equally confident statements can be made. There is first of all, the Rs. 12 crores of currency profits of which Rs. 10 crores have been handed by the Reserve Bank to the Government of India and the balance is in the main profits on coinage. Clearly, the profit is attributable to the rate of currency expansion: and in so far as a deflationary policy is unavoidable in the post-war years, currency profits must fall to the old normal of about a crore. Closely related to inflation is also the yield on income-tax, corporation tax and E.P.T. The last mentioned is so dependent on war expenditure that there seems to be little chance of its being maintained at the present level after the end of the war. The Finance Member has however suggested that the principle of taxing profits in excess of a given standard is as much applicable to peacetime as to the war period. If the enormous public works expenditure of the post-war period should lead to profits on a large scale, they may be legitimately regarded as liable to a peace time E.P.T.; and this source of Central revenues may not wholly run dry. But exaggerated ideas about the yield of such E.P.T. would however be palpably absurd; and it would be idle to estimate the amounts that we may expect to realise from this source. But income-tax and corporation tax are on a clearly different footing. Here not only will the scale of profits be bigger, but we may expect a very large increase in the lower and medium income groups. The expansion of salaried employment, Government and private, and the increase in private business may lead to a steady increase in the yield of income-tax and corporation tax. This increase may, over a period, make good a large part of the E.P.T. that will be lost during the post-war period.

As for the commercial departments which now yield as much as Rs. 43 crores, we have to see in the first place how far the Railways will continue to enjoy their present prosperity and secondly whether, even if such prosperity were possible, the benefits of that prosperity should be passed on to the Central Ex-chequer or to the traffic. Practically speaking, the answer to the second question, when it does arise in this form may be anticipated. In a period of all-out, almost totalitarian, planning there is bound to be a general bias in favour of increasing the volume of revenue rather than frittering away resources, by affording relief to traffic. The ways in which such relief adds to productive capacity and actual production will be so difficult to detect that one might even characterise the policy of relief to traffic as a kind of national self-indulgence. After all, the question whether the favourable position of the Railways should lead to a realisation of large surpluses of Central revenues or to a progressive reduction of rates and fares is in the last resort a problem of distribution: and in the context in which the problem is one of increasing production, the decision must be in favour of realising the surplus and spending it on the most fertile fields of public expenditure. Whether however such surpluses will be possible will depend on the extent to which post-war development will be able to replace the enormous war expenditure which is the basis of the present prosperity of the Indian Railways. Here it is not wishful thinking or undue optimism to believe that post-war business activity and the movement of goods will be sufficient to maintain a high level of prosperity for the Railways, though it may well be far below the artificial prosperity of the present time. But essentially the conditions of the post-war period, if planning should be adopted on an extensive scale, will in a sense be similar to the conditions of to-day. While the traffic on the Railways on account of private business will, no doubt, be much larger than at the present time and will be well over the levels of the pre-war period, a great deal of Railway revenue will be derived as at present from the expenditure incurred by the Central Government on large peacetime projects. Considering the various factors involved, it would appear that the Railways may not be able to maintain the present contribution of Rs. 32 crores per annum. The Railway contribution to the Central revenues may be well over half that figure. As for the posts and telegraphs the profits on this department may not only be maintained, but may be improved upon during the post-war years. Since the last six years have been a period of arrested development and the people have become more used to telegrams and telephones, the latter even over long distances, the gap in the profits of the Commercial Departments between now and the post-war period will in all probability be filled by the Central Government taking on more commercial enterprises purely for the sake of realising more revenue for developmental purposes.

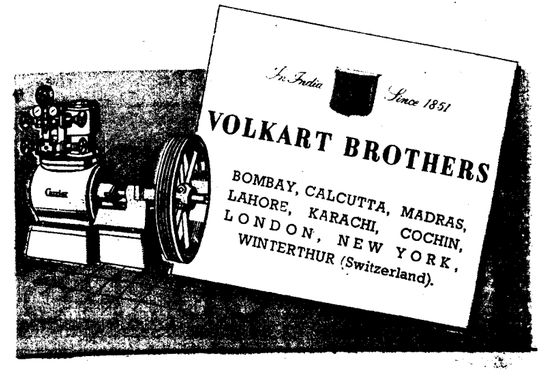
In his last budget speech Sir Jeremy Raisman has referred pointedly to such state enterprises. He even complained that in India too little thought has been given to this question of augmenting State revenue by the creation of more State



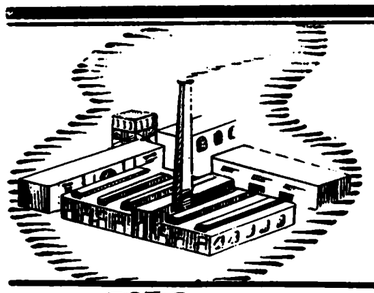
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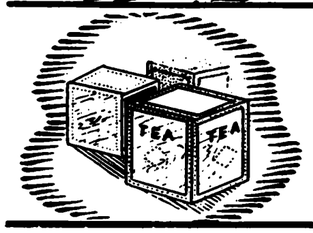


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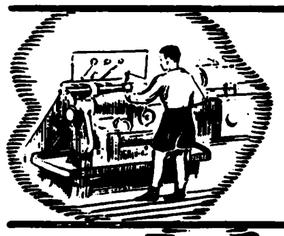


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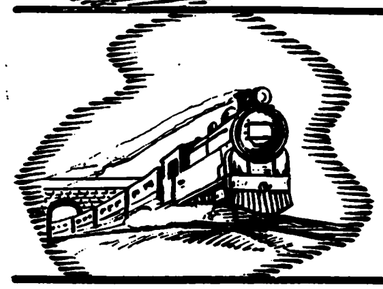




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monopolies. This is hardly strange since nationalisation in India has not been thought of in this country in terms of any definite proposal. It was adopted in the case of the Railways merely by reason of the fact that the Indian Railways were built by foreign capital on onerous terms. Since the aim was to get rid of foreign ownership and domination, the acquisition and of management of the Railways by the State was so obvious a course that no alternative was thought of. Likewise, in posts and telegraphs there was not in India, as there was in the United States, any considerable body of private entrepreneurs ready to operate the communication system as units of private enterprise. It is only recently that nationalisation has been freely talked of, and that by extreme leftists, who can claim little or no influence. In matters of social ideology, India has no doubt been subjected to quick changes and the business classes are changing even more rapily than either the bulk of public opinion or their compeers in other lands. Whether the more extreme forms of industrial and social organisations will be adopted in India, it is difficult to say. Perhaps, pre-occupation with the more strenuous parts of the economic plans of the future will divert public attention from the question of ownership of established industries to the question of building new ones. But the proposal to add to the list of State commercial enterprises with a view to increasing the public revenue for expenditure on economic planning stands on altogether different footing. It is ideologically neutral; and its fate will depend on the success with which concrete scheme can be formulated. In this respect, it is well to remember that many continental nations wisely employ one or two State monopolies as a certain source of revenue to the State. The manufacture of cigarettes, matches and such other articles was a State monopoly in more than one country before the war and there is no reason why India should not follow the same course. The imposition of a tax on tobacco and the creation of the organisation necessary for its collection seem to come handy for the State taking on the manufacture of certain types of cigarettes in the near future.

We may now attempt to draw a picture of the finances of the Centre during the years immediately following the present war period. We may note in the first instance that the total net revenue of the Central Government stood at Rs 78.49 crores in 1938-39 and has from this level risen to Rs. 242.85 crores for the year 1943-44 (actuals) and to Rs. 350.71 crores in the budget estimate for 1945-46. Of this increase of Rs. 272.22 crores more than Rs. 150 crores have been accounted for by the increase in revenues from taxes and income, and over Rs. 42 crores by the revenue from the commercial departments and about Rs. 50 crores from the revenue on indirect taxation, Rs. 12 crores from currency profits. Of these items, it seems safe to assume that currency profits might disappear, that increase in the contributions of commercial departments and in the taxes on income might be halved and that the revenue from indirect taxation, far from suffering a shrinkage, might tend to expand.

Calculating very roughly, it may be ventured that the increase in Central revenues in the post-war period over those of the pre-war years might not amount as much as Rs. 120 crores per annum. We may now turn to the state of Provincial finances. Though this is no surer ground to tread on than the finances of the Centre, certain features of Provincial finances in the post-war period seem to emerge clearly to view out of a close scrutiny of the budgets of the Provinces during the years of the war. One may record at the outset the fact that already the Provinces have accumulated in all a sum of Rs. 60 crores for purposes of post-war reconstruction. This amount is for all practical purposes the net surplus of realised revenue over expenditure incurred.

Madras comes first with revenue reserves amounting to as much as Rs. 25 crores.

The U. P. comes as a distant second with a sum of Rs. 14 crores. Bombay and the Punjab have about Rs. 7 crores each, while C. P. and Sind have about Rs. 3 crores each. In the case of Sind, Government trading in grain accounts for the sudden prosperity of Provincial finances.

Taking the composite picture of Provincial finances as a whole, the main feature is the increase in total revenue from Rs. 84.74 crores in 1938-39 to about Rs. 185 crores in the budget estimates for 1945-46. Expenditure has no doubt had a roughly corresponding increase. Expenditure, in the case of some provinces covers hidden reserves; and it is possible that, if the war comes to an earlier end than expected, expenditure may show a decline. The important point, however, is that, while in the case of the Centre increase in revenue has been offset by increase in expenditure to the point of large additions to Central revenue, in the case of the Provinces, it has left handsome surpluses in the majority of cases. The main avenues of increased expenditure are civil defence, increase in salaries and establishment and dearness allowances. From the point of view of funds for post-war development, it is necessary to see the possible trends of revenue and expenditure in the years following the war. On the expenditure side, a large part of the increase in salaries and establishments dating from before the war must be deemed to have come to stay, since there is no reason to think that prices will come down sufficiently to justify a return to the old scales of pay. Expenditure on civil defence is obviously a case of expenditure peculiar to war time; and in so far as some Provinces have already reduced the appropriation in this regard, some savings have already accrued. Expenditure on civil supplies in respect of procurement and distribution, rationed or other, may well continue after the war till it becomes part of the expenditure on the controls of the planned regime.

On the revenue side, out of a total increase of nearly Rs. 100 crores over 1938-39, over Rs. 20 crores is accounted for by the increase in the Provincial share of the income-tax. In fact, there was a time when, owing to the Railways incurring a loss, the Provinces got nothing by way of their share of the income-tax. While, therefore, income-tax is an important contributory to Provincial revenues, the bulk of the increase must be attributed to factors which are peculiar to each Province. Though Provincial autonomy was short-lived in the majority of Provinces, popular ministries have been successful in that they added to the Provincial financial system taxes which have a fair degree of elasticity. In the case of Bengal, the general financial position even before the war required the introduction of measures of new taxation. The entertainment tax, the electricity tax, a fixed tax on incomes, these were introduced in the very first year of the new regime. And under pressure of large scale expenditure on famine relief, agricultural income-tax and sales-tax have been added. In Madras, the sales-tax has proved to be a genuinely elastic source of revenue capable of significant expansion during the war period. Indeed, the sales-tax has been so eminently suitable that the proposal to apply it uniformly to all Provinces and collect it centrally for the benefit of the Provinces has been put forward by Sir Jeremy Raisman. There is no doubt that with the addition of these new taxes the inelasticity of Provincial revenues has been very considerably reduced. In fact, it is certain that even during the present war period they would not have increased to the extent they have done, but for these taxes having been introduced before the war or at an early stage of it. If the general increase in money incomes and in prices could have brought about this expansion of Provincial revenues, we may well imagine that in the conditions of steadily increasing general prosperity, which the economic planning of the future may be depended upon to create, the ability of the Provinces to take their share of public expenditure will also show a steady increase. With the introduction of death duties at the Centre for the benefit of the Provinces, the amounts that Provincial Governments will have at their command will be vastly greater than the most optimistic of us would have supposed a few years ago.

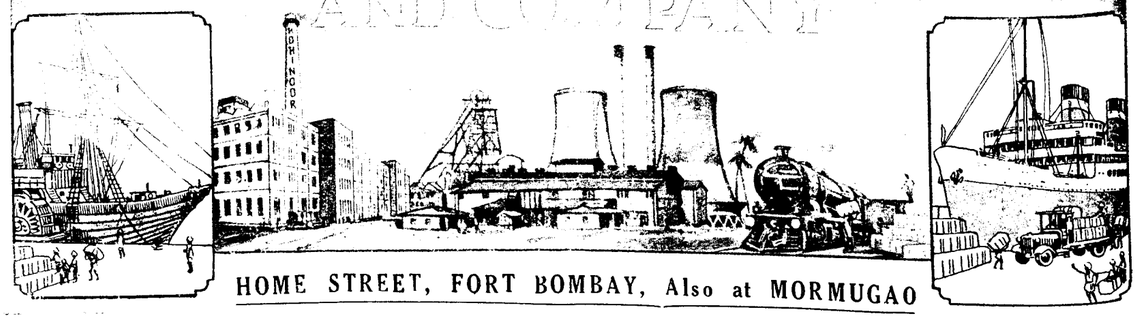
If no time is lost in replacing wartime inflation with peacetime development, then revenue is bound to be maintained, while expenditure will reveal under careful scrutiny good scope for economy. Since even in the present conditions a surplus of Rs. 60 crores has been gathered together in about three or four years, it would be reasonable to assume that in the first five years of the Plan to come the Provincial Governments will have, even on the basis of the present taxation, about Rs. 150 crores or Rs. 30 crores a year.

It has been pointed out already that from revenue alone the Government of India will be able, in the conditions of the post-war period to find as much as Rs. 600 crores in the first five years. We have now to add to this the Rs. 60 crores of Provincial reserves and the Rs. 150 crores which Provincial Governments may be able to find from their own revenues. The financial outlook of economic planning would thus appear to be far brighter than even Sir Jeremy Raisman dared to think a year ago.

It is also necessary in the context of this survey of public finance in India in relation to post-war period to give some indication of the trends in the Indian States as well. It is only to be expected that State finances should be subjected to the same forces and exhibit the same trend as the British Indian Provinces. Revenues have expanded owing to the general increase in prices and there have also been cases of States being profited by orders on war account for supply. But while revenues have risen, State Governments have been as reluctant as Provincial Governments to embark on new expenditure. Since new schemes are best begun as part of a comprehensive economic plan, the States have also succeeded in putting by comparatively large amounts for purposes of post-war reconstruction. Hyderabad alone has a fund of Rs. 25 crores for postwar reconstruction.

It will be seen from this survey of public finance in India at the Centre and in the Provinces and States that there is little reason to fear that planned development in the postwar period will be held up by lack of funds. Indeed, our analysis shows that by far a larger part of the Rs. 1,000 crores mentioned by Sir Jeremy Raisman and the Second Report of the Reconstruction Committee will be found from public revenue rather than from borrowings of the various Governments. When so

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arge an amount as Rs. 750 crores are obtained from taxation, stands to reason that the savings available for investments, whether through loans to Government or directly in industry nd agriculture, must be very much more. In Sir Jeremy laisman's forecasts he indicated that Rs. 1,000 crores would be ound by the Government by taxation and new borrowings eaving about Rs 500 crores for private investment. These gures would now seem to call for alteration. But obviously, new nvestment cannot be maintained unless savings are effected n an adequate scale. The authors of the Bombay Plan have ssumed savings at the rate of 5 per cent of the national ncome. While 5 per cent may not be too onerous, it is necessary o remember that, thanks to heavy taxation and to the inci- ence particularly of death duties, the savings of the upper lasses may not be maintained in the future at the same rate s in the past. Since a fair rate of savings is the sheet anchor f any scheme of economic planning, it would seem risky to eave the volume of savings to the moods and caprices of a eople that is yet to learn the value of thrift and the dangers f its traditional improvidence. From this point of view, chemes designed to ensure a fair rate of savings in all classes f the population would seem to be necessary. Apart from heir value to the progress of the plan, savings have also mportance as a necessary discipline for the lower classes, which till now have been utter strangers to all notions of rdered expenditure. The trend in foreign countries has been or national savings to derive an increasingly larger contribu- ion from the savings of the working classes collected by such nstitutions as Insurance Companies Building-Societies and the ike. It would be necessary for the State to evolve and to work out schemes of insurance which are applicable to all lasses of the population and which in their actual working will enable large savings to be made on an institutional and ollective basis.

It is to be hoped that this position of India's public finance will be widely appreciated and that the various agencies, which are in charge of formulating practical plans in the postwar period, will tackle their tasks in greater confidence than hither- o that the Central and the Provincial Governments have the ways and means for their execution. Till now planning com- mittees have been inclined to shirk the whole question of means and to concentrate their attention exclusively on our needs in the broad spheres allotted to them for enquiry. Such plans as have been formulated already have been prepared more with a view to indicate the dimensions of the problem and the progress we can expect to make in solving them, than with a view to put forward a concrete plan which lends itself to immediate adoption. It seems now that the stage has been reached when attention may be concentrated on the drawing up of a concrete programme for the initial stages of the plan than for the more impressive and spectacular projects of its later stages. It is not stressed as much as it should be that, placed as we are now, we must make a clear and effective distinction between what we may call the preliminaries of planning and planning as such. The public is sceptical of reconstruction reports which are made by in large part of surveys of existing conditions and statements of vague principles and a recital of figures which on the face of them are lacking in relation to the realities of our national life. While the public knows that schemes embodying numerous provisions of a detailed kind and containing huge appropriations for particular projects have little practical value so long as the means of accomplishing them are not in sight, it is generally impatient for the publication of reports which shift the emphasis to blue prints and targets. Strictly speaking, the blueprints and targets of the later stages are comparatively easy to formulate and even to achieve, if the interior stages of preparing for planning have been carried out on a sound basis. In no other context is the saying, "well begun is half-done", half as true as in economic planning in Indian conditions. Nearly every aspect of planning in the later stages would be easy, if the basis of the national economy has been rendered sound and the country as a whole has begun to derive the benefits of the growing momentum of economic progress. But neither such progress nor such momentum could be had so long as the basis of the national economy, comprising productivity of land the education and training of the people in productive work and their habits of wise-spending and saving, is fundamentally unsound. There is also the need so to increase their distribution. The creation of wide-spread employment, the volume of production of the basic necessaries of life and the accumulated savings of the people, their quickened economic conscience and receptivity to new ideas and opportunities of profitable production here will by themselves ensure further increase, in the national wealth. Now that the various Governmental authorities are now in a position to make considerable outlays on planning, no time should be lost in making concrete and co-ordinated plans for immediate adoption by representative Governments at the Centre and at the Provinces without waiting for the formal end of the war.

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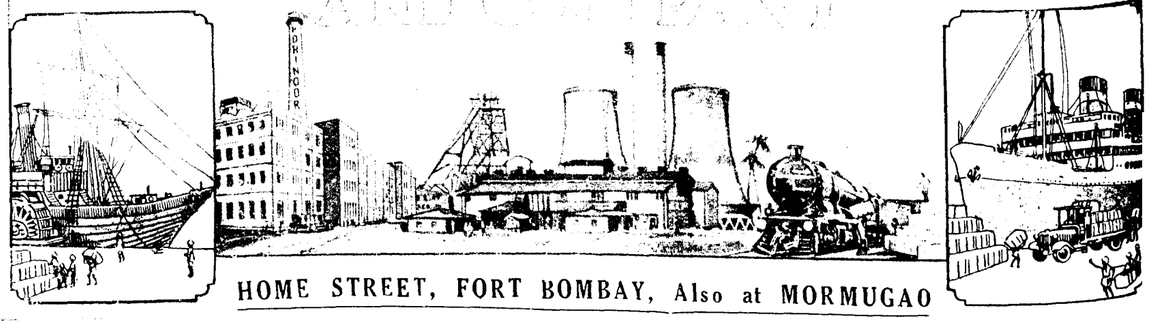
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large an amount as Rs. 750 crores are obtained from taxation, it stands to reason that the savings available for investments, whether through loans to Government or directly in industry and agriculture, must be very much more. In Sir Jeremy Raisman's forecasts he indicated that Rs. 1,000 crores would be found by the Government by taxation and new borrowings leaving about Rs 500 crores for private investment. These figures would now seem to call for alteration. But obviously, new investment cannot be maintained unless savings are effected on an adequate scale. The authors of the Bombay Plan have assumed savings at the rate of 5 per cent of the national income. While 5 per cent may not be too onerous, it is necessary to remember that, thanks to heavy taxation and to the incidence particularly of death duties, the savings of the upper classes may not be maintained in the future at the same rate as in the past. Since a fair rate of savings is the sheet anchor of any scheme of economic planning, it would seem risky to leave the volume of savings to the moods and caprices of a people that is yet to learn the value of thrift and the dangers of its traditional improvidence. From this point of view, schemes designed to ensure a fair rate of savings in all classes of the population would seem to be necessary. Apart from their value to the progress of the plan, savings have also importance as a necessary discipline for the lower classes, which till now have been utter strangers to all notions of ordered expenditure. The trend in foreign countries has been for national savings to derive an increasingly larger contribution from the savings of the working classes collected by such institutions as Insurance Companies Building-Societies and the like. It would be necessary for the State to evolve and to work out schemes of insurance which are applicable to all classes of the population and which in their actual working will enable large savings to be made on an institutional and collective basis.

It is to be hoped that this position of India's public finance will be widely appreciated and that the various agencies, which are in charge of formulating practical plans in the postwar period, will tackle their tasks in greater confidence than hitherto that the Central and the Provincial Governments have the ways and means for their execution. Till now planning committees have been inclined to shirk the whole question of means and to concentrate their attention exclusively on our needs in the broad spheres allotted to them for enquiry. Such plans as have been formulated already have been prepared more with a view to indicate the dimensions of the problem and the progress we can expect to make in solving them, than with a view to put forward a concrete plan which lends itself to immediate adoption. It seems now that the stage has been reached when attention may be concentrated on the drawing up of a concrete programme for the initial stages of the plan than for the more impressive and spectacular projects of its later stages. It is not stressed as much as it should be that, placed as we are now, we must make a clear and effective distinction between what we may call the preliminaries of planning and planning as such. The public is sceptical of reconstruction reports which are made by in large part of surveys of existing conditions and statements of vague principles and a recital of figures which on the face of them are lacking in relation to the realities of our national life. While the public knows that schemes embodying numerous provisions of a detailed kind and containing huge appropriations for particular projects have little practical value so long as the means of accomplishing them are not in sight, it is generally impatient for the publication of reports which shift the emphasis to blue prints and targets. Strictly speaking, the blueprints and targets of the later stages are comparatively easy to formulate and even to achieve, if the interior stages of preparing for planning have been carried out on a sound basis. In no other context is the saying, "well begun is half-done", half as true as in economic planning in Indian conditions. Nearly every aspect of planning in the later stages would be easy, if the basis of the national economy has been rendered sound and the country as a whole has begun to derive the benefits of the growing momentum of economic progress. But neither such progress nor such momentum could be had so long as the basis of the national economy, comprising productivity of land the education and training of the people in productive work and their habits of wise-spending and saving, is fundamentally unsound. There is also the need so to increase their distribution. The creation of wide-spread employment, the volume of production of the basic necessaries of life and the accumulated savings of the people, their quickened economic conscience and receptivity to new ideas and opportunities of profitable production here will by themselves ensure further increase, in the national wealth. Now that the various Governmental authorities are now in a position to make considerable outlays on planning, no time should be lost in making concrete and co-ordinated plans for immediate adoption by representative Governments at the Centre and at the Provinces without waiting for the formal end of the war.

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REVIEW OF WAR TIME FINANCE

While every feature of India's finance during the present war period has occasioned bitter controversy it is also true that the six years and more of war finance will ultimately prove to have wrought the transition from the pre-war to the post-war system of public finance in this country. The importance of this transition cannot be appreciated unless it is remembered how vast is the change from the one to the other. The pre-war budget was a mere subsistence budget, one which enabled the state in India to do no more for the country and the citizen than the protection of life and property. Indeed even this negative function of Government can be said to have been performed with dubious efficiency, since India was defenceless against the advance of the Japs and security was obtained only with large scale American and British help. The post-war budget on the other hand, will be in every sense a development budget, one that will enable the State to discharge many of the functions of an advanced modern Government to the average citizen. This change is easily accomplished if there were forces sufficiently strong to bring about in this backward country a vast expansion of productive activity and national income and therefore of taxable capacity and public revenue and expenditure. Such forces have not only been absent; but their emergence is impossible in the normal conditions of life in this country. For increase in production is impossible without increase in productive capacity; and this in turn could be created only by large scale public expenditure directed to education, public health, communication and specific economic projects. India was thus caught in a vicious circle which she was powerless to break. The ultimate effect of wartime finance may, it is possible to hope, prove to be that this vicious circle has been broken at last, though only at great cost and though special efforts may be needed to prevent the vicious circle closing in on the nation again.

A review of war finances, such as is attempted here has therefore to be devoted to (1) a delienation of the financial measures during the war period (2) an estimate of what these measures have cost to the people and (3) what the system of public finance that has grown up during these years means to the future and the period of economic planning that is ahead of us.

Taking first the measures that were adopted during the war period, it is perhaps necessary to emphasise at the outset that the system grew from time to time and it would not be correct to talk of it as if it had been pre-planned both in its basic principles and in its details. But if we take our stand towards the close of the war, it is possible to deduce the main principles. At quite an early stage of the war the question of the allocation of military expenditure between the Government of India and His Majesty's Government was settled; and the terms were embodied in what has since been known as the Financial Settlement. This settlement recognised the division of war expenditure incurred by India into three classes (1) expenditure for the defence of India (2) expenditure for the defence of the Empire and (3) expenditure incurred in the common interest. It was agreed that in regard to the third class, namely, common interests, allocation should be made on an agreed basis and, in the event of agreement being found difficult to achieve on a fifty-fifty basis. There are many important points of detail in this agreement as, for instance, the cost of training of troops, which are taken for service outside the Empire and similar matters. It is not possible to go into detail on these points. Suffice it to say that the agreement has served to keep the burden of military expenditure within limits and has prevented a number of disputes laid up for settlement at some date in the future as during the last war. If one might judge by results, it is a significant point that military expenditure rose very considerably only during the last two years and more, that is, after the Japanese war came near to our frontiers. In fact, the trend of war expenditure charged to Indian revenues and the hectic rise in our sterling securities have led many sections of the British public to contend that the Financial unsettlement has worked very unfairly to Britain and that the liquidation of India's sterling loans and the acquisition of sterling balances by this country are due to an unwise generosity on the part of Great Britain. Be that as it may, the Financial Settlement has served as a sure basis for the Government of India incurring war expenditure both on its own account and on behalf of Britain. It is necessary to remember that Britain placed orders in India on behalf of her allies as well. She also acted as intermediary up to a point in the transactions between America and India. Direct lend-lease relation between the two countries came at a comparatively late stage and the increase in the defence budget in the last two or three years is to be attributed in part to the provision of reverse lease-lend by the Government of India.

But, the general responsibility for the financing of Allied war expenditure in India have all along been borne by the Government of India. This responsibility has been discharged on the basis that the Government of India pays for all war expenditure by means of new paper currency created on the strength of the additions to sterling securities resulting from the payments made to the credit of the Government of India in London in sterling. On this basis no scale of war expenditure is too big for the Allies to incur or for the Government of India to finance The concrete results of this policy are the twin problems of inflation at home and increasing sterling balances in London. Sterling balances have led to bitterness in Britain while inflation has caused suffering among the Indian masses. The solution of these two problems will naturally have to be spread over a period even after the end of the war. The measures that have been adopted in respect of sterling securities are firstly the repatriation of India's sterling debt and the creation of a small Dollar Fund. Sale of gold belonging to the Allies has also been resorted to though not on a sufficiently large scale to prevent increases in sterling security and note circulation. So that the financing of Allied war expenditure continues to be done in the main by means of payment in London sterling and new paper currency in India.

As regards inflation, a direct solution of the problem is rendered impossible by what has been described in the last paragraph. The position of the Government of India is frankly one of giving free reins to inflation and then tugging its tail. The Government of India makes no secret of the fact that its concern is not to fight inflation but to fight the effects of inflation. The anti-inflationary measures form, indeed, a wide range. Besides price control, which is the most obvious and direct form, these are measures of new taxation and of encouraging and absorbing on as large a scale as possible the savings of the people. There are also methods of compulsory saving and lending as in the case of the deposit of excess profits and the share money of new floatations which cannot set to work during the war period. The success of the anti-inflationary measures cannot be accurately gauged. But while it is true on the one hand that there are large pockets of redundant or black money in the country, it is also true that price control has had a far larger degree of success than one could have hoped for at the time of its inauguration.

The success of price control is important for the indication that the structure of costs and prices will not require any fundamental alteration during the postwar period and that postwar deflation may well stop with the withdrawal of redundant currency. In other words, no deflation such as would have unfavourable reactions on productive activity will be required. This, again, is important since the maintenance of currency circulation at a high level compared to the pre-war level will enable the maintenance of public revenue at about the same levels as at present.

We may now turn to consider some of the more important aspects of public finance during the war period. It should be noted in the first place that the total net expenditure of the Government of India rose from Rs. 88.83 crores in 1939-40 to Rs. 506 crores in the budget estimates for 1945-46 while total net revenue has risen at the same time from Rs. 88.83 crores to Rs. 350.71 crores. The deficits of the Central Government in successive years are as below:—

	Rs.	
1940-41	6.53 crores	Actuals
1941-42	12.69 crores	Actuals
1942-43	112.17 crores	Actuals
1943-44	189.79 crores	Actuals
1944-45	155.77 crores	Revised
1945-46	155.29 crores	Budget

On the assumption that the revised estimates for 1944-45 and the budget estimates for 1945-46 will not prove wide of the mark the total deficit of the Government of India during this period will amount to Rs. 476.95 crores. One may set by

the side of this the increase in the Defence expenditure which stood as below during these years.

	Rs.	
1939-40	49.54 crores	Actuals
1940-41	73.61 crores	Actuals
1941-42	103.93 crores	Actuals
1942-43	214.62 crores	Actuals
1943-44	358.40 crores	Actuals
1944-45	397.23 crores	Revised
1945-46	394.23 crores	Budget

On the basis of the normal military expenditure of Rs. 50 crores per annum, the increase expected by the war comes to Rs. 1,591.56 crores.

It is tempting to think that if **ceteris paribus** all this money will be available for expenditure on nation-building schemes during the postwar period. One has to remember in the first place that the uncovered deficits of the war period which represent an addition to the unproductive debt have to be deducted from this figure. Likewise it is too much to assume that public revenues will be maintained at the same levels as during the war years. The postwar prospects of public finance are examined in detail in the leading article of this number. What is important to note in this article is that while the expansion of central revenues has been helped by inflation, there have also been careful attempts to create and exploit new sources of taxation. The following is a summary of the new tax proposals made from year to year during the period of the war:

1940-41: Tax Proposals.	Estimated Yield.
(1) E. P. T.	Rs. 3 crores.
(2) Increase in excise duty on sugar	„ 1.9 „
(3) Increase in duty on motor spirit	„ 1.4 „
1943-44:	
(1) Imposing a surcharge of 66-2/3 over basic rate of income-tax. Increase in Super-tax. Extending the E. P. T.	„ 7 „
(2) Excise on tobacco	„ 10½ „
(3) Excies duty on Vanaspati	„ 1.4 „
(4) Increase in postal and telephone rates	„ 1.2 „
1944-45:	
(1) Increase in Central Surcharge. Increase in Super-tax and Corporation-tax	Rs. 8.5 crores
(2) Surcharge on import tariff except on tobacco and spirits	„ 1 „
(3) Increase in Central excise on unmanufactured tobacco, cigar and cheroot	„ 10 „
(4) Excise on betelnuts, coffee and tea	„ 4 „
1945-46:	
Increased surcharge on income-tax. Increased excise on tobacco and customs. Increase in postal rates	„ 8.60 „

Borrowing has been the mainstay of the ways and means programme and no efforts were prepared to stimulate lending to the Government by the various sections of the public. Thanks to the skilful planning of Government loans and the large increase in savings, there are no uncovered deficits, the total of public loans since the beginning of the war up to the end of January, 1945 being the impressive figure of Rs. 833 crores against the actual and estimated deficits to the end of 1945-46 to the extent of Rs. 630.24 crores. In the earlier stages, the question was one mainly of bridging the gap between revenue and expenditure but as the years progressed and there were large additions to currency, it was found necessary to tap surplus funds in order to check the operation of inflationary forces. Thus, in the last three years borrowing has been not only for bridging uncovered deficits but also for finding rupee finance against Allied war expenditure in this country. It is thus that the total of public loans and floating since the beginning of the war is considerably in excess of the budget deficits referred to above.

As for the loan policy of the Government it need not be emphasised that the authorities, in spite of the various difficulties, have been very successful in their policy. The first issue was in the form of 3 per cent defence bonds 1946 issued at par in 1940 and redeemable at a premium of 1 per cent. Since then, there has been a gradual increase in the period of maturity. Thus, from a short-dated loan, the latest defence loan is more a medium-dated loan. Excepting the first defence bonds all the loans have been issued at par and are redeemable at par. The creation of rupee counterparts and the large open-market sales also brought in large funds.

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PROGRESS OF PLANNING AT THE CENTRE

The progress of economic planning in India towards the stage of concrete proposals and clear-cut programmes is, doubtless, a matter of absorbing interest to all well-wishers of the country. But it is not easy, for various reasons, to follow this progress carefully and critically. For one thing, there is much scepticism about the intentions, not to speak of the capacities, of an unreformed Government of India to proceed with planning, that the general tendency is to regard an all-out economic plan as no nearer and no more probable than a National Government at the Centre. For another, the progress of planning is still so far from being a matter of steady advance all along a distinguishable line, that the prevalent trends escape the eyes of all but the most wary. But it can hardly be denied that planning in India has long since ceased to be a forlorn cry and that not only has support been found in unexpected quarters, but planning has been making highly encouraging progress towards definiteness alike of outline and of details. The aim of this section of the supplement is to mass together all the work that has so far been done in this direction. Besides a summary of the reports prepared by the various Committees working under the Reconstruction Committee of the Viceroy's Executive Council, the reader will also find a discussion of problems like road development and irrigation in their relation to post-war planning. But it is necessary here to note the nature and extent of the progress made in the concretisation of economic planning in India. In the present circumstances of the country, the Government and the official Committees are the only source of plans which have promise of being put into effect. But it should not be overlooked that there is no deep chasm between the Government and the most important of the plans of non-official origin, the Bombay Plan. Within a month of its publication Lord Wavell signified his acceptance of the broad objectives of the Plan. Shortly after, the Finance Member discussed it at some length in his budget speech; and though he was critical of the idea of expending created money, he declared at the same time that the Plan was not financially unworkable. Since then Sir Ardeshir Dalal, one of the signatories to the Bombay Plan, has been appointed as Reconstruction Member of the Viceroy's Council and he has been able to put extra steam into the machinery of the Reconstruction Committees.

The broad issues that have come up in connection with planning since the publication of the Bombay Plan are discussed in other articles in this number. The main concern here is to trace the process by which planning loses its nebulous character and is helped to gain in concreteness. From this point of view, the difference between the approach of the Bombay Plan and the approach of the official Committees is noteworthy. Apart from the big bunch of reports published by the various special Committees, the Reconstruction Committee has so far published two progress reports each of which purports to record the progress achieved up to a given stage. These reports have been criticised as dwelling in vague generalisations; and it is to appraise this criticism that the difference in approach has to be carefully understood.

It is well to remember that there are three different factors working for more or less the same ends. The first is the need felt by the Great Powers, both in the immediate interest of victory over the Axis and the longterm requirements of avoidance of war, to provide for the wellbeing and contentment of all the peoples of the world. The second is the need felt by the Government of India to give the demobilised men and war industries a fair deal and to secure the general contentment of the people at large by attempts to cure the national economic system of its more serious shortcomings such as inadequacy of food production. The third factor is the increasing economic consciousness of the people of India and the growing strength of the industrial business community in this country. The last mentioned must ultimately prove the most powerful of the three, especially if India should succeed in establishing a National Government of some sort in the Centre and in the Provinces. For, then, the popular demand for economic progress will find in the business community an effective mouthpiece. The Bombay Plan is in reality a prophetic expression of the working of the popular mind in the years to come. The signatories to the Bombay Plan have had the insight and the skill to sketch a plan of economic development, which can be expounded in terms of the standard of life of the masses and which at the same time will provide the community which they represent all the wider avenues of business activity, which its increasing strength and importance call for. This coincidence of popular and "capitalist" interest, though it has nothing unnatural or sinister about it, serves for misrepresenting the motives and purposes of the Bombay Plan. But as an objective factor in the future evolution of our national economy, its importance is undeniable, though for the present it is the feeblest of three forces, so far as public policy is concerned.

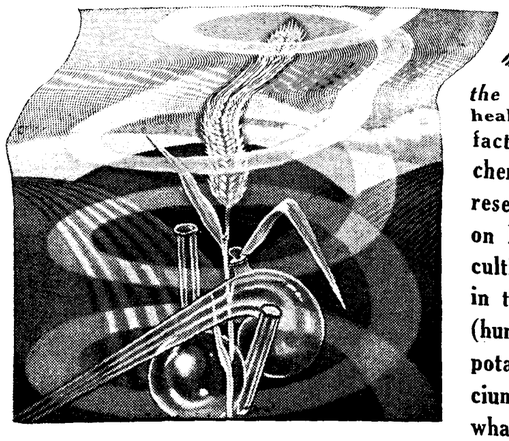
A perusal of the first report of the Reconstruction Committee is helpful to a clearer perception of the relative importance of these three factors. An official publication of this kind naturally makes no direct reference to the Bombay Plan. It starts with a recapitulation of the aims and policies which have gained the acceptance of the United Nations and presents these aims and policies as the background against which our own plan of postwar economic reconstruction has to be drawn up and viewed. One can see that while the official mind works down from the plane of international objectives to the minutiae of our economic problems, big and small, the popular mind starts, as in the case of the Bombay Plan, with a decent minimum of the necessaries of life for the average Indian.. The foremost of the postwar aims of the United Nations is adequacy of nutrition for all the peoples of the world. It is agreed also that 'the primary responsibility lies with each nation for seeing that its own people have the food needed for life and health; steps to this end are for national determination.' The Hot-springs Conference also realised that to the extent self sufficiency is impossible, international co-operation is necessary. In the case of India, self sufficiency in the matter of food and clothing and the primary necessaries of life is by no means difficult to secure. So that, while for the official committees the work of international conferences provides the starting point, the popular view of postwar planning starts with the standard of life of the average India.

The process by which the common goal will be reached in the face of the difference in approach should be extremely interesting. The Bombay Plan, it will be remembered, starts from an estimate of the increase in the annual national income required to secure the desired improvement in the standard of living. It distributes the increase so estimated among the three sources, namely, agriculture ,industry and the services and proceeds to examine how each of the three items can be made to yield the necessary additions. The sphere of commercial relations with the rest of the world is touched only when the question of the increase in the principal crops comes up for consideration. Since the future of international trading relations is so much in doubt, the Plan contemplates adjustment to the changing conditions of the future. In the official report, however, agriculture and social security come last, though this is not necessarily an index of the relative importance which the official mind attaches to the various questions on hand. The liquidation of the war effort and the provision of employment and security for ex-service men are in the eyes of the Government their first task in the postwar period. With these goes the problem of disposals and contracts. As for the larger economic problems, Lord Wavell accorded priority to communications; and only after communications come trade and industry, agriculture and social security. But however begun or worked out, the schemes do need integration in terms of compact national economic system. The one notable result of the official approach is the proposal to give in the future planning of our economic life special preference to ex-service men, in the Railways and in schemes of land development.

The first report described the progress which had been made at the Centre up to the end of January last and indicated some of the problems which the Government were examining in consultation with the various policy committees. The second report purports to be "a summary of the views of the Departments of the Government of India on the issues that arise in so far as it has been possible to formulate them with the material and in the time at their disposal." The authors of the Report add:

> It is not, however, intended to convey specific approval to any particular measures. It is not possible for Government to arrive at final conclusions on matters of policy until a more definite picture of the plans of the Provinces as well as the Centre can be drawn. The report is meant to provide guidance to the Departments at the Centre as well as to the Provinces, to invite the expression of public opinion and to enlist public support. When the proposals in the report refer to subjects within the purview of the Provincial or State Governments they are subject to the views of these Governments.

Fertility



AGRICULTURE to-day recognises that though fertility the power of the land to produce abundant and healthy crops—is the result of many factors, it is inseparable from chemistry and the work of the research chemist. Fertility depends on light and air; on methods of cultivation; and on the presence in the soil of water; organic matter (humus); of bacteria; of nitrogen, potash and phosphates and calcium; and of small quantities of what are known as the minor elements. All those factors are interrelated so that all must be maintained at the right level if fertility is not to suffer. Nitrogen particularly is essential for all vigorous plant growth, and the soil of India is nitrogen-starved. It is important to note that nitrogen is released by the decomposition of organic matter. In the past all sorts of methods were used to obtain it. It was extracted directly from waste products, or recovered in the form sulphate of ammonia as a by-product of coal. Then came the great chemical discovery of how to combine the nitrogen released to the air with hydrogen from water to form ammonia. Nitrogen applied to the land as an inorganic fertilizer enables heavier crops to be grown and therefore more vegetable matter to be ploughed back. Heavier crops make it possible to feed more stock, which means more dung. In other words the element released from organic matter is applied inorganically, but then passes back again to the soil through plant or beast as organic matter. The "fertilizer" of this season supplies more dung or humus next year. Fertility is a cycle in which the products and processes of Nature and the skill of the farmer are inseparable from chemical research and the products of the chemical industry.

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Though the interval between the first report and the second is only a few months, the progress made by the various committees is sufficient to enable the Reconstruction Committee of the Council to visualise the nature of the plans under the various heads, the relations that subsist or ought to subsist between the various plans, and their requirements in their administrative or executive aspects. The Committee stress the fact that no planning is possible except on the basis of certain broad assumptions about the political as well as the economic background of conditions within the country and abroad. They have to assume, irrespective of whether the event will prove them true or false, that constitutional or political changes will not result in a radical departure from the present economic or financial arrangements, that demobilisation will proceed fast enough to bring about a reduction of defence expenditure that world conditions will be such as to facilitate full employment and that the Government of the day and the public will favour the measures necessary for the success of economic planning. But these assumptions do not exhaust the necessary general conditions. Most of the matters to which an economic plan relates are subject to provincial jurisdiction, while the States are altogether distinct political entities. Economic development, if it is to be rational, should show no marked respect for political boundaries. And "one of the fundamental principles of the Plan is regionalisation, so that the different parts of the country benefit in as equal a measure as is compatible with the physical features and natural resources of each part". There is thus a clear need not only for co-ordination, but for a far closer integration of plans and of the executive authority necessary for their execution. In the matter of transport, and particularly road development and civil aviation, the need for centralisation is so strong that the case against local authorities is self-evident. Road and road transport has to be dealt with in the same department and in the case of air lines, it is impossible to organise any rational system on any other basis.

Over other fields of planned endeavour, however, it is idle to look for similar advantages of complete centralisation. For the plan itself, as it can be deemed to have emerged from the labours of the various committees, is not a compact unit. The educational plan, for instance, is drawn up for a period of 40 years. The Health Plan is still under consideration. The Agricultural Plan and the plan for railway replacement are for different periods. If we consider these facts along with the differences of Provincial, State and Central jurisdiction, we shall recognise that the administrative framework has to be specially considered. The Report is in favour of an all-India plan for postwar reconstruction and development as a whole and as part of it a detailed five-year plan for (1) British India for Central subjects including finance (2) each Province in respect of its own subjects including finance and (3) each State of a suitable size in respect of all subjects including finance. Mutual consultation and co-ordination of plans in its initial stages will go a long way towards eliminating the possibilities of conflict. The method by which plans will be evolved is that for each subject a Development Officer will be appointed by the Central Government. Provincial and State Governments should also, it is suggested, appoint a Development Commissioner or create a special Department devoted entirely to development planning, so that the activities of the various departments may be co-ordinated and contact maintained with the representatives of the Central Government. This may not be necessary for every province; and even in the provinces where development officers may be appointed, the officers will find complete plans prepared which need little amendment. But the advantage of comparing plans, picking the good points of some and applying them to others and bringing about a modification of the all-India plan must be fully ensured. The report is careful to emphasise that "the appointment of Development Officers will in no way absolve the Secretaries of the Central Departments from the ultimate responsibility for planning." In the formulation of plans in accordance with these ideas, the functions of the Centre will consist of the initiation of plans and policies for which the Centre is responsible and their elaboration in detail in consultation with the Provinces and States, the provision of expert advice to the Provinces and States so as to ensure a common policy on important questions, the ensuring of exchange of information and technical advice, provision of financial advice and assistance and co-ordination of scientific research and plans and priorities.

It is a question how far these proposals for what may be called planning the Plan will be effective in speeding up its formulation. The Provinces and States, the latter to an even greater extent than the former, are ill equipped to take up the task of formulating plans for themselves. So far, Bombay among the Provinces and Mysore among the States have been alone in putting up a plan with some definiteness of outline. The U. P. has put forward an industrial Plan. While it is true other Provinces and States can and should take up the question without loss of time, it may also be ventured that, till the Centre puts forward more concrete proposals in matters which are under its direct jurisdiction or of which it has to take prior cognisance on account of their all-India importance, provincial and State plans will have to be in the nature of groping amongst uncertainties. The Second Report of the progress of reconstruction planning, though it affords in its second part a summary of the proposals so far made by the various sub-committees cannot be said to have met this need. What the report has to say under the three main headings, agriculture, industrial development and trade and commerce, is largely a matter of general principles rather than delineation even in the broadest outlines. There is throughout the Report a disproportionate emphasis on controls, which many in this country will view with some disquiet, if there should be no change in the constitution of a democratic character. Nevertheless, one may note with satisfaction the fact that the Government of India contemplate a permanent Tariff Board and the liberalisation of the terms of grant of protection.

If the stage of concrete industrial plans is still far off, the plan on the side of finance seems to be taking recognisable shape. The future of economic planning, so far as finance is concerned, was brightened when the Finance Member declared in his last budget speech that, while the use of created money might be dangerous, the finances of India could well afford to give planning a good start. The Second Report observes that "The Government of India have estimated on the basis of certain fundamental assumptions, that a round figure of Rs. 1,000 crores might be available for the first five year period taking effect from the year 1947-48 and ending in 1951-52. Approximately half of the total will consist of revenue surpluses which would be available for financing such Central development projects as are not financed by loans and for making grants, recurring or otherwise. The remainder, that is, about Rs. 500 crores, represents the total loans representing new money, which it is felt might be raised by the Centre and by Provinces, in the five year period. It will be noted that this figure of one thousand crores is exclusive of amounts which could be raised from the market for private investment. This may be of the same order as that estimated for Government borrowings."

The public will probably have to wait till the next budget to know the exact basis on which these estimates have been made by the Government of India. An annual revenue surplus of Rs. 100 crores is possible only on the assumption that, while the revenue heads continue to yield as much as during war time, the defence budget will have fallen by Rs. 100 crores. And revenue can continue at high levels only if the general tempo of business activity and profit margins remain unchanged. We have often expressed our belief that these can be maintained if public policies are shaped towards that end. It is also possible that in the conditions of the post war period, customs revenue may prove to be far more fruitful than it has been for a decade and a half. Of the chief sources of Central revenue today, railway surplus can be maintained if the volume of business activity is not suffered to fall. While E.P.T. may be affected, income-tax may well become a highly expanding source of revenue. Some doubt may reasonably be felt as to the continuance of Reserve Bank profits on the present scale of Rs. 10 to 12 crores. What is doubtful is not the maintenance of revenue at about the levels of the war period but the speedy decline of defence expenditure. If demobilisation and disposals are properly effected, there would be the double advantage that not only will defence expenditure decline, but substantial additions to the national income will have been rendered possible. In any case, finance has ceased to be a paralysing bogey to the authors of economic planning.

Since finance has ceased to be a bogey and since there is a bunch of special reports on various matters containing concrete proposals, it would be unfair to cavil at the progress so far made. There is, on the other hand, need for the general public to acquaint itself more closely with the special proposals of the various Committees of which only a summary is attempted in this section of the supplement.

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POST-WAR ROAD DEVELOPMENT

The extent and nature of the transport system of a country is a sure index not only of its economic progress but also of its capacity for educational and political advancement. It is not an accident that powerful nations have excellent road systems. The roads of India have been in the past a drag on her development. If the future is to be shaped in the true interests of the vast millions of this country a well-thought-out, comprehensive Road Plan for India is a first requisite. The Road Plan should receive a high priority in the list of post-war reconstruction schemes because the transport network is the basis upon which all schemes could be successfully planted.

Importance of Roads

The heavy strain imposed by the war on our transport system has revealed the utter inefficiency and inadequacy of our roads. Events are moving fast and the war effort and national economic mobilisation have to be speeded up. India is the arsenal of supply to different war theatres and has to serve as a base of operations against the Japanese now entrenched in Burma. Large armies have to be moved to and from and war materials have to be sent in ever-increasing quantities to different strategic centres. The recent raids on certain Indian towns have revealed that all precautions should be undertaken to facilitate civilian evacuation on a mass scale in certain areas. Our railway system is exposed to sporadic bombing by the enemy. The dangers attending coastal trade underline the urgency of a good road system capable of serving all emergencies. Expansion of railway system is now out of the question because of the difficulties in importing or manufacturing rolling stock locally. The food crisis has clearly demonstrated how dearly India had to pay for neglecting her vital transport system. The increasing tempo of inflation indicates the persistence of high prices and if the price levels in different provinces are to be equalised the transport system should be thoroughly and immediately overhauled. The requirements of the military as well as the civilian population emphasise the urgency of a planned drive to develop the road transport even before the war is over.

There is no doubt that in the past we have neglected the roads and sustained national loss. If it is contended that when the war started India's industrial and agricultural potentials were low, the situation on the transport side of our national economy was no less disheartening. Referring to the lack of an efficient road system the Hon'ble Mr. R. H. Parker, President, The Indian Roads and Transport Development Association, Ltd., says,

"In India there are to-day huge areas totally devoid of any lines of communication. There are areas with tremendous agricultural possibilities for the growing of all sorts of crops, which are now lying fallow except for the bare cultivation necessary for the needs of the people living there. India is thus being held back while the rest of the world progresses. How appallingly few are the roads in some of the areas served by the great waterways will be evident from a brief study of India's road map. For hundreds of miles do rivers like the Godavari flow through rich soil, the produce of which cannot reach the market it deserves for lack of road facilities.

"More than half of the perishable produce of India runs to waste on account of delay in reaching the market consequent upon the limitation of transport. Improved roads which mean faster and larger transport facilities, particularly with the use of motor lorries, could convert this waste into wealth. Fast transport is also of the utmost importance to staple industries such as cotton, especially when it is a race to get the crop into the factory before the rains or to make delivery by a promised date."

The Bombay Economic and Industrial Survey Committee (Sir P. Thakurdas Committee) of 1940 revealed that the economic development of Bombay has been arrested for want of transport facilities connecting production and consumption centres. They pointed out that 40 to 75 per cent of the area in certain districts are not served by roads at all and that in certain other districts 70 to 80 per cent of the villages are totally cut off from outside communications during the monsoon. This sorry state of affairs should not be allowed to continue any longer. It should be recognised that roads constructed to serve the needs of war can form an excellent basis for the post-war economic development of India. When the war is over thousands of military lorries and cars will be diverted to civilian use. Mechanics who have been trained during the war period will have to be profitably employed. Lakhs of soldiers would return from different fronts seeking to be employed. The need for a road development plan to answer the demands of demobilisation is therefore urgent. War, it is believed, is rapidly coming to a close and hence India has to draw up a comprehensive plan of road construction.

While roads are vital to winning the war they are no less important for winning the peace. Already there are schemes of industrial development of different areas ready to be put into operation. The accumulation of sterling balances indicate that the post-war chances of industrialisation in India are very bright. How can the distribution of industries be arranged to our best advantage when roads are woefully inadequate? The exploitation of India's mineral resources should not be delayed for want of cheap transport facilities. It is well-known that lack of marketing facilities has been a great stumbling block preventing the development of numerous small-scale industries and rural handicrafts. The exploitation of the cultivators by middlemen, has been not a little responsible for poverty of the rural masses. If villages are closely linked with each other by good roads the bargaining capacity of the cultivator would increase and the springing up of adequate number of markets would offer alternative channels for selling his products. Better roads mean saving of time and this by itself would increase the sale of the agricultural products. At present Indian villages are badly served by roads and unless they are intimately connected with towns and cities there is little likelihood of the rural folk playing a useful part in modern democratic life. It has been calculated that the annual savings in operating costs that would accrue to the users of bullock carts, if India had adequate roads, would be in the neighbourhood of Rs. 55 crores.

Roads would facilitate the greater mobility of labour and capital alike. They make decentralisation of industries possible and the greater facilities given to business agents, technicians, and traders afford ample opportunities for efficient business organisation and distribution.

450-crore Plan

The Government of India have now released for publication their twenty-year road programme to be initiated as early as possible. It envisages the construction of four lakhs miles of roads at an actual cost of Rs. 450 crores to be completed within a period of 15 or 20 years (the cost is calculated on the basis of 50 percent above the pre-war price). The Second Report on Reconstruction Planning makes it clear that the Government have for the first time taken up transport as a coordinated effort and the days of piecemeal planning have been given the go-by. Maximum possible cooperation between the Centre and the Government will be assured and the coordination between the road and rail transportation systems would be achieved with a view to developing Indian agriculture and industries for the common benefit of all. The road programme is divided into two parts viz. the long-term programme and the short-term one. The short-term programme would deal with the immediate problems arising out of war conditions and will be more concerned with absorbing the demobilised soldiers, lorries and road machinery to be released by the Disposals Board. The long-term programme envisages a network of roads covering every remote corner of India within the framework of the road transport system. To achieve this purpose roads are classified as under: (a) National Highways which will be the vital road frame linking up Provincial capitals, landing ports and international routes at the frontiers in India. This, it appears would form the basic skeleton over which the other categories would be planned. The Centre assumes the responsibility for the constructing and financing of these national highways. (b) Provincial Highways serving as arteries of provinces or States suitably connecting them up with the national highway system. (c) District Roads covering each district adequately, serving centres of production and markets and connecting them up with one another with the highways, railways and other agencies of transport. (d) Village Roads which would connect villages with each other and all of them to the district road, main highway, rail-head or river ghat. The Provinces are entrusted with the job of planning Provincial Highways, district roads and village road systems. The aim is to bring every village within half a mile of a public road. While Provincial and State Governments are called upon to submit their road plans, evolved with due consideration to all local requirements, the Centre would coordinate and control the phasing of the road development in the country as a whole, and be responsible for the designing and citing of major bridges and also for giving technical advice on the construction of bridges etc. A Road Board consisting of a Chairman, a member for road development, a member for traffic, a member for finance and a secretary is suggested for coordinating the plans of the Provinces and States and for laying down standards and specifications. This Road Board would also balance rival claims for priority in construction, coordination and directing the efforts of all constructive agencies and regulate the work in such a way as to make the maximum use of men and material. An Advisory Council could be formed to assist the Central Road Board in its policy of serving the different interests of Central, Provincial and State Governments in an impartial manner. It is expected that within a period of 20 years the road mileage of the country would be increased to the target figure of the existing mileage of 79,000 miles of hard crust roads and 163,000 of earth roads to 147,000 miles and 253,000 miles respectively, that is, by 86 and

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55 percent respectively. The Second Report assures that the workshops established for the maintenance of road machinery (now being used by the Army) should be continued even after the war to re-condition surplus machinery before disposal. Procurement of machinery for road making would be made on an all-India basis and constructive work would be standardised. It is also laid down that road making machinery and plant as well as the materials needed for road construction and maintenance should be manufactured in India. Steps would be taken to make motor vehicles taxation uniform in India and reciprocal arrangements would be made to obviate double taxation. The development of pneumatic tyred cars could be pursued and manufacture of tyres and cars could be made from the salvage that would be made available after the war. Lest the petrol position should offer a bottleneck, the development of alternative fuels such as producer gas and alcohol produced with petrol can be encouraged. It is recommended that the Central Government should declare a moratorium for a long period during which countervailing tax on producer gas transport vehicles would not be imposed. An elaborate and reliable statistical information would be needed to get the transport management on proper lines and hence steps would be taken to organise the collection of statistical data regarding road transport.

Road-rail Co-ordination

One of the reasons for the unhealthy development of Indian transport systems was the unregulated road-rail competition which developed in the past two decades and more. While the Government of India were directly interested in the railways, roads were left to the care of the provincial governments. The Government of India in the past evinced an unhelpful attitude to road transport development and refused to utilise the Central Road Fund for purposes of road transport on the ground that "the money was provided from the central revenues and would not be applied unduly to the construction or improvement of roads directly competing with the railways and thus become a subvention from one source of central revenues seriously affecting the other." In order to safeguard the interests of the railways, particularly during the Slump, the Government have continued their policy of neglecting road transport which alone could have brought trade and prosperity to the villages. Road-rail competition has often been so keen that not only the companies involved but even the general public were adversely affected. Rate wars have been declared, railways declaring special rates to kill motor transport and motor companies answering the challenge by cutthroat competition. It was not recognised that in the long run wasteful competition tends to increase the cost of transport to the community and does not offer regularity or efficiency of service. The Report of the Technical Sub-Committee on Road-Rail Relations (K. G. Mitchell's Report) emphasises the need for correct coordination between these two agencies.

The Provinces should be made to take an interest in railways and the Centre should have an effective watch on road transport. To achieve this coordination and cooperation, a Central Transport Budget has been suggested. The Provinces and States should share in the central transport budget for pooling of revenues and balancing of capital expenditure on both road and rail. With regard to the problem of regulating road-rail competition the Committee take the view that competition to satisfy public interests and convenience will be inevitable up to a distance of about 50 to 100 miles and more. Such an amount of competition would create the conditions necessary for securing maximum emciency of transport. But cutthroat competition among motor companies themselves have to be prevented and all possible safety measures will have to be undertaken. Subject to these measures of regulation, there should be no restriction either on the range of operation of passenger road transport or its members. If the working of the road transport should affect the railway finance adversely, the railways are allowed "to get on the roads" by acquiring an unending interest in motor companies operating on the main routes. On the very light traffic routes only a few buses can ply profitably and some form of controlled monopoly may have to be started. At present, competition is not very keen regarding goods traffic but in future the position may create some anxiety. Road-rail coordination can be successful only if traffic is allocated to the two agencies according to well-known principles. The Technical Subcommittee after studying the systems followed in other country, recommends that "any central transfer of short-haul goods traffic up to a lead of 50 miles or up to 100 miles where the rail transhipment is involved would constitute an improvement of transport facilities which should be encouraged". Regarding long distance goods traffic, the Committee prefers the system of zoning and an evolution of a formula based on experience and public need. Control of goods traffic on national highways, it is recommended, should be central. The establishment of minimum fares for both road and rail arrived at by agreement is also aimed at. The Committee further feel that there is no advantage of State ownership, divorced from railways, of passenger of motor transport and there is no advantage in railways operating or participating in motor transport of goods moving or parallel routes.

The Govt. of India road plan is infact the outcome of the recommendations of the conference of Chief Engineers of the Provinces and the States held at Nagpur in Dec. 1943. The Conference indicated the milage under different categories and calculated the cost of construction as below.

	Miles.	Rs. Crores.
National Highways ...	22,000	47
National Traiis ...	3,000	3
Provincial Highways ...	65,000	121
Dist. Roads, Major ...	60,000	62
Dist. Roads, others ...	100,000	82
Village roads ...	150,000	30
Arrears of War Years ...		10
Bridging		45
Land Acquisition		50
Total		450

Financing the Plan

Financing of the road plan, it would appear, would not offer insuperable difficulties. Even as a revenue-yielding proposition, the roads programme would not be disappointing in the long run. As Mr. Kennersley pointed out recently "Expenditure on roads is an investment no less remunerative than in the case of Railways'. At present, the public needs to be educated on the fact that road is almost the only public utility service wholly maintained by the Government and that the taxes paid by the people for the use of roads, the motor-tax and the petrol-tax do not form even a small percentage in the cost of upkeep of the roads. The justification for tapping non-governmental sources need not be emphasised. The responsibility of not utilising the Central Road Fund for road construction rests with the Provinces, and it has been calculated that the annual savings in operating costs that would accrue to the users of bullock carts in India, if India had adequate roads, would be in the neighbourhood of Rs 55 crores. With the increase in traffic, particularly the motor traffic, the receipts from petrol tax and motor-tax would swell. Roads would help in opening up the agricultural and mineral resources of the country and aid marketing a good deal. They would enhance the value of lands and buildings and thus add to the taxable capacity of the people. A tax on vehicles, including the bullock cart, is suggested by some as a fertile source of income. Others demand that the accumulated sterling balances of India should be drawn upon for financing the road plan. Others favour loans and the floation of 'road bonds' as in the U.S. A.; and it is possible to persuade the chief exporters of motor vehicles to India—the U. K. and the U. S. A.—to take a good lot of the bond issue. Since road development yields greater income to other agencies of transport like the railways, a case has been made for a contribution from the railways also. The general exchequer and the revenue from road transport can, within a few years of the beginning of the road programme successfully share costs.

The merits of the Government road plan consist in co-ordination of two of the most important transport agencies so as to serve the abiding interests of all the provinces in India. The proposed transport control would achieve the advantages of monopoly as well as the benefits of regulated competition. Regulation is so schemed as to steer clear of callous laissez-faire on the one hand, and outright socialisation on the other. The aim is to render improved and uniform service in those areas irrespective of the cost of service and road-rail coordination would ensure a stable rate structure which is indispensable for productive activities. Statutory control and coordination brings transport administration within the effective influence of the people through the legislature. Wage conditions for labourers could be improved and large-scale improvements could be made since road-rail cooperation results in building up of strong reserves and heavy capital investments. Above all, the proposed Road Plan would be a corrective to the haphazard road development in some provinces where, owing to peculiar conditions and the rigors of rate war between railways and motor companies, the normal progress in transport service has been delayed too long.

The Government plan has been subjected to criticism in different quarters. It has been pointed out that the regional plans for road and railway development have not been evolved on the basis of exhaustive traffic census conducted in important localities. To draw a plan based on faulty figures and commit the future economic development on the basis of inadequate or out-of-date data would indeed jeopardise the real interests of the different areas concerned. The Provinces and States are shortly to submit their project schemes to the Centre for approval and further action. It is to be hoped that the authorities would have their final decisions only after conducting scientific surveys (like the Pilot Survey recently conducted in Bombay). Secondly, the road plan has been divided into short-term plan involving works meant for the absorption of demobilised soldiers. lorries, military equipment etc., and long-term development phased into three or four well defined stages. Though the latter should be only a continuation of the former, the public are not yet told as to when the long-term plan would be taken up for execution, if at all. Thirdly, the public are not yet given any idea regarding the plan for waterways and sea-ways.

Nor are they in a position to judge the soundness of the road plan against the background of an all-India general economic development. The excessive zeal of the present government in pushing up road construction has been looked upon with suspicion in several circles where the belief is strong that British anxiety to dispose of their motor cars, road rollers, machinery and consumers goods lies at the root of the high postwar priority given to road plans.

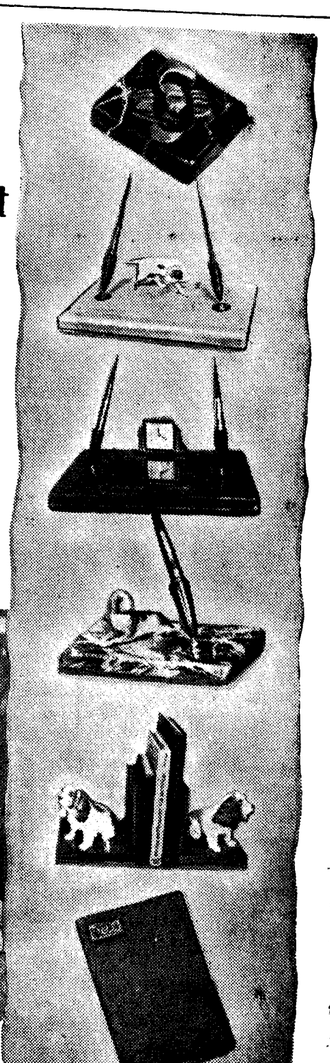
Enthusiasum for an extensive network of roads should not blind us to the implications of giving the road programme a first priority, while the agricultural and industrial developments of the country lag behind. True, the present agricultural stagnation has been to a great extent caused by the neglect of a transport service intended to serve the villages. It is also to be remembered, as Sir Manilal Nanavati has recently stated, that historically continuous de-industrialisation of the countryside for over a hundred years has reduced the earning power and vitality of the ryot. At a time when agricultural activities are being made unprofitable owing to the lack of village handicrafts and excessive surplus population pressing on already badly fragmented holdings, a sudden gearing up of transport may weaken the small farmer and the bullock cart users. It may merely accelerate the tendency of flooding this country with imported articles and help in accelerating the export of raw materials to foreign countries. Already, there is a suspicion that the special interest shown by the Government in road plans may be actuated by a desire to prepare a market for outworn road-rollers and motor-cars produced by the U.K. This suspicion is no doubt baseless, but it serves to underline the need for fitting the road programme in a master plan for India, if Indian rural economy should be safeguarded from the lag in transport development. Fourthly, the conference held at Nagpur laid down in their report that in the construction of village and district roads stress should be laid on types requiring the least maintenance and attention. The use of tar, bitumen or cement surfacing would excellently serve the purpose but the Government have, it appears, overlooked the claims of the future district and rural roads to modern surfacing. Fifthly, the Government have not yet seriously tackled the problem of cement production immediately after the war. Lastly, it has been felt that the target of 4,00,000 miles for a sub-continent like India is too inadequate and compared to the Bombay Plan target of 6,00,000 miles the aim appears too modest.

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THE RAILWAY BUDGET 1944-45

Sir Edward Benthall, the Member for War Transport, has chosen to mix a drop of bitter gall with the cup of milk which he has set before the Central Legislature. He is not, apparently, satisfied that the milk is of doubtful quality, that the surpluses of which he has spoken with such evident satisfaction mean but little to the people in the ultimate realities of national life. And the little satisfaction that the country might have felt that the Railways continue to yield higher and higher profits on paper is outweighed by the prospect of having to pay more for a service which dwindles daily in scope and quality. The main features of the Budget presented to the Assembly need hardly be the last minute revelation of the Member in charge. They have been writ large in all that has been happening in the country, in the limitless rise of currency circulation, in the numerous military specials that run over all parts of the country and in the ceaseless shrinkage of the place given to the ordinary public in the country's transport system. There is neither mystery nor surprise in the tale of increasing surpluses which Sir Edward gave to the Central Legislature. And the fact that the proposal to increase fares was forecast, almost broadcast, far ahead of the Budget can do little to mitigate the pain that the public must feel about this gratuitous addition to the hardships of the present war period.

The results of the three years to which the present budget statement refers are in all conscience impressive. Revenue has acquired a commendable habit of exceeding estimates, while expenditure, not to be outdone, obligingly suffers shrinkage. The gross receipts for 1942-43 were Rs. 6.23 crores above the revised estimate, while ordinary working expenses were Rs. 2.29 crores less. Payment to worked lines and interest charges declined by Rs. 4 lakhs and Rs. 13 lakhs respectively. In the net result, the surplus was Rs. 45.07 crores, or Rs. 8.79 crores more than the revised estimate and this additional sum has also been transferred to the Railway Reserve which at the end of the year stood at Rs. 9.35 crores against the revised estimate of Rs. 56 lakhs. The current year promises in the revised estimates to be as good as last year. Owing to the continuance of the high level of earnings, the present estimate of gross earnings is placed Rs. 28.5 crores higher than the budget estimate, at Rs. 178.5 crores. Gross working expenses are expected to rise to Rs. 108.58 crores and interest charges by Rs. 86 lakhs. The net result is a surplus of Rs. 43.77 crores as against Rs. 36.04 crores in the budget estimates. Out of this surplus Rs. 11.05 crores will be transferred to the Railway Reserve Fund and the balance of Rs. 32.27 crores will go to the general revenues.

As for 1944-45, taking into account the proposed increase in fares and the maintenance of the surcharge on coal throughout the year at 20 per cent. the gross earnings are placed at Rs. 192 crores or Rs. 13.5 crores in excess of the revised estimate for the current year, while in the case of expenses an increase of only Rs. 5.32 crores is provided for. The net surplus is estimated at Rs. 52.21 crores, as against Rs. 43.77 crores for the current year in the revised estimates and the realised surplus of Rs. 45.07 crores for 1942-43.

The figures cited in the last sentence constitute in themselves a strong prima facie case against an increase in fares such as has been proposed by the Member for War Transport. But the purpose of the new levy is not to meet an imperative present need but to make a far-seeing provision for the future. And the special reasoning put forward by the Hon'ble Sir Edward Benthall for effecting an increase in fares must be considered with more than usual care.

There are three good reasons for increasing fares today, the effect that such an increase may have on reducing passenger travel, the deflationary effect owing to the immobilisation of a substantial volume of currency and the opportunity of taking the first step towards building up a fund for postwar reconstruction purposes. As regards the first, the experience of 1917, when in similar conditions fares were increased, is likely to be repeated. Action then was followed by a decrease in the number of passengers travelling and, although after a year the number again increased, it did restrict the number who would have travelled had there been no increase in fares. We of course, agree with the Central Advisory Council that in present conditions increasing fares, except to a penal extent, will not alone so reduce travel as to prevent overcrowding. The deflationary effect, combined with other measures which the Finance Member may take, will be a very valuable contribution to the solution of India's most pressing economic problem. An increase in goods rates on the other hand, although it would be thoroughly justified on the general level of prices, would, unless there were other compensatory action, tend to have an inflationary effect which it is desirable to avoid. The argument in favour of building up a fund for postwar purposes is to my mind paramount and irrefutable and the Governments of the future would rightly blame our shortsightedness and lack of courage if we failed to put them in a position to carry through the postwar plans which we are preparing for their fulfilment.

Overcrowding, inflation and heavy depreciation during the war period, constitute according to Sir Edward, the "three good reasons" for increasing fares today; and it is necessary to see how far these three circumstances can be held to be a valid ground for increasing passenger fares. We may perhaps change the order and deal with inflation first, not only because the word provokes unreflective reactions in most minds, but also because anti-inflationary measures do not exactly come within the orbit of the Member for Transport. It is unfortunate, indeed, that public understanding and official comprehension of the inflationary problem have all along been on wholly unrealistic lines. Strange ideas regarding inflation have been insidiously encouraged. It is thought that nearly every one in the country has his pockets bulging with new money; that the increase in everyone's income is proportionate to the increase in the Reserve Bank's currency circulation and that everyone is crying for some outlet for his surplus cash. Nothing can be farther from the truth. Though Sir Edward has cited figures to show that the farmer is getting more for his produce than formerly, he has little to say of the increase in his expenditure or of the desirability of his having something left for the rehabilitation of his household or his farmstead. In any case, the value of higher fares as an anti-inflationary measure depends on whether they cut into the pockets of a large class or a small one. With travel as restricted as it is, with passenger earnings being derived in so large a part from public funds instead of private pockets,



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it is idle to contend that the proposed increase has any value as an anti-inflationary measure. After all, every forced deprivation of private individuals cannot rank as an anti-inflationary measure. And since the task of the Transport Member is to administer the Railways efficiently according to sound principles and not make up for any possible errors of policy of his colleague in the Finance portfolio, the introduction of inflation in this context is as unnecessary as it is unjustifiable.

As a measure for preventing overcrowding, the increase in fares is even more unsuitable. If one remembers the courses behind what is called overcrowding and the nature of the passenger traffic at the present period, then it will be conceded that an increase in fares can only add to the hardships of the passengers without remedying the evil it is directed against. Sir Edward has in this context too cited figures to show that the increase in tte passenger traffic coincides with the period in which inflationary tendencies were most apparent. But as a matter of common personal experience one might say that passenger traffic increased with the growing reduction of other means of transport such as motor buses. The severity of petrol rationing is a factor that lets directly on the volume of passenger traffic on the railways. Even within cities like Calcutta, the strain on the tramways developed a great deal with the decrease in the number of private motor cars and the cut in the bus services. What we call overcrowding is the combined result of reduced motor transport and the cut in the number of trams run. The Railway administration pays itself an undeserved compliment, if it fancies that any considerable number of people undertake railway travel for pleasure. What passenger traffic there is today is not less obligatory than the suburban passengers who have been exempted from the increase in fares. For avoidable travelling one should perhaps look to officials on tour or transfer rather than to the ordinary civilian public; and if the increase in fares should result in a reduction of passenger traffic, we make bold to say that it can only indicate that a most unjustifiable and crusing disability has been imposed on the public.

We doubt whether the Railway Member's estimates of increased yield will prove correct. So far as we are able to judge, the average individual spends about a month's income on travel on the movements necessitated by personal and domestic business. These movements are as necessary as food or clothing; and if the cost of this necessity is arbitrarily put up by 25 per cent, the consequences cannot be accurately predicted. But it is certain that the Government's claim of keeping the costs of living down will have been greatly weakened.

It may be said, however, that the requirements of the financial soundness and stability of the Railways should outweigh to a reasonable extent most other considerations. Few will deny that the strain on the railway system imposed by war is so great that it is almost impossible to err on the side of excess in our provision for depreciation. It may be conceded, too, that the conditions in which repairs and renewals will have to be made on a large scale cannot be foreseen and that it is not the part of wisdom to assume that the conditions will be quite favourable. It is all the same a big jump from these concessions to a recognition of an immediate need to provide a fund of Rs. 10 crores for repairs and renewals. The mention of lower class passengers in this context and the effusive sympathy which the Government have shown for them are too patently demagogic to impress the public. If the 10 crores are to be earmarked for this purpose, then it must be agreed that to some extent this is different from the general problem of allocation to depreciation. The surplus realised unexpectedly in 1942-43 by itself is nearly equal to the amount which Sir Edward wants to set apart for the provision of facilities for lower class passengers.

The public will naturally prefer to decide this question after the war in the light of the circumstances of the time, rather than increase the hardships of the travelling public by an increase in rates. It is, we consider, fortunate that the proposed increase is not an integral part of the Railway Budget and that the Government should have no difficulty in acceeding to the verdict of the Legislature.

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PLAN FOR POST-WAR CIVIL AVIATION

The Indian Air Board submitted a memorandum in May 1926 on the past history and future development of Civil Aviation in India. Tht Board observed that India was a country admirably suited for the development of aerial transport; and it was agreed that India's geographical position marked her out as an all-important link in any air route between Europe and the Far East. Amongst the recommendations, made by the Board, the following call for notice. (1) All landing grounds in India and necessary equipment should be the property of the Government of India who should be responsible for the provision of wireless and meteorological facilities. (2) The Government of India should claim in future to be consulted at all stages on the terms of any contract for an external air service touching India and to participate as a principal in any such contract. (3) As far as internal air services are concerned, Government should accept the priciple of subsiding such services in the earlier years. The memorandum was placed before the Legislative Assembly, where it was revealed that the policy of the Government of India had been and was to develop civil aviation with Indian capital under Indian management and to afford training and opportunities for employment to Indians. It is on the basis of this policy that post-war civil aviation planning and execution should proceed.

Prior to the present war, the air services in and across India consisted of internal services, Empire services by B. O. A. C. and foreign services. The outbreak of the war in September, 1939, brought about break-up in some parts and those remaining were devoted to war efforts.

The memorandum of the Dept. of Posts and Air on post-war development of civil air transport in India seeks to clarify the policy of the Government as regards the establishment of urgent air transport services. The aim is to plan a system which is necessary in modern conditions for the proper development of India as a whole socially, commercially and industrially. The system would link the principal commercial and administrative centres of the country and connect with the principal neighbouring countries of India, namely Burma, Ceylon and Afghanistan.

The post-war transport plan is outlined as follows:—

A. *Air Services essential for the social, commercial and industrial development of India.*

1. *International (Empire and Foreign) Air Services—*

(a) Europe and Africa—Karachi—Calcutta—Australia and China (this may eventually be non-stop between Karachi and Calcutta).

(b) Karachi—Bombay—Colombo—Flying Boat Route.

(This is dependent on development in flying boats which may or may not come about).

2. *Indian Trunk Air Services (including essential connections with neighbouring countries).*

Route 1.—Karachi, Bombay, Bangalore, Colombo.
Route 2.—Calcutta, Allahabad, Cawnpore, Delhi, Lahore, Peshwar, Kabul.
Route 3.—Delhi, Nagpur, Hyderabad, Madras.
Route 4.—Calcutta, Cuttack, Vizagapatam. Madras, colombo.
Route 5.—Bombay, Nagpur, Calcutta.
Route 6.—Karachi, Jodhpur, Delhi.
Route 7.—Bombay, Ahmedamad, Delhi.
Route 8.—Calcutta, Akyab, Yenangyaung, Rangoon.

3. *Essential Links between Trunk Air Services.*

Route 9.—Karachi, Quetta, Lahore.
Route 10.—Calcutta, Dacca, Sylhet, Tezpur, Dinjan.
Route 11.—Madras, Bangalore, Cochin.

B. *Local Air Services—*

The following are a few examples of many such possible services:—

(a) Ahmedabad (or Bombay), Kathiawar States.
(b) Hyderabad, Bombay.
(c) Hyderabad, Bangalore.
(d) Lahore, Srinagar.

It was decided that the post-war air services would form of International (Empire and Foreign) Air Services, Indian Trunk Air Services (including essential connections with neighbouring countries), Essential Links between Trunk Air Services and lastly, Local Air Services. The nature of the International Services will be detailed by the Civil Aviation Conference, held in America, but it is up to the Government of India to take the initiative in the planning and organisation of the "Indian Trunk Air Services" and "Essential Links". As for the Local Services, they are left mainly to the local and private enterprise; all that the Government might do is to give assistance in the matter of ground organisation. The services included under the heads "Indian Trunk Air Services and 'Essential' Links" constitute a route milage of 10,500 miles and with a frequency of one return service daily will involve flying approximately 7½ million miles a year. In order that the operation of a system of air services of this magnitude does not lead to the slightest difficulty, two classes of aircraft of higher technical standard are visualised. These are the Douglas Dc3 with a playload of approximately 2.1 tons or 21 passengers and the D.H.95 with a playload of 1.3 tons or 12 passengers.

The cost of the operation of the services in India is estimated at Rs. 2 per ton-mile during the first year of post-war operation, decreasing gradually to Rs. 1-8 during the fifth year. On the basis of the annual milage mentioned above of 7 and half millions and with aircraft of the types specified, the overall cost of operation of the services is estimated at Rs. 2.53 crores during the first year decreasing to Rs. 1.90 crores during the fifty year.

The services will earn revenue by carrying mails, freight and passengers. The total revenue has been estimated at Rs. 93 lakhs during the first year and Rs. 203 lakhs during the fifth year.

The services contemplated may be established and operated in one of the following ways or by a combination of two or more.

(1) *State Operation*:—(a) By a Department of Government subject to normal financial and other control. (b) By a Department of Government invested with autonomous powers of financial and other control.

(2) *Statutory Corporation*:—By an autonomous monopoly corporation with capital and other finance provided from public funds or partially or wholly by the issue of interest bearing stock, guaranteed by the state.

(3) *Company Operation*:—Single monopoly company—By a single commercial organisation with its own capital and operating under normal commercial principles of risk of loss and prospect of profit (subject to such financial assistance as Government may grant).

(4) *Company Operation*:—Limited number of companies—As in (3) but the subsidised operations divided between a limited number of companies (not more than four for the operations outlined).

It has been suggested that one monopolistic concern for the whole of India may be undesirable and it will perhaps be better to have a small number of large and financially sound operating companies, who would apart from these principal operations, also undertake the development of additional air services, either on their own initiative or by agreement with provincial Governments and Indian States, whose co-operation would be invited for the successful achievement of the aim all over the country. A Central Licensing Board would be established for the whole of India and no air transport service be operated without license from the Board. The Licensing Board will examine the details of each offer, firstly from the technical aspect and secondly from the financial aspect in the light of the figures and facts at its disposal relating to potential traffic, cost of aircraft etc. The Board will be responsible for recommending to Government the target operating cost and the target revenue to be adopted for the service in successive years, together with any special conditions for review incases where financial assistance is to be granted.

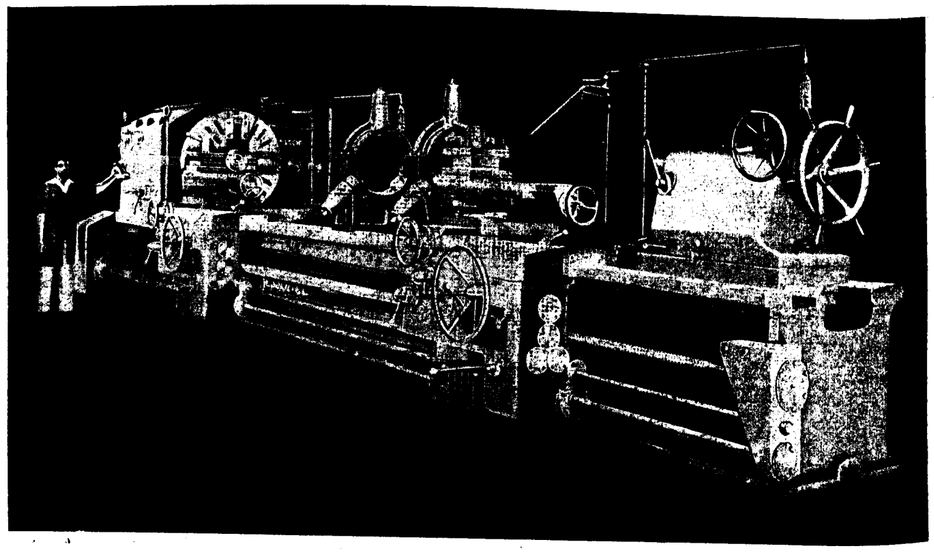
As for air transport subsidies, the Government is opposed to the ordinary system of direct subsidy through lumpsum subsidy or indirect subsidy through mail contracts etc. In order that the operator does not magnify his costs by allowing liberal margins for all contingencies, the Government is considering a system based on setting a standard of efficiency of operation as measured by the

cost of operation per ton-mile, fixing in advance an ascending scale of efficiency (or descending scale of cost of production) combined with fixing target revenue on an ascending scale. Any assistance to be given by Government will then not exceed the difference between the prefixed operating cost and the target of revenue set it will be the task of the operator to achieve the standard of efficiency of operation and earn the target revenue. In the event of his failure to do so, he should suffer the loss and in the event of greater success than the standards set, he will share the resultant benefits.

Aerodromes for Post-War Development

In their plan for the development of post-war civil aviation in India the Government of India carefully omitted any reference to the building up of an aircraft industry but details are furnished regarding the aerodromes and landing grounds to be dotted all over India. A memorandum on aerodrome and route construction circulated at the first meeting of the Reconstruction (Policy) Committee for Posts and Aviation proposes to construct a net-work of 111 aerodromes at a cost of Rs. 15½ crores to be completed within ten years after the war. Since there are already 91 aerodromes in existence only 20 are to be newly constructed. Such of the existing R. A. F. aerodromes as are available at the end of the war will be taken over for civilian use. Seventy-eight of the total aerodromes will be equipped with night flying facilities. The location of the aerodromes and landing grounds have been determined with reference to the population of the towns and the necessity to link up the Indian system with international air routes. Of the cities with a population of over a lakh 46 will be served by aerodromes while 9 are not included in the schedule. 29 aerodromes will be located at towns with a population of over 50,000 and 36 will be distributed for towns with population less than 50,000. Under the present plan 56 towns with a population over 50,000 would not be served by aerodromes. 11 internal air routes are provided for viz.: (1) Karachi-Colombo; (2) Calcutta-Peshawar (if possible to be extended to Kabul); (3) Karachi-Delhi; (4) Bombay-Calcutta; (5) Calcutta-Colombo; (6) Delhi-Madras; (7) Bombay-Delhi; (8) Calcutta-Rangoon; (9) Karachi-Quetta-Lahore; (10) Calcutta-Assam; (11) Madras-Bangalore-Cochin. The plan makes provision for a correct linking of the Indian network with international lines. The landing place in India of long range world services cannot be known now but it is proposed to construct four super aerodromes at Karachi, Bombay, Delhi and Calcutta fully equipped for dealing with world traffic. The internal air transport system is so devised as to provide traffic distribution from these four super aerodromes. Hotels to accomodate 50 to 250 guests and quarters for 1,000 to 1,500 men employed in different capacities at the aerodrome are part of the scheme outlined. It is estimated that an area of 20,000 acres may have to be acquired for the construction of the 20 new aerodromes, the expenditure involved will be about Rs. 60 lakhs. Aerodrome construction would cost Rs. 170 lakhs and the required runways involve an expenditure of Rs. 381 lakhs, Rs. 100 lakhs have to be set apart for the provision of suitable hangars. The annual recurring expenditure on maintaining the works planned is estimated at Rs. 44 lakhs. While there can be no doubt about the urgency or value of large number of aerodromes for India one has to bear in mind that any plan of air service should be based on the present and prospective needs of different regions. Air transport must serve and be served by railways, roads inland waterways and seaways. The regional economic development of different parts of India should be well and truly served to the satisfaction of all interests. Though Sir M. Usman has made it clear that the internal air service of India would be the sole concern of India and under Indian management the absence of a definite policy of encouraging the internal production of aero-engines makes the scheme unsatisfactory in an essential matter. Nationalist opinion cannot be happy over provision of aerodromes without aircraft. Without an aircraft industry the proposed plan of aerodrome construction is apt to be interpreted as an attempt to import obsolete machines from abroad in post-war years and not intended for the rapid economic progress of India. We hope that the Government would base their plans of post-war development of civil aviation on the solid industrial structure of aircraft production.

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AGRICOLOGICAL DEVELOPMENT OF INDIA

Agriculture is the basis of all industries and no scheme of post-war reconstruction of India can neglect the basic development of agriculture and the welfare of the rural masses. The Government of India have often emphasised agricultural development as essential for national progress but people have a suspicion that the aim behind too much emphasis on agriculture was to neglect the key and large-scale industries and do the best for pulling up agriculture and prepare the market for British goods. Recently, there has been sustained effort at studying the different facets of Indian agriculture and official report on fisheries, forests and the technological possibilities of agriculture have been placed before the public and the Memorandum prepared by Sir Pheroze Kharegat on the development of Agriculture and Animal Husbandry in India serves to clarify the postwar agricultural policy of the Government of India. The Memorandum places due emphasis on conducting surveys and enquiries in different regions, on the different aspects of Indian agriculture before any final programme of development should be chalked out. India is a vast country with wide diversities of climates, soils and cultivation practice. Exhaustive surveys and collection of detailed data are absolutely essential before agriculture can be planned and improved in India and the benefits of modern science applied to our villages. It is gratifying to note that the Kharegat scheme takes note of the vital deficiencies in the production and organisation of Indian agriculture and seeks to provide for an adequate and well planned national diet through proper planning. In this country of small cultivators, agriculture is a way of life more than an industry and nearly 30 percent of the population or over one hundred million people are habitually underfed. Planning for foodgrains looms large in any scheme of agricultural progress and Sir Pheroze fixes the target for different foodgrains as follows:

	Current Production (Million tons)	% of increase aimed at
Cereal	60.0	10
Pulses	7.5	20
Fats and Oils	1.9	250
Fruits	6.0	50
Vegetables	9.0	100
Milk	23.0	300
Meat, fish and eggs ..	1.5	300

Since the livestock in India is notoriously underfed, there is also the necessity for increasing the present production of oilcakes and other concentrates by 400 percent and fodder by 55 percent. Agricultural prosperity is closely linked with the correct development of animal husbandry. Cattle forms a useful instrument for cultivation purposes, yield milk for human consumption and also serve for pulling carts etc. At present the net output per animal in this country is one of the lowest in the world because of the inadequate feeding, indiscriminate breeding, indifferent management and recurring diseases. The Kharegat Memorandum seeks to achieve the goal of self-sufficiency in food and increase in the purchasing power of the people by the following methods. Firstly, the water resources of India shall have to be utilised for maximum agricultural production. At present, four-fifths of the cultivated area are unirrigated, and if the water resources of the country are tapped correctly the production is estimated to go up by 50 percent. Secondly, the utilisation of waste land has to be taken up. It is aimed to bring 120 million acres, now classified as cultural waste and fallow for agricultural use. Here again the first essential is a survey to determine the cost and an investigation to find out the reason for keeping large blocks of land waste and uncultivated. Soil erosion and terrific floods are great problems which have to be tackled correctly if agricultural outturn is to be increased and the yield from the soil maximised. Sir Pheroze rightly suggests a country-wide terracing and counter bunding after conducting engineering surveys village by village. The establishment of experimental farms in every division is also envisaged for carrying out experiments and supplying the cultivator with a schedule of cultivation suitable to his particular land and for his individual needs. The necessity of evolving an All-India manure policy is also emphasised and the need to conserve green manures, oilcakes pointed out. The Government are taking steps for the manufacture of economical fertilisers like ammonium sulphate with a view to supplying the ryots with valuable manures intended to increase the agricultural output. 5,000 seed stores would be opened for supplying most of the seeds needed for the growers. Different systems on farming have to be properly studied in all other aspects and an investigation in this connection is urged as a necessary preliminary for creating an organisation of agricultural cultivation.

The Memorandum seeks to increase the production from Indian flocks and herds adopting suitable methods for good breeding. 50 study farms would be established for this purpose as a beginning. Attention is also paid to the marketing of animal products and careful surveys of each tract should be conducted before the marketing programme is evolved. In order to offer attractive stimulus for the cultivators to put in greater and more willing effort in agricultural activities, it is suggested that the prices for his produce must be guaranteed and that the Government should maintain sufficient buffer stocks of foodgrains to achieve stability and the security of all concerned. Regulation of markets and the introduction of reforms calculated to abolish the uneconomic holdings are also suggested as the vital needs of Indian agriculture. Sir Pheroze has also stated emphatically that the Centre must take a lead in planning agricultural progress and should play a dominant part in the organisation on research facilities and the granting of financial assistance whenever funds are needed. The creation of a Federal Department of Agriculture to formulate and establish the general policies connected with all schemes of agricultural development in India is also suggested. Many of the activities of the Federal Department, it is stated, would be exercised through the Imperial Council of Agricultural Research which would become a Federal Agricultural Council. The lines along which research should be organised are detailed. It is proposed that the expansion of the Imperial Council of Agricultural Research Institute and the Imperial Veterinary Institute would be expanded into Federal Institutes for Agriculture and Animal Husbandry respectively. A chain of Commodity Research Stations and sub-stations would be set up in appropriate regions in India to deal with the different commodities or groups of commodities. The proposals for a Federal Department for agriculture are estimated to cost Rs. 300 lakhs only distributed as follows: (1) Federal Agricultural Council Rs. 8 lakhs, (2) Federal Agricultural Research Institutes Rs. 45 lakhs, and (3) Chain of Commodity Stations Rs. 135 lakhs. The rest account for the provision of grants to universities, funds for training of staff intended to fill high appointments. Maintenance charges on works and other items are not provided for.

In the past the villagers have not been able to profit by the achievements of modern science. Partly owing to the financial difficulties of the Provincial Governments and partly due to insufficient staff on the Provincial Agricultural Departments progress has been naturally impeded. The necessity to rectify this situation has been well emphasised and as a link between the research laboratories and the cultivators in the fields Village Guides have been suggested. The demobilised soldiers are recommended for these jobs and a Guide is liaison between technical experts and the village public. Reorganisation of the Provincial Agricultural Departments is also suggested and the recurring expenditure involved is estimated at Rs. 20 crores annually of which the Centre might provide Rs. 2½ crores.

The Kharegat Memorandum also specifies the order of priority of action to ensure orderly development and to secure maximum immediate advantages which can be derived from scientific and technological knowledge available till now. First priority is given to the training of staff which would take nearly three years. Secondly, technical surveys are emphasised and this take five years. Then the utilisation of irrigational researches, manuring, use of improved seeds, improved methods of cultivation, etc., would be taken up. Then come the creation of Federal Departments of agriculture, expansion of Imperial Council of Agricultural Research into a Federal Agricultural Council, etc.

Schemes and plans envisaged by the Special Committee of the I.C.A.R., presided over by Sir Pheroze, seek to increase agricultural production by a 100 per cent over the pre-war level. The attainment of this ideal naturally depends upon the accomplishment of several preliminaries and the construction of necessary works and therefore it is stated that production cannot be doubled in less than 15 years but a 50 per cent increase in production within 10 years is considered feasible. The total cost of attaining the ultimate goal is estimated at Rs. 1,000 crores of capital expenditure in British India, while the development would involve a recurring expenditure of Rs. 25 crores a year. Of this recurring expenditure Rs. 3 crores falls on the Centre and Rs. 22 crores on the Provinces. Though the Kharegat Scheme has not estimated the required capital with any scientific validity and even though the Memorandum submitted does not contain concrete schemes, the proposals of the Committee deserve to be welcomed by the public because they lay down correct emphasis on harnessing science to agriculture, on improving agricultural organisation and on the necessity for correlating agricultural developments with other schemes of national progress.

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POSTWAR DEVELOPMENT OF INDIAN FISHERIES

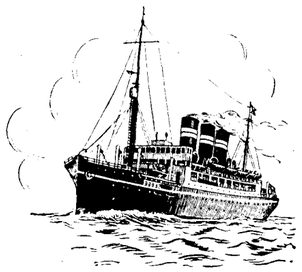
In India's war against food shortage, Fisheries may be said to form a Second Front. The sea is an immense store of a wide variety of fast-multiplying food fishes and offers pearls, corals, shells, etc., for human use. Fish is an article of human diet and a raw material for the manufacture of medicinal and industrial oils, bones, soaps, etc. Man had learnt the art of fishing even before he understood the value of tillage of land and throughout history the lure of the sea and man's attempts to catch fish have played a vital role in the destinies of nations. The seas contribute to equable climate, offer lucrative employment to thousands of families on coastal areas and necessitate the building of coastal crafts, trawlers and ships for fishing expeditions. Scientists have profited by systematic investigations into the plant and animal lives that thrive in the oceans and the advancement in the sciences of biology and engineering in turn have suspended up further exploitation of the oceans for human progress. While the progressive countries of Europe, U.S.A., and Japan have gained, by sustained efforts at encouraging the fisheries, India offers a sad contrast where only an insignificant part of the resources of the sea has been pressed into social service.

A study of the industrial development of fisheries abroad, particularly in England and Japan, suggests that Indian fisheries have a glorious future if only the Indian Government take a vital interest in this industry. In England the fish trade is extensively organised and consumes more than 300,000 tons of coal annually. Huge sums of money are sunk in providing fishing crafts, storage facilities and transport arrangements for the quick disposal of the catch. While the per capita consumption of fishes comes to 40 lbs for England the figure is very low for our country. In U.S.A. the fisheries and the fishing industries employed before the war nearly two lakhs of men and women annually, 1.3 million tons of fishes worth $109 millions were sold. The property and equipment of the industry were estimated at $210 million and every year about 11 million gallons of fish oil, besides huge quantities of fish glue, fish meal, poultry grit, etc., were extracted. In Australia fisheries had been neglected till recently owing to the difficulty of transport and the comparative cheapness of meat. But now a vigorous drive for more fish is being carried on with modern trawlers and boats. New Zealand has ever been proud of her high quality oyster and today more than 2,000 vessels are employed in the fishing industry. Fishery research has borne fruit and several North Atlantic varieties of fishes are successfully introduced in New Zealand waters. South Africa's record in this respect is excellent, and the extensive surveys of fishing grounds and the flourishing export trade in fish products achieved by her should inspire similar endeavours in India. Throughout the British Empire planned exploitation of the food resources of the sea has begun. It is not a day too soon for this country to evolve a plan for rational exploitation of the Indian seas.

India has a long coast line of 3,500 miles excluding the deltaic regions of the Ganges, the Godavari, the Krishna and the Indus. If this vast expanse is properly used for fishing purposes, India has no doubt a promising future in regard to the fisheries. The seaboards of the provinces like Bengal, Orissa, Madras, Bombay and Sind is yet to be exploited. Fish in Bengal is mostly obtained from inland waters, abounding in *hilsa, rohu, katla* and *mrigal*. Although fish forms an essential article of diet in this province, only 1.6 per cent of the population is engaged in fishing, and fishable water in the sea lies idle. It is a matter of deep regret that at a time when the whole of Bengal was on the throes of food crisis, flood, bombing and pestilence, the Government of India initiated a denial policy which resulted in an almost complete collapse of the fishing industry, particularly in the coastal districts. Unless adequate numbers of boats are constructed and given to the fishermen of Bengal, there is a danger of fishing population being thoroughly disorganised and the initiation of post-war fishery development plans in this province would be delayed very much. The fisheries of Orissa are very rich. The sea water, the Chilka lake and inland waters supply this province with fish in huge quantities. The principal fishing centres on the Orissa sea coast are Chandipur, Chandbali, Puri, Gopalpur Sonapur, Talpada, Markandi and Arkharkuda. The Chilka lake is a compact fishing area. About 75 thousand mds. of fish, consisting of *mullets, bhetki, pomprets*, etc. are exported from Orissa annually. Madras, offers splendid prospects for fisheries. The east coast of the province, being deficient in harbours, is no doubt unfavourable for fishing purposes; but if provided with large boats, it can yield much. The western coast, favoured with weather conditions, is more suitable for fisheries. The fishing population here totals about one and half lakh. *Seer, pomfret, jew fish, sardines*, etc. are obtainable on the west coast. In the Malabar coast nearly 54,000 tons of fish worth of £400,000 were caught annually in prewar years. While no estimate of the annual catch is possible for want of statistics, it is easy to see that the demand has been steadily growing and if proper storage and distribution facilities are forthcoming, progress would be remarkable. Fisheries in Bombay are mostly restricted to sea-waters. The province has a big coastline with excellent harbours. The fishing industry of the province has made striking progress in recent years and more is expected in future. Sind has both Indian as well as foreign markets for fish. In the year 1940-41, over 25 thousand maunds of fresh fish were exported to different places in India and more than 60 thousand maunds of dried fish were exported to Colombo, Hongkong, Singapore, Malay and South Africa. It is wellknown that the fisheries of the tropical regions differ from those of the colder seas and that the warmer water offer greater species of fishes while the cold waters reveal concentrations of particular varieties. Classifying industries into (1) inland (2) estuarine and (3) deep sea, we find that the deep sea fishing is practically non-existent in India, while inland and estuarine fishing is being carried on under crude methods without organisation or scientifically planned effort. The drive for deep sea fishing can be undertaken only if India secures or builds fleets of steamers, motor trawlers, drifters, liners and cutters. Experts have stated that if deep sea fisheries are fully exploited, the fish food requirements of the Indian population can be fully met and the establishment of factories for fish canning, fish oil, fish guano and fish meal can be made feasible and profitable. Even planning for exports is not scored out. The fishing industry, so vital for national well-being, has been relegated to the background and the halting and the half-hearted measures taken by the Provincial Governments have not improved matters materially. Like industries, agriculture and forests, fisheries have been entrusted to Provincial Government with poor resources and hence by sheer force of circumstances the Government of India have now come to realise the need for planning on an all-India basis. In the past, there had been a few attempts at deep sea fishing, but no substantial results have been achieved because of the absence of fishery harbours with facilities for landing of catch, packing, sale and despatch to different centres, and the lack of re-fuelling facilities. If refrigerating plants are available in adequate numbers and if shore organisations are well laid out, the prospects would be bright. Fishing is at present carried out by poor and ignorant men of low castes and, owing to the low price of fish and the difficulty of transport, capitalistic enterprise and organisation has been absent. It is clear that the initiative should emanate from the Central Government, if fishing industry and the fishermen are to thrive and contribute to national regeneration

The memorandum on "Postwar Development of Indian Fisheries" by Dr. Baini Prasad, Director Zoological Survey of India, is most welcome since it outlines a practical plan for the rational exploitation of Indian waters. To be rational a plan has to be based on complete understanding of the sea, the fishes, catching methods, organisation of the fish trade and economic uplift of the fishermen. Dr. Prasad lays due emphasis on the collection of statistics and organisation of marine research as essential requisites for initiating a correct plan for the development of fisheries. He recommends the establishment of a separate Central Fishery Research Institute (like the Agricultural Research Institute at Delhi) under a Director of Fishery Investigations. The location of the Institute will have to be decided by an *ad hoc* Expert Committee and its work will consist of four main sections, viz., (1) biological, (2) physio-chemical (3) statistical and (4) technological and educational. The Government of India in consultation with the Director of Fishery Investigations should constitute an *ad hoc* committee to draw up a detailed plan of enquiries the results of which will form the basis of subsequent schemes of development. A preliminary survey of the commercial fisheries of a country, such as fishing grounds, vessels and boats employed for catch, utilisation of fishery products, etc., is to be conducted. An Advisory Fishery Research Council composed of a number of experts in fishery and biological sciences and representatives of the Provincial and State fishery departments will have to be formed to guide the Institute and approve of the grants, staff etc., recommended by that body. Dr. Prasad has pointed out the need of training the fishermen in the use of modern types of boats and pleads for the resumption of marine survey activities for making detailed charts of Indian seas. In order to educate the fishing communities in improved methods of fishing, culture demonstration centres or fish farms have been suggested. A five-year plan of development is favoured, and the progress to be achieved in the first five years is clearly outlined in detail. The initial and recurring expenditure of the plan has not been indicated, but there is no doubt that expenditure on fisheries would, in due course, amply repay the outlay.

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POST-WAR FOREST POLICY FOR INDIA

The general public in India are not yet aware of the enormous importance of forests for comfortable and prosperous living. To many, forests are merely large inaccessible tracts of hilly land thick with trees and shrubs, harbouring various species of wild animals. The common man is yet to realise that the function of forests in Nature is to keep the climate equable, to prevent havoc, sudden or long-term, by floods or erosion and to provide an immense depository of very valuable materials needed for agriculture and industry alike. Certain recent occurrences have focussed public attention on the supreme importance of forests for public safety and welfare. First and foremost, the excessive floods in Bengal, Orissa and other places which took an unusually heavy toll of human lives and cattle wealth reminded the Government that forests served as natural dams softening the rigours of floods and that it is the recent unplanned destruction of forest tracts in different parts of the country, that has brought terrible floods in some areas. Secondly, the loss of Burma has opened our eyes to the necessity of outlining a scientific forest conservation and land utilisation policy for filling up the gap caused by the inaccessibility of foreign sources of timber. Houses, big or small, in towns or villages, cannot be built as speedily as population increases, unless the capacity of our forests is intelligently developed and economically utilised. The extreme scarcity of fuel has caused untold suffering to the masses, particularly during the past two years, and the various Provincial and State Governments had to accelerate the felling of trees to meet civilian demands. The heavy war demands for timber has been a forceful factor which has already speeded up the destruction of forests to dangerously excessive limits. Forest wealth, which had been poorly developed during normal times, has been greatly depleted under the strain of war demands. The paper shortage, acutely felt by schoolboys and newspapers, compelled us to think of our forests and their potentialities. Experts are now busy conducting surveys of different areas with a view to reporting on the possibility of developing the grass or bamboo which are the raw materials for paper manufacture. While the industrialists are looking to forests for cellulose, turpentine oil, lac, herbs, rubber etc., the agriculturists, who have keenly felt the absence of grazing and fodder facilities for their cattle, demand better forest organisation if they should grow more food as the Government want them to. Wartime urgency to grow more food has raised the problem of supply of adequate manures and fertilisers to the cultivators. While the manufacture of inorganic fertilisers has to wait for the import of machinery etc., it is widely felt that, if the 2500 million tons of cowdung now burnt by the poor villagers for want of cheap fuel is preserved for manurial purposes, the fertility of the soil can be greatly enhanced. The poor quality of Indian livestock, their low stamina and their heavy mortality are all related to the extremely poor grazing facilities in several parts of the country. Thus war and other recent happenings have thrown into bold relief the necessity of planning our forests for economic and social betterment of the teeming millions of India.

The following table showing the classification of land in the various provinces, shows the forest areas in the provinces in the proper perspective :—

Area cultivated and uncultivated in 1937-38 in provinces and States (as far as available)*

Provinces	Area	Cultivated		Uncultivated		Forest
		Net area actually sown	Current fallows	Cultivable waste other than fallow	Not available for cultivation	
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Ajmer Merwara	2,766	527	273	441	1,405	151
Assam	55,445	9,837	2,503	29,463	7,152	6,490
Bengal	76,966	38,638	7,318	8,990	15,015	7,005
Bihar	69,242	30,193	10,885	8 006	9,815	10 323
Bombay ...	76,128	44.868	7,905	1,388	8,942	13,025
C. P. & Berar	98,581	38,340	5.946	21,863	7,655	24,777
Coorg	1,581	226	257	18	562	518
Delhi	576	334	17	102	123	...
Madras ...	124,692	50,051	14,766	16 465	22,819	20,591
N. W. F. P. ...	13,402	3,295	900	4,456	4,199	552
Orissa	32,195	10,074	2,714	5,580	9,705	4,122
Punjab	93,992	42,651	5,775	22,133	20,347	3,086
Sind	47,156	8,052	7,615	9,218	21,170	1,121
U. P.	106,189	56,517	4,122	15,608	15,450	14,492
Total Provinces	798,911	333,582	70,996	143,701	144,379	106,253
Total Indian States (as far as available)	231,099	106,748	20,945	30,153	43,373	29,880
Grand Total (as far as available)	1,030,010	440,330	91,941	173,854	187,752	136,133

*(From *Agricultural Statistics of India*, 1937-38, Vol. I, page 4).

The public should feel grateful to Sir Herbert Howard, Inspector General of Forests, for his very valuable note on post-war forest policy for India. He has given details regarding the depletion of timber resources under the stress of war. He has also pointed out that "upto the end of the financial year 1943 there was an excess felling of timber of 162 per cent of all-India over the normal annual pre-war figures. Taken as a total, this means 1½ years advance fellings and is really an infinitesimal overdraft on the forest capital of India—far less than the advance fellings of most other countries." We are not sure how far a comparison of India with other progressive nations of the world yields a satisfactory result. But Sir Herbert himself admits that the demands of the general village consumer are at present most insufficiently met and that wartime felling of timber forests have upset the forest development plans in several provinces necessitating a thorough revision after the war. Only 14 per cent of the total area of India is under forests and in the light of the European average of 26% the inadequacy of our forest wealth is indisputable. Sir Herbert suggests "that it be laid down as a general aim that the area of properly managed forest land for

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India should be between 20 and 25 per cent and so far as possible, this minimum should be attained in each province and equally distributed throughout the province."

In British India there are 288,000 square miles of area at present classified as "cultivable waste" or "not available for cultivation," which could be developed for providing timber and fuel to the agricultural village consumer. At present there are only 106,000 sq. miles of forests in British India and another 100,000 square miles would correct the deficiency in India's forest wealth. As a basis of all-India, as well as regional, forest planning, Sir Herbert suggests an immediate provincial reclassification of land from the forest crop point of view instead of from the standpoint of aricultural crop. He draws pointed attention to the excessive grazing prevalent in large areas and opines that, if afforestation is to be a success, proper control of grazing would be essential. The cost of maintaining minor forests properly distributed throughout the country would be Rs. 5 to 10 lakhs per year. He suggests that the Central Government should appoint officers to deal with the question of floods, erosion and dessication and a Private Forest Act supplementing the present Indian Forest Act is suggested to prevent devastation of forest and to enable acquisition of lands for afforestation. The note also makes recommendations for organisation of Forest Education and Forest Research.

One may agree with Sir Herbert that the existing forest policy of India evolved in 1874 laid down excellent principles on forest matters. But pious wishes recorded on paper do not yield social good or economic gains. Though the Government of India is supposed to have adopted a forest policy as early as 1890 for the benefit of the people, the actual achievements since 1890 are not remarkable. Taking, for instance, the facilities for grazing alone, we find that forty-five years after the above mentioned date, the Agricultural Commission Report pointed out that the percentage of livestock grazing in forests to the total number in different provinces has been as follows :—

Bombay 13.4%
C. P. and Berar 25.7%
Madras 5.9%
Punjab 13%
U. P. only 2.6%

The forest administration has been all along guided more by commercial motives than by consideration of agricultural improvement. For instance the number of Indians well trained in forestry (though the training began in 1878) is inadequate. Very little progress has been attained in the matter of industrial utilisation of our forests. Since the International Forestry Congress held at Budapest in 1936 several foreign countries forged ahead in the matter of afforestation and better utilisation of forest wealth. India has been lagging behind in forestry as in other lines of progress. War has to some extent depleted our resources and emphasised the supreme necessity of conserving our forests. We hope that Sir Herbert's recommendations would be adopted as early as possible so that India's agriculture as well as industries could progress and open up new vistas of economic betterment .

The utility of forests for national progress should be viewed from three distinct standpoints : firstly, forests as a factor affecting the climate, rainfall, floods, soil erosion and fertility etc.; secondly, as a source of raw materials for industries, old and new, and thirdly, as the handmaid of agriculture, supplying fuel and timber for villagers, releasing cowdung for manure and affording pasture for livestock. Forgetting the errors of commission and omission in the forest policy adopted by the Government of India in the past, the ideal to be achieved in future is a well-co-ordinated forest development plan which would serve national welfare from the three aspects mentioned above. Throughout history forests have played a great role in shaping the progress of races and regions. To the primitive man they meant nothing more than dangerous spots acting as barriers to travel but in recent centuries man has learnt to use forests for his own advantage. With the advance of plant science, the science of soils and science of atmosphere they have come to be viewed as a biological entity which could be pressed to human advantage if only we understand the life history of the forests, their relation to climatic, soil and other environmental factors. Forests should be conceived as a plant society governed by definite natural laws capable of yielding unlimited benefit to human society. The Science of forestry, concerned with the production of wood crops like timber, has already progressed remarkably and we should be able to maximise the immense advantages that can be made to accrue from well-planned forests. We hope that the Government of India, instead of merely rectifying the drain on forest wealth necessitated by this war, should recognise the modern conception of forests and evolve a post-war development plan which would yield the greatest possible biological and economic advantage to the people of this vast sub-continent.

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SHIPPING PLANS AND PROBLEMS

In a speech at Bombay on December 7, 1944, the Viceroy drew attention to the value of a mercantile marine. He dwelt on the need for developing the merchant service to support the Indian Navy. Only the U.S.A. and Australia have a coastline longer than India's and Indian claims for the development of shipping received notice in the review of the training ships activities which has so far trained 719 cadets. The utterances of Admiral Fittzherbert and Godfrey in connection with the opportunities for a marine career have always stressed the high importance of a native shipping industry. It would be difficult to keep out transport from the development plans. During the war additions to both building and repairing facilities for example the provision of a small dry dock or the prompt repairs carried out in Bombay port within six months of the disaster of April last have been regarded as adjuncts to a future industry of great value to the country. Conferences have been held which are not concerned with shipping control or adjustment of freights but with the measures of encouragement applicable to Indian mercantile marine. The Indian legislature over twenty years ago appointed a committee that produced limited though visible results. The hope that greater effort leading to greater results should follow the present war certainly springs from the expansion of ship-building for the Indian Navy though many orders have gone to Australia.

The strong revival of popular interest in shipping policy after the war proceeds from a knowledge of what is contemplated as regards pooling of resources during the transition to peace and Allied intentions as regards enemy shipping. National ambitions are again formulated with an eye on the future and these determined the outline of what is possible (rather than probable) presented last month by the Commerce Member. Though it cannot be said that the conference at Bombay resulted in preliminary agreement, reiteration of the views recorded in the Second Report on reconstruction makes it clear that considerable expansion and improvement is desired. The delegates to the conference have to wait for another meeting in April to find whether their own views have made any impression on the authorities. It is, however, important to note that prescriptions as to ways and means of enlarging the mercantile marine have appeared betimes. In any case the consciousness of weakness has proved a spur to action. The maritime Indian States apparently share the views expressed regarding the development of an adequate fleet to serve overseas commerce. The British Indian delegates' views were more than endorsed by Sir C. P. Ramaswami Ayyar who must have remembered the promises made in 1932 and 1933 concerning the adequate development of the Indian shipping industry by the Central Government.

During the war period the dependence of India's trade upon foreign shipping has proved a source of weakness. It is not surprising that opinion as to the development of both shipping and shipbuilding has now taken a definite form as may be inferred from the speeches made in December at Bombay. At the outbreak of war India had 30 ships totalling less than 150,000 tons. In the view of naval chiefs India can and must develop the mercantile marine as a second line of naval defence. But the ships when they come must count upon employment, and for this purpose, the Policy Committee advocated acquisition of an adequate share in the near trades in addition to an increased share in coastal trade which at present is less than 25 per cent or varies between 20 and 30 per cent, to quote the latest official estimate. The last war gave India no chance to get going as a maritime nation. The Central Legislature set up committees to review the problem but the only results were the establishment of a training ship and an award as to the sharing of coastal trade.

For the situation during the war when control has led to major changes the Government cannot disclaim the responsibility. From the hints as to postwar policy there are definite objects to pursue and the aims concerning a share in trade with the Orient and Europe are sufficiently precise to give Indian shipping greater scope. Shipping, both riverine and ocean-going, is required to deal with the increase in traffic. Organisation of country craft has proved useful in recent years to make a demand for its retention after the war intelligible. In the two paragraphs of the report referred to setting out the limits or lines of development the positive claim as to an increased share in coastal and oceanic trades recur. Britain's shipping industry has extracted assurances from the Government regarding replacement, and has prepared to deal with problems of competition. The shipping industry in Britain has set out the case against subsidies while propounding its own views as to replacement of lost tonnage. Indeed the General Council of British shipping has looked beyond the pooling arrangements for the transition to the restoration of a powerful marine able to hold its own against the greatly expanded fleet of the U.S.A. A claim as to diversion of surplus tonnage for the benefit of India and other backward countries has been advanced even as it has been said that independent plans for the purchase of U. S. ships are under consideration both by private interests and by the Government.

There is no way of indicating the proportion between new construction and war losses or of evaluating its effect on postwar shipping policy. We are not immediately concerned with the disposition of the surplus for the benefit of Norway or Greece ; countries which ordinarily depend to a considerable extent on their shipping rather than trade but with the means that should be adopted for the realisation of the fairly precise objectives—an enhanced share of the carrying trade for Indian vessels. A rigid definition as to Indian has been supplied by Mr. Walchand Hirachand in his speech to the Postwar Shipping Policy Committee but it will be agreed that his arguments relating to previous mistakes on the part of the Government have greater force than his citation of requirements. Indian shipping could not cut into the oversea carrying trades and had to take an award as to the Haj traffic. These unfortunate experiences certainly justify conclusions as to Government having developed something worse than actual indifference to Indian shipping. But what has been said by the Commerce Member about consultation again with official and non-official interests should suggest that the control would not only be relaxed but adapted to the development of a mercantile marine. It has been duly made known that Indian shipping has to receive due compensation for its wartime sacrifices and the kind of reward sought has the merit of conforming to what has been said about a substantial share for Indian shipping in the near trades and a fair share in the Atlantic and Far Eastern trades. The most interesting claim made in this behalf is that shipbuilding in India is now a full-fledged industry but is not allowed to build ocean-going ships. Elucidation of this charge, and its grounds, will certainly be required before the next meeting for one of the non-contentious conclusions reached after the meeting in December is that India must build rather than buy ships in the future. Estimates as to costs, opportunities, sites etc. antedate the war ; and the problem of building marine engines will doubtless be regarded as one that can be dealt with ad hoc. Though a question will arise as to fuel, it is manifest that oil cannot be regarded as the logical fuel. Additions to repair facilities in the war offer an advantage as to the future. Dockyard extensions and the increase in equipment indicate that Indian ports have already been improved to deal with the probable increase in traffic. The line of least resistance for many is the reservation of coastal trade without any excessive regard for either past prejudice or the commitments that may be entailed by an international shipping agreement. The attitude of reserve shown by the conference arranged to deal with postwar shipping policy however checks optimism as to the kind of protection that may be afforded. Interesting questions as to oil and coal, steam and sail, liner and tramp will arise in the future. But there must be concentration on a general utility vessel, suffi-

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ciently fast to attract freight and sufficiently cheap to run. The substantial rise in Indian seamen's wages indicates that after the war a familiar advantage will be denied to Indian shipping. The plan of development that Indian shipowners might offer must cover improvement in opportunities for employment of Indian. Not long ago there was discussion of the restricted chances that Dufferin trainees obtained at home.

During the Bombay discussions little was said about what the State could do. Dominion example in regard to shipping and shipbuilding was passed over (not inadvertently, we hope). A national maritime commission empowered to deal at the outset with the tricky problem of reservation of coastal traffic would be welcome for the reason that its motives and policy would not be challenged by the vested interests against which many tilt. Shipping is still a business that can be run on safe routine lines if the initial large investment can be made, but we may note in passing that the shipping Policy Committee excluded altogether the acquisition of vessels by the State. A State line indeed would leave no room for controversy over mail subsidies or the conduct of ancillary air lines. But the maritime Indian States would look for a share in this case, and if their own example offers some guidance at present it is not yet clear how they would accept British Indian predominance in the matter of State shipping. As transport is nationalised to a large extent, it may be possible to reconcile all just claims with the requirements of the future. There is an insistent need for development. There is a surplus of Allied tonnage to be disposed of rapidly after the war. There is also the capital that can be invested in an industry with tangible postwar prospects. To these favourable conditions may be opposed the usual arguments for freedom of enterprise, but attention must be drawn here to the lack of any private plants for development beyond the trite demand for special protection. It is useful to add that combined ownership of steamers and railways is not uncommon, and any special encouragement to local shipbuilding that may be given could certainly be expected from a semi-public, statutory corporation. Departures in State control and operation, over and above the necessities of war, deserve study owing to the real difficulty of acquiring ships from abroad unless the demand emanates from the Government. Under State auspices the shipping industry's accelerated development would not excite disapproval from any quarter and the nucleus of a control organisation already exists for vessels on the Indian register are not subject to outside authority at present. Given the conditions that may exist after the war, it would be preferable to rely on State organisation in this case, and the semi-independent status given to the Railway Board indicates how an organisation should take shape in this case. It is true that the issue did not at all figure at Bombay but it is useful to remember that arguments for Protection imply acceptance of control of one kind or another. Since compensation in the event of large-scale entry into the field of shipping would be limited, it may be necessary to discard crude theory for a plan of real practical value.

In the future the share of both enemies and neutrals in world shipping may be reduced by arrangements devised in order to let certain countries keep as much shipping as possible. This will lead to questions as to what India might get provided she places orders for new tonnage in Britain even while she develops her own shipbuilding yards. The previous Tariff Board enquiry indicated that ships for inland navigation and use in harbours could be made successfully with existing facilities and it is no longer a question of tariff protection for Indian steel that concerns shipbuilding. The maritime defence measures that a new Army reorganisation committee may recommend will call for the development of small coastal craft for defence; and shipyards to work well must have both civilian and naval orders.

The greatest measure of agreement is likely to be reached as regards ship-building for the preponderance of the U.S.A. makes it necessary for all parts of the Empire to develop local resources. The more important questions, as pointed out relate to subsidies, reservation of coastal traffic and the use of commercial policy to win a share in carrying trade. The General Policy Committee's memorandum representing the maximum attainable has therefore led to vigorous exposition of national desires. What a future conference might propound in the light of arguments advanced would probably depend upon the political background since shipping is singularly susceptible to political conditions and a vigorous shipping policy can begin only after a satisfactory Indo-British settlement.

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DEVELOPMENT OF ELECTRIC POWER

Increased production and maximum utilisation of power is one of the first requisites for the success of any planned drive for economic prosperity of India. The industrial history of the leading nations of the world points out in unmistakable terms to the necessity of conserving and exploiting all possible sources of power whether the motive power is obtained from wind or water, from the sun or the tides, from coal, petroleum, oil, gas, wood, charcoal or power alcohol. In this age of mechanisation and mass production the availability of power often fixes the upper limit of industrial expansion. India is now on the threshold of a new era of all-round industrial activity and the wartime factors have revealed that if the industrial expansion is to be evenly spread on all the provinces and states, an exhaustive enquiry of India's power resources should be first undertaken and all the post-war plans finalised on the basis of the findings of such an enquiry.

The position at present regarding the avilability of power in India is as follows: 95 per cent of the known coal deposits are found in Bengal and Bihar and the industries in other provinces which use coal or steam generated electric power are obliged to obtain requirements from long distances. The petroleum resources are admittedly meagre and, together with the defective location of coal in one particular area of this vast country, the necessity to explore the hydro-electric sources has now assumed great urgency. At present, the industries in the city of Bombay use electric power supplied by the Tata Power Companies, while the Ahmedabad mills and factories obtain power generated from steam turbines. Owing to the paucity of coal and its high cost South India looks more to hydro-electric power for the rapid exploitation of her minerals and raw materials for industrial purposes. Our coal resources are utterly inadequate for serving the ambitious post-war plans. Coal is expensive in most other provinces and if the industries of all provinces should depend only on the Bengal and Bihar coal, it would involve an expensive and unnecessary strain on the railway transport. Further, electricity developed either from water resources or from thermal stations tends to be cheaper in several areas and an orderly and well-planned regional development of small-scale and cottage industries can be achieved only by the rapid development of electric power. Electric power will be in great demand as the chemical industries and those connected with basic steel, such as tube makings, rolling mills, forging plants, sheet mills, etc., receive the attention they deserve.

India offers vast scope for the development of hydro-electric power. Whether hydro-electric power is cheaper than coal or the power generated from thermal stations still remains a controversial issue; but it should be appreciated that the cost factor is the result of several shifting circumstances and, at any rate, the sources of hydro-electric power should not be left untapped on the score of cost alone. In Bombay it has been found out that hydro-electric power is cheap enough to stimulate industrial activity though the enterprise of the Tatas was greatly responsible for tapping the water resources. It is contended that "the seasonal flow of rivers, the costliness of storage, the long transport and transmission lines which are required increase the cost of hydro-electric power in India." But experts have suggested practical measures to decrease the cost and, if the industrial expansion of India takes the course it is intended to by the nationalist planners, the day will not be far off when the cost would be reduced to desirable levels. Factory expansion and electric power development are closely inter-dependent and while in some areas water resources may offer excellent scope for hydro-electric supply (which involves heavy initial capital expenditure), but in several other areas, not so well blessed by nature, the thermal stations well connected in a correct grid system would serve the local requirements better. Electric power encourages greater production and greater activity offers the load necessary to keep the cost of power within the reach of the average industrial consumer. The Central Government, who are at present drawing up plans for post-war development should complete their investigations of power production and distribution in all Provinces and States and then correlate the power schemes with other industrial and agricultural programmes for different regions.

The possibilities of hydro-electric power in India have remained practically unknown before the publication of the Meares' Report containing the findings of a hydro-electric survey conducted in 1918. It was shown that India could easily produce 5½ million kilowatts of electrical power of which only 59,000 was then being actually utilised. Indian industries were estimated to consume above a million horse-power, but not more than 285,000 horse-power was supplied by electricity from steam, oil or water. The water power then surveyed amounted only to 1¾ million horse-power and the great potentialities of almost all big rivers of India had been unsurveyed. It was estimated that the seven great rivers could be made to yield not less than 3 million horse-power for every thousand feet of fall from the Himalayas. A thorough investigation of the potentialities of our rivers should now be undertaken by experts if post-war plans are to be initiated correctly for the maximum advantage of all provinces. The Government of India have undertaken to do this work and the final report of the experts has not yet been published.

A brief summary of the existing and proposed hydro-electric works in different parts of India would be useful in understanding the present position of power distribution and the future prospects. The following table from the Report on "The Location of Industry in India" by the Economic Adviser to the Government of India would clearly reveal the regional trends in electric power production and consumption:—

Provinces	Units Generated		(000 omitted) Units consumed for industrial purposes	
	1938-39	1942-43	1938-39	1942-43
Bombay ..	950,479	1,114,377	491,375	669,315
Bengal ..	516,374	681,011	373,633	487,684
Madras ..	190,423	329,484	117,500	192,428
United Provinces ..	156,865	304,329	114,004	170,824
Punjab ..	62,697	106,008	24,188	45,976
Delhi ..	33,924	56,712	15,308	21,864
Bihar ..	46,340	68,690	39,959	62,407
Sind ..	25,702	29,263	10,349	8,720
Central Provinces ..	13,909	16,231	5,624	8,604
Assam ..	2,222	1,472	455	297
N. W. F. P. ..	2,361	1,108	472	469
Ajmer ..	1,484	2,664	504	671
British Baluchistan ..	1,672	2,346	522	533
Orissa ..	866	643	302	247
Total ..	2,004,418	2,714,338	1,194,195	1,670,239

For Bombay the three schemes developed by Tatas, *viz.*, (1) The Tata Hydro-Electric Power Supply Co., Ltd. (started in 1915); (2) The Andhra Valley Power Supply Co. (started in 1922); and (3) The Tata Power Co., Ltd. (started in 1927), are the most important. The continued normal capacity of the above three schemes is 246,000 horse-power. Sivasamudram Scheme in Mysore, initiated in 1902 has now a capacity of 69,000 E.H.P. and serves the gold mines, *viz.*, at Shimsha Falls, the Jog Falls, for the production of about 47,000 h.p. The Pallivasal Scheme in Travancore had a load of 6,000 k.w. in 1941-42 and served 19 distribution centres and shortly the requirements of Cochin will be met by this scheme. The three important undertakings in Madras are (1) The Pykara Scheme; (2) The Mettur Scheme; and (3) The Papanasam Scheme. The Pykara Works were completed in 1932 and has a potential capacity of 40,000 k.w. Taken together they promise to supply the present requirements of all parts of the Province. Kashmir has three hydro-electric schemes with a capacity of 20,000 h.p. and serving the lighting requirements of Srinagar and Baramulla and the State silk factory. Seven out of the ten falls available for electrification in the U. P. have been exploited and as many as 93 towns in the districts receive regular supply of electric power. The Mandi Scheme in the Punjab was started in 1926 and the initial installed capacity of the Shanan Power Station is 48,000 k.w. The various sub-stations supply power to 60 towns and villages. Besides 25,000 consumers, the N.W.R. workshops, the P.W.D. workshops, the Amritsar Municipality, the Jullunder Electric Supply Company and the Kapurthala State are benefited. As for Hyderabad it has been estimated that the Godaveri and the Krishna alone could be made to give 3,36,000 k.w. while the tributaries can be harnessed for another 85,000 k.w. The potentialities of hydro-electric works in Hyderabad can be best appreciated only if one understands that besides industries, 3½ million acres can be well irrigated by the schemes in the State. Hyderabad has eleven important schemes which if developed would serve all parts of the State.

It has been estimated that India has not yet tapped even one-tenth of the hydro-electric sources ascertained to be eminently practicable. Assam and C. P. and Berar offer great scope for hydro-electric development, but experts opine that Bengal would do well to establish thermal power stations besides harnessing hydro-electric projects.

The technical conference on Post-war Electric Power Development held last year had drawn the attention of the Government of India to the urgency of evolving a co-ordinated plan of power development for India as a whole. Having studied the various provincial and State schemes now under consideration, the members

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of this conference have offered valuable advice regarding several important topics, like the inter-connection of thermal and hydro-electric stations, the need to restrict further extensions of direct distribution systems, etc. Regional co-operation is emphasised with particular reference to Bengal and Bihar, the Punjab and N.W.F.P. Bombay and Baroda. Directions regarding technical matters like voltage have been laid down and early completion of regional plans is urged. The Technical Conference has further indicated the power equipment (like turbo-alternator sets, boilers, transformers, condensers converting plant, etc.), needed for implementing the power scheme. It has also favoured the setting up of a Central Technical Power Board to scrutinise and co-ordinate all existing and potential power schemes in India.

The Government of India have now announced their decision to constitute a Central Technical Power Board whose functions are as detailed below:—

(*a*) To survey the electric power requirements of any region which would appear to exhibit *prima facie* the need of an electricity supply scheme, but where no comprehensive plan appears to be in hand.

(*b*) To assist Provincial or State Governments in formulating electric power development schemes, when requested to do so by such Governments.

(*c*) To investigate and bring to light the prospects for the utilisation of electric power in any region where it would appear that the economic development of that region could benefit thereby.

(*d*) To prepare project reports outlining electric power development schemes, including recommendations for the organisation proposed to carry out any schemes, together with estimates of capital expenditure, revenue and an appreciation of the economic effect on the region under consideration. Such project reports then to be presented to the Provincial and/or State Governments affected with a view to encouraging the appropriate authority to implement the scheme.

(*e*) To formulate schemes for the widespread development and utilisation of electric power supply wherever a supply is not already available or where not provided at economic cost.

(*f*) To maintain contact with all Provincial or State Governments and assist such governments with advice on the method for the further development of electric power throughout their territories.

(*g*) To encourage in collaboration with Central, Provincial or State Governments irrigation and agricultural authorities, the development of power irrigation and rural electrical development, wherever such schemes can be expected to assist the economic condition of the agriculturists and rural communities.

(*h*) To become the Central authority responsible for the load direction and collation of hydro-graphic surveys throughout India on a recognised standard basis. In carrying out this work to encourage Provincial and State Governments to develop their hydro-graphic surveys assisting such Governments where necessary to do so by the provision of supervision of their survey methods.

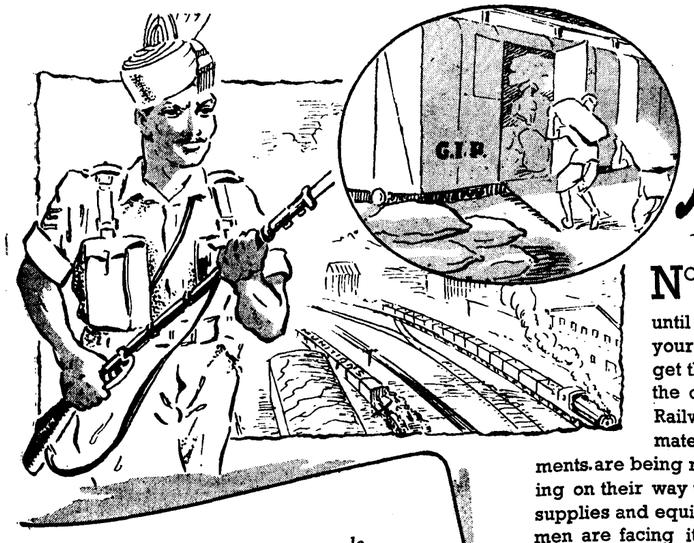
(*i*) To review and lay down for the whole of India standard voltages and practices for generating transmission and distribution of electricity. Where proposals are made which depart from these standards, the attention of the authorities concerned to be called to the disadvantages of non-standard apparatus.

(*j*) To initiate the broad lines of research programmes desirable for the requirements of the special conditions of electric power developments in India.

(*k*) To initiate propaganda for the education of the public in the uses of electricity.

(*l*) To initiate and devise schemes for the training of Indian engineers in the specialised field of public electricity supply.

The problem of the management of electric supply undertakings has also to be taken up by the proposed Board if regional development is to be well-co-ordinated and even. Being a provincial subject electricity supply organisation in the provinces did not present any uniformity in the choice of agency for power undertakings. While Bombay has allowed private enterprise to thrive, the Provincial Government plays an active role in the Punjab. There is a move to make electricity supply a monopoly of the Government in Madras. The need for advice in this matter is clear and the Central Board would have to consider this problem and also advice if every province or State should have an Electricity Board.



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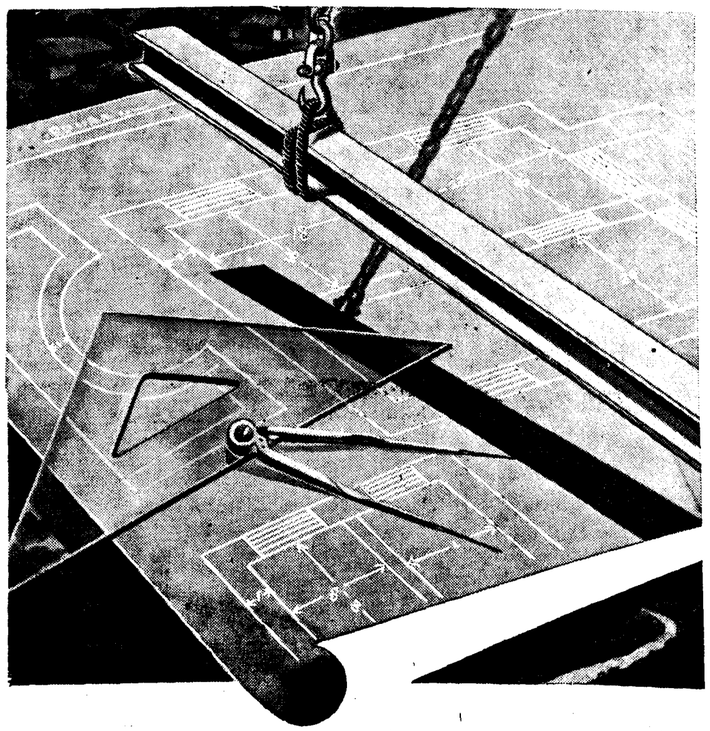
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PLANNING ON THE POPULAR FRONT

THE BOMBAY PLAN

The present war has stirred wide interest in problems connected with planning and circumstances have so shaped themselves as to stir up the official and non-official minds towards the fundamental problems of Indian economic development. Wartime controls, the strain on transport and the urgent need for greater supplies have all opened the eyes of the Government to the present deficiencies caused by the lack of foresight and planning and to the consequences of neglecting planning on a comprehensive basis. Events have shown that planning has to be done with as little delay as possible before the end of hostilities. We may say that the Government is interested in planning from one angle while the indigenous big business interests, grown prosperous and powerful during the war, have also chosen to come forward with their own ideas of economic progress of this country. Unfortunately, while all the world over free countries are planning fast, and comprehensively, the Government of India here have been rather too slow in formulating a comprehensive and coordinated plan of economic progress for India. Besides the halting policy of the Government of India, the fact that it is subordinate to the British Government and is not responsible to any properly constituted legislature, or responsive to public opinion for that matter, makes it imperative on the part of the Indian public to think aloud on economic problems which would face this country just now and after the war. The suspicion that Government of India would, if left to themselves, evolve an economic plan for India suited to British interests and exports than to the abiding interests of this country is widely prevalent among the commercial bodies in India. The necessity, therefore, for educating the public as to the potentialities and requirements of India has become urgent and properly appreciated in all quarters. Further, planning in an undeveloped country like India would have repercussions not only inside but over different parts of the world because India promises to be a great market to foreign manufactures and is a source of supplies of vital raw materials. Planning India's progress therefore has to be done not merely against a national background, but against the complete set of forces that may develop when hostilities cease. There are many "ifs" and "buts" in the way but the necessity of educating the public to know what planning implies, to understand the deeper implications of the Government of India plans and to be more expressive regarding their own aims and desires is always there.

Among the postwar plans for India published for the past one year and more, four have gained wide popularity viz. (1) Bombay Plan. (2) People's Plan. (3) Gandhian Plan and (4) Visvesvaraya Plan. The memorandum outlining the Plan of economic development for India known as the Bombay Plan which is prepared by eight leading industrialists like Sir P. Thakurdas, Mr. J. R. D. Tata and others have done a signal service in focussing pubic attenton and discussion on this vital subject. The Bombay Plan was not a complete scheme and did not refer to such matters as the organisation, distribution methods and technique required for the carrying out of the plan. These subjects have been dealt with in Part II of the Plan which was published laterly. The objective put up by the industrialists is to treble the national income within a period of fifteen years from the starting of the Plan. The income position envisaged under the Plan as compared with the position in 1931-32 would be as given in the table below :—

	1931-32.		At the end of the period of the Plan.		
	Income crores. Rs.	% composition to total income.	Income crores. Rs.	% composition to total income.	Increase %
Industry	374	17	2,240	33.9	500
Agriculture	1,166	53	2,670	40.5	130
Services	484	22	1,450	22.0	200
Not classified	176	8	240	3.6	36

The Plan aims at increasing the national income by establishing a balanced economy, that is, by increasing the percentage contribution of income from industry, agriculture and services. Even at the end of the 15-year Plan India would remain essentially an agricultural country. Regarding the industries, it is recognised that the basic industries should be developed as rapidly as possible and adequate scope should be provided for small-scale and cottage industries along with large-scale industries, and that the consumption goods industries should not be neglected. It is argued that the "net product" ratio to capital varies according to industries and to the extent to which capitalistic methods of production are employed and technological advances are made use of. It is calculated that on the assumption of a ratio of capital to net product at 2 for a net industrial output of Rs. 2,240 crores the industrial section of planning would require a capital of Rs. 4,480 crores. As regards agriculture, it is held that not more than 130 per cent increase in agriculture will be absorbed in this country and no ambitious schemes for exporting agricultural produce in the initial years are outlined. Fundamental reforms to eradicate the evils of fragmentation of holdings, agricultural indebtedness and soil erosion etc., are suggested and the need for rationalising agriculture in matters of irrigation, rotation of crops use of better seeds and manures is emphasised. A plea for readjustment of areas under cultivation to increase production necessary to feed the growing population is also entered. There is also provision for a comprehensive scheme of model farms. The agricultural section of the Plan is estimated to call for Rs. 1,095 crores of non-recurring expenditure and Rs 1,050 crores of recurring expenditure.

As regards the means of communication it is proposed to add 21,000 miles of new railways at a cost of Rs. 434 crores with a maintenance cost of Rs. 9 crores making in all a route milage of 62,000 miles (as against 41,000 miles in 1938-39). The Plan adds three lakhs miles to the existing 74,000 miles metalled and 226,000 miles non-metalled roads at a cost of Rs. 300 crores the maintenance of which is estimated at Rs. 35 crores. The cost of metalling the existing non-metal roads of 226,000 miles comes to Rs. 113 crores. More harbours would be constructed at a cost of Rs. 50 crores the maintenance of which is estimated at Rs. 5 crores. The communications part of the Plan therefore calls for Rs. 897 crores in non-recurring expenditure and Rs. 49 crores in recurring expenditure. The necessity to eradicate illiteracy, to impart cultural and vocational education, train an army of technicians, workers and demonstrators, the need for surveying our natural resources are all duly emphasised. The educational section of the Plan calls for Rs. 267 crores of non-recurring expenditure and Rs. 237 crores of recurring expenditure. Cost of housing is estimated at Rs. 2,200 crores of non-recurring expenditure and Rs. 318 crores of recurring expenditure with a capital expenditure of Rs. 200 crores.

Regarding the sources of finance the planners have dealt with (1) external finance and (2) internal finance. External finance of the country are estimated at Rs. 2,600 crores made up as follows :

	Rs. Crores.
The country's own credit balances in the form of sterling balances	1,000
The hoarded wealth of the country in terms of gold and treasures likely to be invested in the form of capital	300
Foreign loans	700
Favourable balance of payments over a period of 15 years at Rs. 40 crores per annum ..	600
Total ..	2,600

Internal financial resources of the country are estimated at Rs. 7,400 crores as follows:—

Savings	4,000
Created money	3,400
Total ..	10,000

It is pointed out that capital or finance should play only a subservient role is planned economy and that since created money is of a self-liquidating character, there is nothing unsound in evolving a financial policy involving fiat money. Created money no doubt creates a gap between purchasing power in the hands of the people and the volume of goods available. There will be the problem of bridging the gap and arrangements for an equitable distribution of the burden between classes of the population have to be made by the Government. As regards the phasing of the 15-year Plan two

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guiding considerations are to be borne in mind. (1) Priority should be given to basic industries. (2) The sacrifices involved as a result of planning should be borne by all sections of the people. The authors of the Bombay Plan, however, are aware that the three errors of the Russian Plan, namely, (1) over-emphasis on heavy industries (2) indifference to consumption goods and (3) enthusiasm to build up plans which took up years to commence operations, should be carefully avoided.

The following table gives the 15-year Economic Plan in different phases :

(In crores of Rupees).

	Basic income 1931-32.	First Plan. Increase in Capital income.		Second Plan. Increase in Capital income.		Third Plan. Increase in Capital income.		Total for 15 years. Increase in Capital income.	
Industry	370	790	330	1,530	636	2,160	900	4,480	1,866
Agriculture	1,165	200	242	400	484	640	774	1,240	1,500
Services	434	410	93	970	219	2,900	654	4,280	966
Not classified	176	..	21	..	21	..	22	..	64
Total ..	2,200	1,400	686	2,900	1,360	5,700	2,350	10,000	4,396

The increase in income for the 15-year Plan has not been calculated in detail though optimum national income at various stages of the plan is specified. The national income at the various stages of the Plan is estimated to increase as shown below :

(In crores of Rupees).

Sector of National Economy	1931-32	On completion of the Plans. 1st Five year.	2nd Five year.	3rd Five year.
Industry ..	374	704	1,340	2,249
Agriculture ..	1,166	1,408	1,892	2,666
Service ..	484	577	796	1,450
Not classified ..	176	197	218	240
Total ..	2,200	2,886	4,246	6,596

Underlying the whole plan are certain definite assumptions on the part of the authors. Firstly, it is assumed that on the termination of the war, or shortly thereafter, a National Government will come into existence at the Centre which will be vested with full freedom in economic matters. In the second place, it has been assumed that the future Government of India will be constituted on a federal basis and that the jurisdiction of the Central Government in economic matters will extend over the whole of India. The authors emphasise that no plan of the kind they have proposed will be feasible except on the basis of a central directing authority which enjoys sufficient popularity and possesses the requisite powers and jurisdiction. In the third place, it is assumed that, to facilitate planning, there will be a National Planning Committee under the Central Government and that this committee will be responsible for drawing up plans. It is also assumed that the actual execution of the Plan will be the function of a Supreme Economic Council working alongside a National Planning Committee under the authority of the Central Government. In the fourth place, there is the implicit assumption that, be it called National Government or not, the future Government will be such as to inspire confidence in, and secure the goodwill of the population. There will be general agreement with the force and validity of these assumptions.

THE PEOPLE'S PLAN

The Indian Federation of Labour has published the report of its Postwar Reconstruction Committee, or "the People's Plan for the Economic Development of India." It is not as is generally supposed a counter blast to the industrialists Plan or the Bombay Plan as it is popularity known. Here the emphasis is laid on agriculture and the immediate welfare of the rural masses. The People's Plan is more comprehensive than the Bombay Plan and serves as a clear announcement of Indian labour's postwar ambitions.

The Plan covers a period of ten years and involves an expenditure of Rs. 15,000 crores to be distributed as follows :

1. Agriculture Rs. 2,950 crores.
2. Industry Rs. 5,600 crores.
3. Communication Rs. 1 500 crores.
4. Health Rs. 760 crores.
5. Education Rs. 1,040 crores.
6. Housing Rs. 3,150 crores.

A capital expenditure of Rs. 1,600 crores for the first three years of the Plan is estimated. It is argued that this investment of Rs. 1,600 crores into the national economy in the first three years of the Plan would yield the necessary finances for subsequent development. Care is taken to see that this initial expenditure is concentrated on those items which bring in immediate returns. One of the most arresting features of the Plan is that nearly 66 percent of the initial expenditure on agriculture has been concentrated during the period of the first five years of the Plan as against 20 percent on industry. The expenditure on Communication begins only in the fourth year, while Housing schemes would be taken up only in the fifth year. Thus the earliest phase of the economic development conceived by the Indian Federation of Labour would be a five-year period of agricultural development, while industrial development would be taken up only in the second half of the planning period. In the last analysis, the growth of industries as well as adequate provision for health, education and housing services depend upon the growth in the purchasing power of the masses which, in turn, depends upon general agricultural improvement. The People's Plan therefore lays immediate and supreme importance on putting agricultural development first before anything else. An increase of agricultural output by 400 percent (compared to prewar years) is aimed at. At present, agriculture is notoriously enefficient and is in the clutches of antideluvian and feudal forces. The Peoples' Plan seeks to modernise the whole system outright by pleading for nationalisation of land, abolition of usury, introduction of mechanisation and collectivisation of agriculture. Extreme fragmentation of land and excessive indebtedness and heavy pressure on arable land at present operate as deadweight against agriculture and make it impossible for industries to absorb more and more of the surplus agricultural labour. The People's Plan therefore seeks the abolition of out-moded systems of land tenure and recommends the generalisation of the recommendation of the Land Revenue Commission of Bengal (1938) favouring the acquisition of the entire land in the country in permanently or temporarily settled feudal areas after providing to the parties concerned a compensation seven times the net income in the form of 3 percent 40-year bonds. The deadweight of agricultural indebtedness is sought to be liquidated by scaling down the debts to 25 percent and paying them off through the issue of long-term bonds. On the side of agricultural production the plan favours maximum mechanisation of cultivation, extension of irrigation, provision of manures, improvement of seeds and improvement in livestock. Collectivisation of agricultural operations is favoured as necessary for facilitating intensive cultivation. It is also hoped that if an organised attempt is made to increase the area of land under cultivation, nearly 50 percent or more of the present area sown can be brought into efficient cultivation. Due emphasis is placed on soil conservation, utilisation of foreign resources etc. The special feature of the Plan is provision for 25,000 State farms equipped with modern economic equipments and adequately provided with a research institute. It would be the function of these farms to lease out implements to the surrounding areas, demonstrate the methods of cultivation and help in quickening the processes of voluntary collectivisation of farming. The extension of cultivation by about 50 percent of the present area sown will, if possible, open up profitable avenues of employment for the landless proletariat.

The People's Plan also aims at 600 percent increase in the industrial output and outlines ambitious schemes of expansion of communications. It demands that the route mileage of the railways should be increased by about 50 percent, that of the roads by 150 percent while internal navigation and coastal shipping will also be speedly developed. The State shall have to play a prominent role in piloting the different phases of the plan and hence is well armed with powers of controlling the different sectors of the national economy. The State is to finance a huge programme of social services like housing, health and education. Here, again, the special feature of the People's Plan lies in the fact that it pleads for State control of the processes of distribution of commodities. A network of alternate channels of distribution in the form of cooperative societies will be established and the collective farms in the rural areas and the State controlled industrial plants in the urban areas would be made to serve as wholesale cooperatives. Thus a net work of cooperatives extending throughout length and breadth of this land would be in charge of the regular and satisfactory distribution of commodities to the consumers.

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As regards the question of financing, the Plan involves an expenditure of Rs 15.000 crores. The Plan suggests the following methods of obtaining the funds:—

	(In crores of Rupees)
Sterling balances	450
Initial finance-estate, duty, etc. ...	810
Income from nationalised land in the pre first year of the plan	90
Income from agriculture for reinvestment during the period of the plan ...	10.816
Income from industries for reinvestment during the period of the plan ...	2.834
Total ...	15.000

As regards the practicability of the scheme The People's Plan is no better than any other published in India as yet. Even if a National Government were to be established, it would not be an easy task to abolish the age-old customs and laws governing the land tenures in this vast subcontinent. It should not be forgotten that agriculture in this country is not an industry but a way of life. It is the socio-economic changes consequent on drastically overhauling our agriculture that have to be borne in mind before tall talks of fundamental changes in Indian agriculture are broadcast. The objectives of the People's Plan are no doubt attractive and it is interesting that this so-called plan of India's labour does not overlook the fact that during the period of postwar economic development private enterprise cannot be altogether abolished. The proposition that profit from private enterprise should be limited to 3 per cent, the State making a guarantee when profits fall down, bristles with practical difficulties which may not be fully appreciated by the layman. Yet, The People's Plan seeking to abolish Indian poverty at the earliest possible moment has contributed not a little in provoking the public thought and discussions on the vital topic on postwar development for India.

THE GANDHIAN PLAN

Another plan for the economic development of India, but in accordance with Gandhian ideals, has been prepared by Principal S. N. Agarwal, Commerce College, Wardha. This plan, it appears, is the result of the author's view that "the Government of India's plans are being drawn up not only to bypass the main issue of political independence but also to entrench British vested interests more and more firmly on Indian soil." It is feared that hasty attempts are being made to raise the standard of living of the Indian agriculturists not so much with a view to mobilising India's resources for a balanced economy or for the benefit of her masses but chiefly to provide larger scope for foreign capital and goods. If the task of planning is left entirely to the Government of India, it is believed, they would not plan for India but plan for American and British manufacturers. Another suspicion that has given birth to this Gandhian Plan is the feeling that even the Bombay Plan is calculated essentially to help the upper classes and not the masses. The delay on the part of the sponsors of the Bombay Plan in publishing the Second part of their plan outlining the exact role of State control in relation to agriculture and industries has given colour to this view. Mr. Agarwal pleads for a plan meant for the masses and hence planning must be from bottom upwards and not the other way about. It is well-known that for over two decades Mahatma Gandhi has been pleading for a socio-economic approach to Indian problems in general and our economic ills in particular. The appalling poverty of this much neglected country today requires to be tackled as much on the side of distribution as on the side of production. Excessive and rapid spread of factory civilisation would be harmful not only to the economic life of the Indian villages but to the culture of the people. Ideals of non-voilence, simplicity of living, village autonomy, maximum decentralisation of industrial activities and regional self-sufficiency, preservation of the national arts and crafts etc., are to be incorporated in an economic plan for India. Principal Agarwals' plan, which has the approval of Mahatma Gandhi, seeks to evolve a scheme of national economic progress with the above mentioned ideals kept in tact.

The plan is divided into two parts, the first brings out the need for a plan based on Gandhian ideology while the second lays down concrete details of the Plan. The basic requirements of the people with regard to its food clothing, shelter, housing, educational, medical and recreational facilities etc., are detailed and the per capita annual income of the ryot is sought to be increased from Rs. 18 as at present to Rs. 72. Emphasis is placed on the resuscitation of India's ancient village communities or Gram Panchayats. Great importance is attached to scientific development of farming animal husbandry, dairy farming fruit culture, vegetable gardening forest industries etc. Revival of cottage industries should be aimed at not only on grounds of full employment or small capital requirements but with a view to the moral and physical well-being of the people. Basic industries are not omitted or even neglected but it is urged that they must be owned and managed by the State. Due attention has been given to large-scale industries, currency, banking, insurance, labour welfare, statistics and research.

As regards financing the proposed Plan, it is estimated that the total amount of non-recurring expenditure on different items during the 10-year period envisaged is Rs. 3.500 crores. The capital will be realised by (1) internal borrowing, (2) created money, (3) additional taxation like steeper graduation of the income tax, death duties and corporation tax. The additional recurring expenditure, estimated at Rs. 200 crores, would be met mainly from the income of the State owned key industries and public utility services. Since India is a poor country the financial estimates are kept low.

SIR VISVESVARAYYA'S PLAN

Sir M. Visvesvarayya's latest booklet **Reconstruction in Postwar India**, though it does not indicate a change in his well known views on the subject reinforces the demand for all-round industrialisation of this country. Advanced countries, it is pointed out, are planning wide programmes than those convinced by the Government of India at present. Postwar schemes should naturally consist of two parts, viz., the short-term and the long-term ones, and while the former consists mainly of problems of transition to peace, it is the latter that has to be worked out in a cautious and rational way. It is agreed that reconstruction in this country, to be fully effective has to be conceived not merely against the economic background but against the whole set-up of political, economic and social conditions of the present. The author therefore has a plan for political reconstruction and appears to aim at Dominion Status within the British Empire and a National Government. Regarding the social side of reconstruction, the author treads familiar ground and refers to overpopulation, disunity, illiteracy, lack of self-reliance, etc. On the vital question of economic reconstruction the do-nothing policy of the Government is criticised and general support is accorded to the Bombay Plan. He deplores the lack of coordination in Government of India plans and articles the

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priorities to be pursued in the actual execution of postwar schemes. Sir Mockshagundam's constructive suggestions comprise the demand for an Economic Council and a separate Central Department for Industries with a full-time member-in-charge. His well known view that a five-year plan could be deduced from the Bombay Plan receives due mention and care is taken to administer a note of warning that postwar plans for India should be so schemed as to bring about uniform development of different regions. From a study of his booklet it would appear that more thought has been spent on the production end and vital issues concerning distribution, the role of State in post-war world, etc., have not been fully clarified and discussed. While his powerful plea for rapid industrialisation would be readily welcomed, the question of land reform, mechanisation of agriculture, etc., have not been tackled. He has suggested the three corporate bodies, viz. (1) A Reconstruction Commission for building new construction. (2) An Economic Council to watch and stimulate economic progress. (3) A National Reconstruction Board to attend to social and cultural reconstruction. For furthering postwar reconstruction the Government are asked to grant Rs. 10 crores per year for the first five years of planning and preparation of all the three classes of reconstruction from which Rs. 8 crores would be spent on investigations, preparations, etc. of productive undertakings. Pitfalls in planning are also pointed out and though there are no appreciable differences between Sir M. Visvesvaraya's plan and the Bombay Plan, such differences as there are are instructive and interesting. The public would be immensely benefited by a study of the views of one who has for several years been devoting all his energies to the problems of planning.

ANOTHER VIEW.

While the approach to planning from the standpoint of production can be tackled without much difficulty the lasting benefits of the development schemes depend upon the solution of three problems, viz., distribution of wealth, ownership of the means of production and the role of the State. Mr. B. K. Shah in his **India Tomorrow** emphasises the lacunae in Part I of the Bombay Plan, condemns the Central Government's "tinkering" with the problem of planning and outlines his own scheme. As all planners do Mr. Shah critically examines the Russian Five-year Plan against the Soviet background and indicates the reasons why that country could easily forge ahead with planning. Conditions in India are shown to be different and a new approach to planning advocated. The Italian scheme of corporations controlling, rationalising, disciplining and organising national economic life appeals to the author. It is claimed that a system of public board ownership and management of our means of production would achieve the advantages of private initiative and collective outlook. A planned economy, Mr. Shah points out, divides itself into four basic functions, viz., planning, adoption, execution and supervision. A Planning Board should do the first, the Legislature should be responsible for the adoption of plans, while the execution of the plans would be entrusted to a public Board for each sector of the national economy and an Institute of Public Accounts and Statistics should check up and supervise the execution and progress of the plans. The constitution and functions of the various suggested bodies are clarified. He lays down that no enterprise should be privately owned. Principles of corporate ownership are advocated and the capital structure of each new enterprise shall be constituted as follows: 25 per cent of the ordinary capital shall be contributed by the Industrial Planning Board, 15 per cent by the management and 60 per cent by the public. The scheme recommended by the author may have theoritical virtues, but in continental India, with powerful centrifugal forces working in political and social life, the adoption of the corporate system would present bristling difficulties. Mr. Shah is aware of the present-day handicaps for planning: and, like the Bombay Planners, pins his faith on National Government and an economic centre of power. The author analyses the Russian Plan and seeks to reconcile the desire of the common man to put an end to the evils of untrammelled capitalism and the aspiration of powerful vested interests to be allowed scope to play their own part in national regeneration. The publication is a valuable addition to the literature on postwar planning in India and would be particularly well received in circles sympathising with Labour's aspirations.

Tea and Industrial Output

Few matters have received such detailed attention since the war began as the efficiency of industrial production. In India the problem has been greater than in most other countries because, to meet the basic needs of the fighting forces, a great new industry has had to be created without the help of either a large machine tool industry or a large mass of skilled labour accustomed to factory conditions.

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PROVINCIAL SURVEY

REGIONAL PLANNING AND INDUSTRIAL LOCATION

Both in conception and ultimate execution economic planning in a country as vast as India has to be largely regional. This simple fact is often ignored partly for reasons of sentimental allegiance to the unity of India and partly because of the proneness to regard the economic life of the country and the various Provinces and States as being true to one uniform pattern. There is also the fear that, once the difference in position and needs is heeded to, the door might be opened for inter-Provincial jealousies and conflicts, which may jeopardise the working of a concrete economic plan and also the political future of the country as a whole. But cold appraisement of the tasks on hand and their businesslike accomplishment are the very essence of planning. The attitude to the economic problems which fights shy of some of the crucial realities of our economic life is patently out of place. It is only to be expected prima facie that, just as the climate in India varies from that of the Punjab to that of the South, natural resources and practical potentialities are also bound to differ. In addition to these are the differences in the economic development of the various Provinces and States which are due to a variety of historical circumstances. But once the Government and the people set out on a plan of increasing the national income so as to enable every citizen to have a minimum of the necessaries of life, the conditions in every part of the country have to be studied carefully before the tasks in respect of each area can be clearly set out.

The authors of the Bombay Plan, though they do not deal with this aspect of planning in India, accept the principle in broad terms when they recognise the need for regional plans, and for the general over-riding of conflicting political jurisdictions in the interest of the working of the plan. The Reconstruction Committee of the Government of India have gone farther along these lines. They have indicated that the Provinces and the States should in the first instance formulate plans of their own which will then have to be put together and re-adjusted to yield a plan for the whole country. The idea of Regional Councils and of the provision of special authorities for the execution of plans common to more than one political unit has also gained in currency, though suspicions about the ultimate result of such innovations persist in the quarters concerned. But it need hardly be said that regional plans are of necessity different from the plans that Province or State may formulate for itself in the light of its special conditions. For, the regional plan refers to the area which may be considered by reason of the nature of its resources to be a single economic unit regardless of whether it is subject to one or more political authorities. But it may be presumed that regional plans are such as can be expected only in a later stage of the progress of planning and that in the earlier stages every distinct political authority in the country has the duty to clarify its needs, possibilities and intentions so far as the matters under its direct charge are concerned.

So far, however, Provincial and State planning has made little progress. Only a few of the Provinces and States have come forward with definite plans. But as has been hinted already, the Reconstruction Committee of the Viceroy's Council has emphasised that the formulation of plans for the Provinces and the States is the primary responsibility of the Governments concerned. The Government of India will provide the technical assistance necessary. They have also made it clear that the appointment of Development Commissioners in the Provinces will not absolve the departments of the Central Government of the responsibility of developing the plans in respect of matters under their direct charge. The Provinces and States should therefore lose no time in drawing up an economic plan for the post-war period. To enable general perception of existing conditions in the Provinces and appraisement of the broad tasks before each Province, a survey of the salient features of each Provincial economy has been provided in this section. But Provincial planning would be futile and meaningless if each Provincial authority does not bear in mind from the beginning the conditions and potentialities of other Provinces and the lines on which they are likely to formulate their plans and objectives. In other words, the demand for Provincial and State plans should not be interpreted as an invitation to indulgence in narrow Provincialism. Provincial plans on the other hand have to be drawn up with the consciousness that ultimately they are to form parts of a common plan for the whole of India and that the general principles of division of labour and fair exchange between different parts of the country must have rational application to Provincial and State plans.

However, it is a legitimate and necessary function of Provincial plans to provide, by conscious Government effort, the corrective to differences in economic or industrial development which are not justified by differences of natural resources. Just as economic planning in the case of India seeks to remove the handicaps which historical accidents have imposed on this country as a whole, Provincial planning also should seek to make up for the accidental backwardness of some areas within the country in relation to others. Though the problem comprises many indirect issues and has wide ramifications an attempt may be made here to stress some of the disparities in this regard and to indicate the nature of the problem as a whole.

The first step in this regard is to recognise that there is one part of economic planning in India which is the direct concern of the Central Government. The organisation of transport and communications and the establishment of industries directly concerned with defence form obvious instances of such subjects. It may also prove practically expedient for the Central Government to increase its authority over other sectors of planning partly with a view to secure uniformity and partly because the necessity for financial aid from the Centre may carry with it certain corollaries on the administrative side. Leaving this part of planning, the other subjects may be said to fall under agriculture and industry. Differences of development between Provinces and States are as a rule less serious in agriculture than in industries. Backwardness in agriculture is more often traceable than in industry to differences of natural conditions. Of these conditions, facilities for irrigation are indeed the most notable. But here the problem is considerably simplified by the vast development of irrigation in recent times. The spread of irrigation in the past has been checked less by the development of engineering technique than by the fact that in judging schemes for irrigation the authorities had been prone to lay

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down unduly severe standards of productivity. Since interest rates, too, ruled very high in the past, the schemes that satisfied the canons of financial soundness were all too few. Now that the period of high interest rates seems to have been left behind for good and since the criteria of productivity have been revised to accord with more enlightened economic ideas, it may be said that the Governments of Provinces and States can plan for further development of irrigation and of cultivation. This might be done without fear of one Provincial plan clashing with another. So long as the food position within the country in relation to the requirements of the population continues as it is, the fear of a glut of agricultural production, particularly in foodstuffs, can be dismissed as chimerical.

Agricultural planning for the Provinces will largely be a matter of devising new schemes of irrigation where there is scope, therefore, of raising the yield per acre of the principal crops to the levels indicated in the Burns Report and of readjusting the acreages according to the state of popular consumption, utilisation in industry and changes in export demand. It need hardly be said that in the case of those agricultural products which are India's export staples and are therefore important not only to the growers but also to India's position in international finance, provincial plans will from time to time have to be changed according to the directions of the Central planning authorities. But in regard to food grains it may be assumed that what are now deficit areas will endeavour to reduce the size of their deficit, while in all areas alike a higher level of average consumption will be striven for.

It is only in the case of raw materials for industry that the Provincial authorities will feel the need to co-ordinate their agricultural and industrial programmes. Of the various industries which are in existence in India today and which have good prospects of further growth and development, cotton and sugar are specially important in that they are grown over wide areas in the country, that they form the link between agriculture and industry in every Province and State and that cotton goods and sugar are articles of common consumption for all classes. But the spread of cotton textile and sugar industry has not been as even as one would expect from the basic conditions. Indeed, industrial development in India can hardly be said to have been in accordance with the distribution of basic natural advantages. In the earlier decades of this country, the development of industries has as a rule been governed primarily by proximity to the great trading centres of Bombay and Calcutta. The diffusion of industrial production did not occur till long after the last war and even today the development of the sugar industry in U.P. and Bihar and the rise of cotton mills over the various other parts of the country have not detracted from the overwhelming importance of Bengal and Bombay. While the natural factors, which make for the concentration of the jute industry near Calcutta and the earlier development of the cotton textile industry in Bombay, are no doubt there, the distribution of industrial workers over the various Provinces in India shows a lop-sided development for which there can be no permanent justification in the distribution of natural resources.

The table at the end gives the percentage of industrial workers in large establishments of various Provinces and States in the various industries. Bengal had in 1939, 28.7 per cent of the total number of industrial workers and Bombay 23 per cent while the percentage of Madras came only to 9.7 and that of the U.P. 8.0. As between British India and Indian States the latter had only 15.1 per cent against 8.9 per cent in 1921. Of the various industries in India only in the cotton textile industry has there been a notable increase in the number of workers. Between 1925 and 1935 the number of workers in Ahmedabad increased by 45,657 and that in Coimbatore and Cawnpore by 25,000 and 21,000 respectively, while in the older centres like Bombay the increase in numbers was more or less negligible. In the case of the Sugar industry the overwhelming importance of U.P. and Bihar is too well-known to call for more than a reference. The U. P.'s share of workers was 55.4 per cent as against its share of the total population of 14.1 per cent. The corresponding figures for Bihar are 19.6 per cent and 9.4 per cent. Special mention of these two industries has been made as they are bound to figure a great deal in the plans that the Provinces and States may make for themselves for the post-war period. In the case of other industries the distribution of natural resources is by no means even. But in so far as one of the more important natural advantages is proximity of demand, the rise of demand in every locality for the ordinary comforts and necessaries of life consequent of the general improvement of the economic conditions will make for a more even distribution of industrial production than we have been content with so far.

Province or State	Percentage of population (1941)	Percentage of Industrial workers in all industries	Electric Power Generated. Units	% age of All India	Cotton Mills % age of workers in Mills	Cotton Hand-looms engaged in cotton weaving	Silk Looms	Wollen Looms	General Engineering	Cement	Soap	Glass	Paper	Sugar	Match	Chemicals
									Percentage of Workers							
Madras ...	12.7	9.7	190.423	9.50	11.6	19.00	12.99	0.34	6.9	8.53		1.0	...	5.6	20.9	0.5
Bombay ...	5.4	23.0	950.479	47.42	49.9	6.22	6.30	10.37	11.7	...	44.2	10.1	7.7	3.5	13.9	5.8
Sind	1.2	1.2	25.702	1.28	...	0.27	0.14	...	2.4	4.87	...	...	...	0.2	...	..
Bengal	15.5	28.7	516.374	25.76	5.4	8.04	5.52	0.94	47.7	2.21	36.5	22.5	50.5	4.3	28.9	47.7
U. P.	14.1	8.0	156.865	7.83	7.3	11.42	11.46	13.76	4.2	..	...	46.6	11.3	55.4	6.5	2.3
Punjab ...	7.3	3.9	62.657	3.13	1.6	17.28	4.59	15.47	6.5	6.96	1.0	2.0	...	1.6	2.3	2.8
Bihar	9.4	4.8	46.340	2.31	0.4	6.52	1.01	2.40	13.2	21.95	.	...	11.1	19.6	...	..
Orissa	2.2	0.3	866	0.04	...	3.25	0.44	...	0.6	...	1.6	2.0	4.5	0.6	...	..
C. P. & Berar ...	4.3	3.1	13.009	0.65	3.8	4.60	0.91	...	0.6	21.39	...	3.7	...	...	0.7	..
Assam	2.6	0.4	2.222	0.10	...	14.68	44.94	..	1.4	...	...	..	...	...	3.7	...
N. W. F. P. ...	0.8	0.06	2.361	0.12	...	...	...	...	..	..	..	...	...	...	..	...
Baluchisthan ...	0.1	0.1	1.672	0.08	...	...	...	...	0.1	...	..	..	...	...	..	..
Ajmer	0.1	0.7	1.484	0.07	0.9	...	...	...	...	...	...	...	...	...	..	...
Delhi	0.2	0.9	33.924	1.69	1.9	...	...	...	0.8	...	..	...	...	...	...	..
Hyderabad ...	4.2	2.5	...	...	1.6	3.96	8.48	...	0.7	8.20	5.0	3.5	...	1.4	7.2	...
Mysore	1.9	2.0	...	...	2.8	1.76	1.11	0.37	1.4	0.23	9.2	2.9	4.8	0.9	0.1	4.9
Baroda	0.7	1.9	...	...	3.5	0.28	0.31	1.93	0.2	4.53	1.6	...	...	0.3	3.5	31.6
Kashmir ...	1.0	1.3	...	...	...	0.45	0.17	53.64	...	...	..	...	...	...	0.4	0.6
C. I. States ...	1.9	2.7	...	...	5.6	...	...	...	0.8	3.16	...	...	...	1.7	0.5	...
Rajputana ...	3.5	0.9	...	...	0.3	...	...	0.55	0.1	13.09	..	...	...	1.0	1.0	...
Madras States ...	2.1	1.6	...	...	0.6	...	...	...	0.6	...	...	..	...	0.2	1.5	...
Bombay States ...	2.3	1.5	...	...	1.7	...	...	...	...	4.88	0.9	4.8	...	1.8	8.8	3.9
C. P. States ...	0.5	...	...	...	0.3	...	..	...	...	..	...	...	...	...	..	..
Cochin	...	...	...	...	...	0.22	0.02	...	..	...	..	...	...	...	...	..
Gwalior	...	...	...	...	...	0.30	0.10	...	..	..	..	...	...	...	...	..
Travancore ...	...	...	...	...	...	1.34	—	...	..	...	..	...	...	...	..	..
Deccan & Kolapur States ...	...	...	...	...	...	0.44	1.55	...	...	...	...	...	...	...	..	...
U. P. States ...	0.2	...	..	...	...	...	—	...	...	...	..	...	..	..	..	..

BENGAL

There is a singular appropriateness in taking up for study the economy of Bengal as the first of our provincial surveys. Bengal's contribution to the war effort is impressive, this being rendered favourable alike by the wholehearted co-operation of the ministry in power and by the fact that some of the most important industries flourish in the province. They hardly need detailed mention, but it has to be noted that jute has become more or less dependent on war orders and occupies a high rank among war supplies; coal is an important commodity without which the huge engineering side of the war effort and the production of munitions etc. would be unthinkable; the iron and steel industry in the province is expanding by leaps and bounds, all its resources being more or less fully geared to the war effort; besides these, there are the sugar and paper industries, besides a whole host of cottage industries, each one of which has a place in the scheme of war supplies. The Province has another great advantage in having some of the best engineering workshops in the whole of India. And while industrially, the province has come to occupy so high a place in the map of India—the most sincere tribute to this is the fact that the War Supply Board came down from Delhi to Calcutta—the presence of the extremely well-equipped workshops of three railway systems, now switching on more or less entirely to the production of munitions and war supply accessories, invests economic activity in the province with particular importance. In spite of this, agricultural activity in the province is no less important; and in production of raw materials, the province can take credit for a wide variety of products. Bengal is perhaps alone among the provinces of India not only for its industrial preeminence, but for the balance between the industrial and agricultural sides. Bengal's large population, too, can be construed to indicate its large man-power. Moreover, in proportion as productive activity expands, there will be need for a larger labour force, more hands will be required in the engineering trades etc., so that the populous character of the province is nothing to be deplored.

Bengal is the most highly populated province in India. The population in 1941 is 61,460,377, which is very nearly one-sixth of that of India as a whole. Amongst the major provinces of India, it is the most densely populated also. Of the inhabitants of the province 33,371,688 are Muslims and 25,801,724 Hindus. These two religions cover all except 2.72 per cent of the population.

The following table gives the classification of area in Bengal in 1939-40:

	Acres.
Total Area	50,373,296
Total area sown ...	30,228,400
Net area actually sown ...	24,916,400
Total area irrigated ...	2,051,302
Current fallows	4,742,823
Other uncultivated land ...	6,630,162
Not available for cultivation	9,468,752
Forests	4,615,159

Agriculture is the chief occupation of the people in Bengal as elsewhere in India. Although the total area sown is 30.2 million acres, which is roughly about one-ninth of the net area sown in British India, the land being exceptionally fertile, the agricultural industry of Bengal is second to that of no other province in India. Of the 30.2 million acres, rice is cultivated in as much as 22.2 million acres, other foodgrains and pulses are grown on 1.8 million acres, jute is grown on 2.5 million acres, oilseeds on 1.1 million acres and the various other crops, such as cotton, tea, spices, tobacco, fodder, etc. on the remaining 2.6 million acres. Bengal contributed in 1941-42 9.8 million tons of rice out of the total British Indian production of 24.3 million tons. The huge production of rice in Bengal is rendered possible by the physical condition of the province, such as the abundant supply of water whether by means of annual floods or good rainfall and also by the direct dependence of the population on it for their very food. Nevertheless, it is necessary to mention that Bengal is not normally self-sufficient in regard to food. A province with the density of 742 per sq. mile can hardly depend on 24.1 million acres for food, particularly when the yield of rice varies annually from 7 to 9 million tons.

After rice, jute which is the monopoly of India, is the most important crop of Bengal Unlike rice, which is produced all over the province, jute production is mainly concentrated in six districts,—Mymensingh, Tippera, Dacca, Rangpur, Faridpur and Pabna. The total area under jute in 1939-40 in India was 3,118,929 acres, of which Bengal itself contributed 2,503,800 acres. The rest was divided between Assam and Bihar and Orissa. The Indian production of jute in the same year was 9,648,000 bales, while Bengal alone produced 8,231,000 bales. Although Bengal possesses the world monopoly for the most remunerative agricultural product in India, it cannot boast of having utilized the unique position to its best advantage. For, the cultivation of jute is not regulated according to the requirements of the world. It is this maladjustment between production and demand that made jute the worst victim of the last world depression. The war has however brought about boom conditions in the jute market, by placing orders for sand bags and other military requisites.

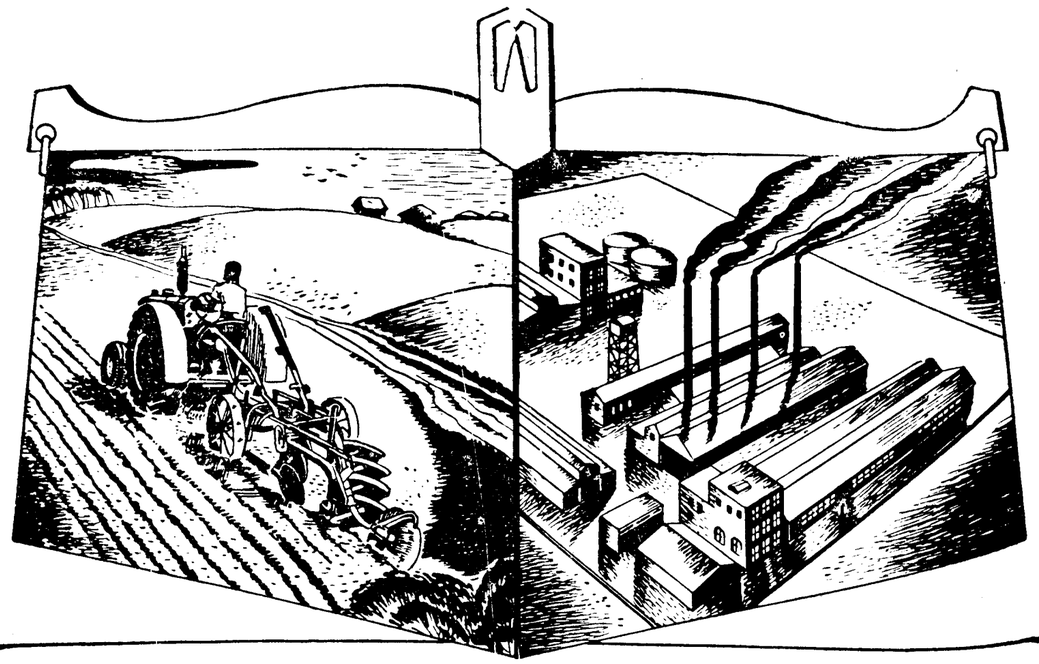
Bengal has been traversing in recent years one of the most troublous periods in her history. Cyclone and flood, enemy bombing and famine,—a series of disasters have shaken the very foundations of the social and economic life of the province. The famine that overtook Bengal in the latter half of 1943 and took a heavy toll of men, women and children, overshadows others in significance. Apart from the terrible inflation, experienced by the whole of India, acute shortage in foodstuff, inefficiency of the local authorities and widespread hoarding and speculation drove the province to a stage, far beyond human control. The depth of the situation is hard to realise now, even though the total number of deaths is estimated at 3½ millions by Prof. K. P. Chatterjee of the Anthropology Department of the Calcutta University. The survey covering 816 family units with a total membership of 3,840 reveals that in these groups 386 or a little over 10 per cent, died during the six months between July to December, 1943. The proportion of mortality of children below 5 varied from 30 percent to 50 per cent and among adults more men died than women. The consequences of this catastrophy cannot be fully appreciated at this stage when the aftermath has not yet passed. A ruinous blow has been dealt to the agriculture of the province. The peasantry have almost been uprooted: a large number of them have lost their land and turned into daily labourers. The lower middle class of Bengal have suffered acutely. The fishermen, deprived of their boats, due to the denial policy of the Government have been hard hit. The village weavers and handicraftsmen have sustained heavy losses. In short, the difference between the rich and the poor has grown wider than ever before.

The Grow More Food Campaign of the Government of Bengal has not met any significant success owing to the policy of relying more on propaganda than on any positive action. The distribution of seeds is considered the most effective way to encourage grow-more-food. But as the Bengal Paddy and Rice Enquiry Committee in its report pointed out, "Witness after witness told us in course of our tours in the moffusil that the great majority of the paddy-growers had hardly heard of improved seeds and did not know where they could get them from." The Bengal famine of 1943, however, has awakened the Government to the importance of the campaign. It is reported that the Government of Bengal with the object of encouraging the Grow More Food Campaign, have empowered each District Officer to spend up to Rs. 10,000 for the improvement of irrigation and drainage systems. The Government of India also have sanctioned a loan of Rs. 13½ lakhs for the distribution of 2¼ lakhs maunds of Aman paddy seeds.

Irrigation does not play any important role in the agriculture of Bengal, as in the Punjab and Madras. The total area irrigated in the province was about 1.8 million acres in 1940-41, of which 242 thousand acres were irrigated by Government canals, 263 thousand by private canals, 817 thousand by tanks, 44 thousand by wells and 432 thousand by other sources. Bengal is watered by the Ganges and the Brahmaputra and enjoys an average rainfall of 70 inches. In the Western parts of the province, however, where the rainfall is low and rivers are not always accessible, irrigation works form a prime necessity. It is gratifying that Damodar Valley Development Project, on the lines indicated by the Damodar Flood Enquiry Committee has received prompt attention from the Central Government. It is learnt that it will be a multi-purpose project to prevent floods in the Damodar river and also for providing for irrigation, electricity and navigation. It will be a co-operative undertaking in which the Centre, and the provinces of Bengal and Bihar will be partners. The authority which will be in-charge of this project after it is completed, will be more or less modelled on the Tennessee Valley Authority.

The Co-operative movement in this province, as elsewhere in India has long been an agricultural credit movement. Since the agriculturist in the country is simply notorious for being born in debt, wallowing in debt and dying in debt, no wonder that attention has been focussed on the credit aspect of the movement to the detriment of the other aspects of co-operation. Though the six years of world depression has affected the agricultural credit societies in this Province as in other provinces, the co-operative movement has not unduly suffered. Amongst the major provinces in India, Bengal has the largest number of co-operative societies, after Punjab. While the number of societies per 100,000 inhabitants in 1940-41 was 41.9 for all-India, in the Punjab and Bengal, it amounted to 91.8 and 67.6 respectively. The total working capital of the co-operative societies in Bengal in 1940-41 was Rs. 21 crores and 20 lakhs. In regard to this, however, Bengal occupies the second place in India after Madras.

The co-operative credit societies in Bengal, as in other parts of India, cater only to the short-term credit needs of the agriculturists. The supply of long-term credit is beyond the means of these societies as their funds are mainly obtained from fixed deposits of one or two years and current deposits. For effecting improvements in land, purchase of lands, cattle, etc., these societies are of very little help to the agriculturists. For such



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purposes land mortgage banks capable of supplying credit for periods ranging from 5 to 15 or even 20 years are necessary. The co-operative land mortgage banks were first started in India only as recently as 1920. While the land mortgage banking has made some appreciable headway in Madras, its progress in other provinces, especially in Bengal, is negligible. At present there are only five land mortgage banks in Bengal with a working capital of Rs. 2½ lakhs.

Of late, Bengal has been showing signs of being industrialised at a faster rate than before. Amongst the industries of the Province, the jute industry naturally occupies the pre-eminent position. The history of the industry up to the year 1925-26 has been practically one of continuous progress in respect of number of mills, looms and output. The number of factories has increased from 77 in 1921 to 97 in 1939. Indian jute mills consume nearly half the jute goods in India. The demand for jute and its manufactures, both in India and abroad, fell considerably during the depression period and continued so up to the present war, which has brought prosperity to the industry by bringing in big orders.

The cotton mill industry of Bengal, which comes next to jute in order of importance, is of more recent growth. There are now 32 cotton spinning and weaving factories with 31,845 workers. The number of handlooms engaged in cotton weaving stands at 113,969. The cotton mills of Bengal produced 59 million lbs. of twist and yarn and 194 million yards of piecegoods in 1941-42. The other major industries of the Province are coal mining , tea, sugar, paper and iron and steel industry. The coal mines of Bengal contribute one-fourth of the total Indian coal, production. In 1939, Bengal's output was about 8 million tons of coal, which was raised from the coalfields of Raniganj. The tea industry of Bengal has absorbed a large amount of capital and is concentrated in Jalpaiguri and Chittagong. This industry engages on an average 250,000 people. As regards the sugar industry, though it has made rapid progress elsewhere in India under the wall of protection its development is very poor in Bengal. There are only 11 sugar mills in Bengal producing about 10 thousand tons of sugar annually. This is really a matter for surprise when the soil and climate of Bengal are very favourable for the cultivation of sugar cane. In regard to the paper industry, Bengal stands supreme in India. There are four well-equipped and large paper mills in the province, situated at Titagarh, Kakinara, Raniganj and Naihati. The paper production of Bengal in 1938 was 49,000 tons out of the total Indian production of 66,000 tons. Iron and Steel is melted at Kulti and Hirapur. 668,106 tons of pig iron were produced in Bengal in the year 1939-40. The National Iron and Steel Co., Ltd., at Belur is manufacturing different products of iron and steel and the Indian Standard Wagon Co. Ltd. near Asansol, is producing railway wagons. There are besides factories, engaged on the production of rubber-soled shoes. The Dunlop Rubber Company at Sahaganj is manufacturing bicycle and motor tyres and the Bata Shoe Factory in Bengal is making out shoes in large scale.

Apart from these large-scale industries, there are the medium size industries and the small-scale industries, providing employment for many in the Province as well as occupying an important position in the economic structure of the Province. Some of the medium-sized industries are chemicals, toilettes and soaps, electric fans, electric bulbs, paint, varnish, glass, match, shoe-making, hosiery, flour mills, oil mills, rice mills, etc. All these have shown considerable expansion during the last few years. The small-scale or cottage industries are those which have been carried on from time immemorial in the villages. They form a vital part in the economic structure in that they provide alternate sources of employment to millions of under-employed agriculturists.

Handloom weaving is the most important cottage industry and is widely spread throughout the province. Although the world famous muslin of Dacca is a thing of the past, fine hand-woven cloth is still manufactured by the weavers of Bengal. Santipur, Dacca, Murshidabad and Tangail are some of the most important centres of handloom weaving. The brass and bell metal industry of Bengal is the next most important cottage industry of the province and the value of products annually produced amounts to several lakhs of rupees. Amongst the other cottage industries, the more important ones are cutlery, pottery, fishing, silk weaving and rearing, mat and coir making, ceramics, toy-making, button making, etc.

The jointstock enterprise has made remarkable headway in Bengal. In regard to the total number of jointstock companies, Bengal is responsible for nearly half of that existing in India. Although the total amount of paid-up capital invested in these companies in Bengal is slightly larger than that of Bombay, the companies in the latter province have a far more substantial basis. In the year 1939-40, out of 12.000 jointstock companies in India, Bengal had more than 5,000 with a total paid-up capital of Rs. 132 crores. The loan offices of Bengal are companies doing banking business mainly in the rural parts. There are about 550 loan offices with a total paid-up capital of Rs. 61 lakhs.

Bengal's share in the foreign trade of India ranges between 25 and 30 per cent. The following table illustrates Bengal's share in the total Indian trade:—

IMPORTS OF MERCHANDISE

(In lakhs of rupees)

	1937-38	1938-39	1939-40
Bengal	51,60	51,39	56,12
India	177,22	155,55	168,97

EXPORTS OF MERCHANDISE

(In lakhs of rupees)

	1937-38	1938-39	1939-40
Bengal	87,09	78,89	113,88
India	189,21	169,22	213,57

In regard to the total exports, Bengal stands first in the provinces of India and Bombay is second. In regard to total imports, however, the table is reversed.

The chief imports are cotton piecegoods, metals and ores, machinery and millware. sugar, mineral oils, hardware, species, motor cars, provisions, paper, tobacco, paper-making material, liquor, chemicals, salt, etc. Similarly, the important exports are jute manufactures, jute raw, metals and ores, tea, shellac, hides and skins raw, oilseeds and rice, etc.

Bengal imports, normally, one-fourth of the piecegoods imported by India, one-third of metals and ores and 40 per cent of the Indian imports of machinery and millwork and sugar. Between 25 and 35 per cent of the Indian imports of mineral oil is also imported by Bengal. So far as exports are concerned, practically the entire Indian exports of jute manufactures, jute raw and shellac are from Bengal. Bengal exports the largest amount of rice amongst the provinces of India. 70 to 80 per cent of tea and about two-thirds of the hides and skins raw, exported from India are also from Bengal.

A comprehensive post-war plan for Bengal has not yet been published by the Government. While other provinces are busy drawing up their post-war plans, Bengal, torn by famine and epidemics, has failed to proceed beyond the immediate needs. But the Government of Bengal is not idle in regard to post-war development of the province. Mr. Tamizuddin Khan, Education Minister, Government of Bengal pointed out lately that a five-year plan estimated to cost 16 crores of rupees for the post-war educational upliftment of Bengal had been drawn up and submitted to the Central Government for approval. The plan, it was said, covers a wide range of subjects and all stages of education from primary to higher studies abroad. The plan devotes particular attention to technical education on most modern lines.

Mr. Moazzam-Muddin Hossain, the Bengal Minister for Agriculture, has recently outlined the agricultural policy of the Government of Bengal. He said that the Government of Bengal had in contemplation the establishment of a factory in Bengal for the manufacture of chemical fertilisers for distribution at cost rate among agriculturists. He said that the government had obtained one expert from the Punjab and would obtain another from Egypt ; and on the basis of their report, they would strengthen and reorganise the whole department. The Minister further said that the Government were considering the possibility of hydro-electric irrigation in Bengal.

In Bengal a number of new basic industries, namely artificial fertiliser industry, electro-chemical industry, machinery industry and various consumer's goods industries can be developed with cheap electrical power. Power can be obtained from thermal station like the one in Raniganj coalfield area and hydro-electric stations such as those situated in the Damodar area, the Teesta area, the Chittagong area, the Brahmaputra area and the Rupnarayan area. It has been suggested that the Bengal Government should set up a committee of experts, to investigate into the possibilities of the above stations. There is wide support for the ultimate nationalisation of electricity undertakings but a technically competent body should be formed of experts who, with statutory powers, will be entrusted with management of the undertakings. Further, Bengal is undoubtedly rich in coal which is an essential requisite for industrial purposes. The Raniganj coal fields supply a large portion of the Indian coal output. The potentialities of power development from coal resources are rated high. The forests which form a valuable natural wealth of a country are to be found extensively in the province. The Terai in the north, the hill tracts of Chittagong, and Hill Tippera in the east and the Sundarbans in the south are important forest areas. Bengal has numerous rivers, ponds and tanks and the population is fond of a wide variety of fish. Fishery development therefore offers great scope for development. The industry has so long been backward, and undeveloped, as it is entirely left to the hands of poor and unenterprising class who is again tremendously affected by the denial policy of the Government in recent years. As many as 26 thousand boats have been removed during the panic days of 1942. The Government are now reported to have formulated a boat-building programme. They have announced that 10 thousand boats would be supplied to the fishermen.

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BOMBAY

The Bombay Presidency with an area of 76,443 sq. miles and a population of 20,849,340 is the premier industrial province of India. Indian nationalism was cradled in this Presidency and national movement helped to give rise to the great cotton mill industry. Bombay is the second city in the Indian Empire. The importance of the city is largely due to its excellent harbour and its position as the nearest Indian port to Europe except Karachi. Bombay is connected with every part of India by railway. Regular passenger and cargo service connect it with Europe, Australia, East and South Africa, China and America. Bombay also forms an important link in the transhipment trade between these countries and the seaports of Arabia and Mesopotamia.

The Presidency possesses a wide diversity of soil and climate. The rich plain of Gujrat, watered by the Nerbudda and the Tapti, is rightly called the Garden Land of India for its fertility of soil. The rest of the province is divided into high and low level tracts by the Western Ghats running parallel to the coast. It includes the Deccan Districts above the ghats, the Karnatic Districts on the South and the rice-growing tract of Konkon on the sea-side.

The following table gives the classification of area in the Bombay Presidency in the year 1939-40.

	Acres
Total area	48,719,481
Net area sown ...	28,540,030
Total area irrigated ...	1,215,049
Current fallows ...	5,232,279
Other uncultivated land ...	951,007
Not available for cultivation	5,665,135
Forests	8,331,030

Agriculture is the chief industry of the Province, engaging about 64 per cent of the population. The total area sown in the year 1939-40 was 28 million acres. Out of the 28 million acres in the Presidency, the total area under foodgrains and pulses is 19 million acres. Rice occupies 1.8 million acres, wheat 1.6 million acres, jowar 8 million acres, bajra 4 million acres, ragi 594 thousand acres, maize 189 thousand acres and other foodgrains 2.8 million acres. In the output of jowar and bajra, Bombay takes the lead in India.

Of the other chief crops, cotton and fodder crops are the most important ones. The former is grown on 3.8 million acres and the latter on 2.3 million acres. In the cultivation of cotton, Bombay stands second in India after C. P. and Berar and in regard to the fodder crops also, she ranks second after the Punjab.

Just as jute is the main commercial crop of Bengal, cotton is the principal commercial agricultural produce of Bombay. If the Indian States in the Presidency are also included the total yield of cotton in Bombay is the largest in India. Nearly a third of the total Indian cotton production is accounted for by this Presidency. Of the other commercial crops oilseeds claim an important position with a total acreage of 2 million acres.

The Bombay Presidency is certainly not lagging behind the apparently more co-operation-minded provinces of India. The total number of members of primary societies in 1940-41 in this province was 6,27,948, or 30.9 per thousand inhabitants, while the British India figure is 19.0 per thousand. Punjab alone among the major provinces of India leads Bombay in this regard with 36.4 per thousand. From the point of view of the total working capital, Bombay no doubt stood third amongst the major provinces of India after Madras and Bengal. When the number of annas per head of population is considered, Bombay occupied the first place amongst the major provinces with 130 annas. As elsewhere in India, the co-operative societies in Bombay are mainly agricultural credit societies. The non-credit co-operative movement though a little more active in this province, is by no means impressive. The co-operative credit societies, again, as in the rest of India, supply only the short-term credit needs of the agriculturists. It is in recent times that land mortgage banks in Bombay, 18 in number, have started operations. There are besides 25 consumers' co-operative societies and 58 'Purchase and Sales' societies in the Province.

The cotton textile industry is the main and most flourishing industry of the Presidency. In the national economy of India the cotton textile industry occupies a position, which is second only to that of agriculture; and even to-day Bombay takes the foremost place in cotton textile production. This industry is old and well-established, and is carried on very largely under Indian management and Indian capital. The two chief centres of the industry are the Bombay island and Ahmedabad with 73 and 84 factories respectively. Sholapur is also an important centre having 46 factories. The other prominent centres of the industry are East Khandesh and Bombay suburban, each with 5 factories. About 3 lakhs of workers are employed in this industry in the Presidency. The war has given a powerful impetus to this industry and the demand for the army goods has not only increased the number of textile factories in the province, but also stimulated the production of new accessories, like bobbins, shuttles, pickers and beltings, camouflage nets, cellular and waterproof, etc. Of late, the textile industry is experiencing enormous difficulties, the chief of which is acute shortage of coal. It is reported that a number of cotton mills in Ahmedabad have actually been closed down for want of coal.

The other important industries of the province include engineering, chemicals, matches, tobacco, sugar and leather. In the year 1939 there were 73 general engineering concerns in Bombay with 5,774 workers and 15 foundries with 873 workers. If the smaller engineering concerns are included, the city of Bombay alone possessed 384 engineering factories in the year 1942. The engineering industry of the province has increased by about 20 per cent since the beginning of the war. There are four big chemical establishments in the Bombay Presidency. As for chemical factories, the city of Bombay itself has as many as 26. In the year 1939, there were in the province 44 silk factories, 4 woollen mills, 7 sugar factories and 7 match factories. In addition to a number of factories for tanning hides and skins, there are also factories for the manufacture of soap, glass, paper and pottery.

The handloom weaving industry is the most important cottage industry in the Bombay Presidency. Almost every district carries on handloom weaving in spite of competition from the machine-made fabrics. In Poona, Nasik, Dharwar, Sholopur and Belgaum districts alone, there are reputed to be nearly 2 lakhs of weavers. Saries and Turbans are the more famous products of Bombay handloom weavers. Silk is woven in Ahmedabad, Nasik, Thana and Surat Districts. Dyeing is conducted in the Maratha districts as well as in Gujarat and Kathiawar. Bombay silver-ware and the brass works of Poona and Nasik are well known throughout India. The other important cottage industries of the Province are lac, ivory and tortoise shell manufactures, carpet weaving, calico-printing, manufacture of gold and silver threads, kinkhabs, lacquer work, pottery, stone works, etc.

Three things necessary for the industrialisation of any locality are the local supply of raw materials, power, whether coal, oil or electricity, and capital. All these three Bombay enjoys in plenty. As regards capital, Bombay is the home of two principal and rich mercantile communities of India, i.e., the Parsis and the Gujaratis. For its principal industry, namely the cotton textile industry, Bombay not only itself grows cotton but also can easily obtain from its neighbouring provinces, Central Provinces and Berar and Madras. Bombay has, however, no oil or coal. She was till recently dependent for her power requirements on the coal from Bengal and C.P. in India or from South Africa. However, during the last two decades attempts have been made to remove this disability. The Hydro-electric works, which are now in operation in the Presidency and which generate electric power some fifty miles away on the Ghats, manage to meet a a very considerable part of the power requirements of the Province.

The Tata Hydro-electric Power Supply Company, the Andhra Valley Power Supply Company and the Tata Power Company are the three big hydro-electric undertakings in the province. They have a combined normal capacity of 246,000 H.P. and provide electrical energy to the Bombay Electric Supply and Tramways Co., the majority of the mills and industries in Bombay city, the B.B. & C.I. Railway in Bombay city, the Poona Electric Supply Company Ltd., and the distributing licensees in Thana, Kalyan and the Bombay Suburbs.

Joint stock enterprise is very highly developed in the Bombay Presidency. In the year 1939-40, the total number of joint stock companies registered in the Presidency stood at 1,449, while the figures for Madras and Bengal were 1,577 and 4,873 recpectively. The paid-up capital employed in the Bombay companies represent fully one-third of the total paid-up capital in India. Though in the total number of registered companies, Bombay yields to Bengal and Madras, from the point of view of financial strength and soundness of its companies, Bombay stands foremost in India. The average capital of about one million rupees per Bombay company represents the highest average amongst the major provinces of India. In the total paid-up capital invested in Banks, insurance companies, transit and transport companies and mills and presses, Bombay Presidency occupies the first place in India.

Bombay's share in the foreign trade of India on an average works out to about 40 per cent. The following tables illustrate Bombay's share in the total Indian trade:-

IMPORTS OF MERCHANDISE

(Rs. in Lakhs)

	1937-38	1938-39	1939-40
Bombay	73,74	60,17	66,80
India	1,77,22	1,55,55	1,68,97

EXPORTS OF MERCHANDISE

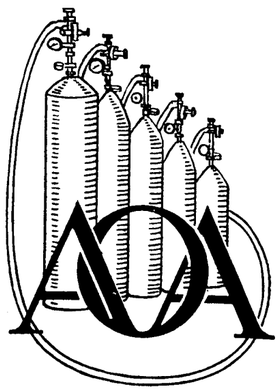
(Rs. in Lakhs)

	1937-38	1938-39	1939-40
Bombay	39,90	36,22	41,40
India	1,89,21	1,69,22	2,13,57



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In regard to the total imports Bombay stands first in India and Bengal second, whereas in the case of exports, the position is exactly the reverse.

The chief imports into the Bombay Presidency are cotton goods, metals and ores, machinery, sugar, motor cars, oils, raw cotton, cotton twist and yarn, artificial silk, silk manufactures, instruments, dyeing and tanning substances, woollen goods, paper and medicines. The chief exports are raw cotton, oilseeds, cotton manufactures, raw wool, cotton yarn, oil cakes and grains, pulse and flour.

One-third to one-fourth of the total indian imports of piecegoods and sugar are imported by the Bombay Presidency. One-third of Indian imports of metals and ores, machinery and mill work and cotton twist and yarn are also absorbed by the Presidency. One-third to one-half of oils (mineral) and one half of the Indian imports of motor cars also find their way into Bombay Presidency. 35 to 40 per cent of the woolen goods and five-sixths of the silk manufactures imported by India are taken by Bombay. Practically all the indian imports of raw cotton are destined for Bombay Presidency.

Of the exports, practically the entire Indian export of cotton twist one-third of oilseeds, one-half of the piecegoods and about 40 per cent of the raw wool exported from India are all from the Bombay Presidency.

The Bombay Government deserves congratulations on a bold and well-conceived development plan for the province outlined in the publication entitled "Planning for the Future of Bombay's Countryside". A fifteen-year plan of rural rehabilitation at an initial cost of Rs. 50 crores, to be put into effect immediately after the war, has been envisaged and raising the economic level of the rural areas has received special emphasis. The attractive feature of the scheme lies in the fact that provision is made for four categories of development schemes viz., (1) Special Priority Schemes to meet the existing and postwar demands for trained personnel; (2) All-Province Scheme to cater to the basic needs of all parts of the province for intensive development; (3) Particular Area Schemes to be introduced in some chosen places and (4) Concentrated Area Schemes for all-round improvement of selected areas. The Plan provides for development services like education, public health, workers' welfare, rural roads, livestock improvement, co-operative movement etc. Experiments in collective farming are promised though details as to their nature and scope are not indicated. Attempts will be made to tackle the problem of fragmentation and consolidation of agricultural holdings but here again we are not aware whether merely persuasive methods by the Co-operative Department are envisaged or suitable legislative measures are to be taken. An electric grid system is contemplated and hydro-electric and thermal stations would soon be set up in different parts of the province. Bombay will have at the close of 1944-45 a Post-war Reconstruction Fund of Rs. 7 crores but it is a poor nucleus for the work ahead. Hence taxes, loans and help from the Centre are the way out. But apart from merely referring to these three ways of raising money the Bombay Government have not given details of the financing of their Plan. Further, while the cost of the initial stage of the plan is indicated no estimates of the total cost for the whole period of fifteen years is given. The chief merit of the Plan lies in the shift of emphasis from merely budgetary considerations to an altogether new anxiety to raise the purchasing power of the masses and to speed up rural welfare. But the public would feel disappointed that the provincial government scrupulousiy avoided any reference to large-scale industries. No agricultural plan for a province can be a success unless it is related to its industrial development schemes as well. No doubt Government of India experts like Mr. Vesugar and Dr. P. J. Thomas are now engaged in surveying the industrial needs of India as a whole, and of the different regions too. But the provincial Governments would not have done anything out of the way if they have outlined their ambitions regarding large-scale industries. While help for small scale and rural industries is promised, no clear-cut plans are made known. The Bombay Government's plan has also been exposed to criticism on the way in which the "concentrated" areas are to be selected. The Government has declared that they would be influenced by three factors in choosing areas for intensive all-round development drive. First, they must be well distributed over the various parts of the province; secondly, special attention would be paid to areas frequently exposed to famines and, thirdly, the areas should, as far as possible, correspond with the best recruiting areas. Sir P. Thakurdas has taken objection to the third on the ground that the contribution of the civilian factory worker is not less important than that of the soldiers. It is needless to point out that this third factor has political implications and, if agreed to by the Central Government also, would lead to preferential treatment of certain provinces at the expense of others. Anyway, it is to be hoped that, in actual administration, the Government would not neglect the famine stricken but the unrecruited villagers in their enthusiasm to offer good life to the demobilised soldier. The Plan is welcome as an excellent beginning and would surely pave the way for rapid economic advancement of the Province.

MADRAS

The Madras Presidency has an area of 124,363 square miles with the exclusion of the States. The central part of the Presidency is dominated by a plateau; on either side are the Eastern and Western Ghats which meet in the Nilgiris. On the Western side, where the mountain-chain is high, the rainfall is heavy, but on the eastern coast the chain being low, the fall is small. The delta of the Godavari, the Kistna and the Cauvery form the most fertile area in the Presidency. These are the only parts on the east-coast, where agriculture does not entirely depend on rainfall. The population of the Presidency was 49 millions at the census of 1941, an increase of 11.6 per cent over the figure of 1931.

The following gives the classification and the utilisation of the area in Madras:—

	(1939-40). Acres.
Area according to Survey ..	79,799,536
Total area sown	36,280,212
Net area sown	31,460,401
Current fallows	9,781,176
Other uncultivated land ..	10,903,914
Not available for cultivation	14,509,826
Forests	13,188,205
Area under foodgrains and pulses	25,701,444
Area under oilseeds ..	5,287,526
Area under fibres (cotton etc.)	2,420,917
Area under tobacco ..	307,772
Area under coffee ..	55,548
Area under sugarcane ..	1,37,633

Agriculture is the chief occupation of the people in Madras engaging about 68 per cent of the population. The total area sown in 1940-41 in the province was 37,364,025 acres, nearly one-seventh of the total sown area in India viz. 247,983,579 acres. Madras is only second to the United Provinces in this respect, whose total area sown was 44,264,656 acres. Rice, the staple food of the province occupies the largest cultivable area. In the year 1942-43, rice was cultivated on 10.4 million acres and jowar on 4.7 million acres, bajra on 2.6 million acres and other food crops on about 6 million acres. The production of rice, jowar and bajra in the year was respectively 4.6 million tons, 1,031 thousand tons and 562 thousand tons. Amongst the Indian provinces, Madras stood second in the cultivation of rice, third in jowar and fourth in bajra. The province holds the premier position in India in the cultivation of ragi. In the year 1940-41, the acreage under ragi was 1,752,276 acres, while the total acreage in India was 3,507,053 acres. The acreage under cotton was 2.172 thousand acres in 1942-43. Efforts are being made to produce improved kinds of cotton by the methods of selection and hybridization. In the production of groundnut, Madras holds an important position in India. The acreage and production of groundnut in the province were 3,261 thousand acres and 1,208 thousand tons respectively in 1942-43. Oil-seeds, spices, coffee, tea, tobacco and sugarcane are also important products cultivated. She owns about half the acreage under spices and one-third under oilseeds in the whole of India.

War has brought about great changes in the agriculture of the Madras Presidency in common with the rest of India. The shortage of foodstuffs, caused by various factors has been keenly felt. But the introduction of the control at an early date saved Madras from an acute food crisis. Although a deficit province, Madras could even come to the aid of her neighbours, because of the timely control of the essential foodgrains. In 1942, 100,000 tons of rice were supplied to Ceylon. Travancore and Cochin received 100,000 tons. Substantial quantities were also despatched to Mysore, Hyderabad and Bombay. The food policy of the Government of Madras has on the whole been a success.

The Grow-More-Food has also met with considerable success in Madras. Since the campaign was undertaken by the Government, an additional 10 lakhs acres of land have come into cultivation in the province. The approximate yield in 1943-44 is estimated at 108.5 lakhs tons, while the yield stood at 97.2 lakhs tons in 1938-39 and 103.2 lakhs in 1942-43. It is gratifying to note that potato cultivation has extended from 17,400 acres to 18,000 acres in Nilgiris alone. The army demand has stimulated the production of vegetables in Nilgiris, Vizagapatam and Hosur.

With the initiation of the Grow-More-Food campaign, irrigation has received pointed attention in Madras. The province has at present some of the finest irrigation works in the world. The Mettur irrigation project which was completed in 1934 is one of the largest of its kind in the world. A number of irrigation plans are now under consideration. Having concluded an agreement with Hyderabad and Mysore Governments over the Tungabhadra project, the Madras Government have decided to take up the construction of the Melappuram reservoir in conjunction with Hyderabad. In about 6 years water is expected to be available for the irrigation of about 4 lakhs of acres in Bellary and Kurnool districts. There is a scheme to construct a dam across the river Vaigai near Mettur

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village in Madura district and to reserve the water which will irrigate about 30,000 acres. The Polavaram project now under consideration, if pursued successfully, will be the biggest irrigation project for the Province.

The co-operative movement in the Province has made considerable progress and compares very favourably with the movement in other provinces in India. In the year 1941-42 the number of societies in the Presidency was 14,673 as against 14,547 in the previous year. The membership in the societies increased by about 7.1 per cent from 1,196,543 on 30th June, 1941 to 1,282,192 on 30th June, 1942. The work of the co-operative movement can be better appreciated by its working capital than by the number of societies or the membership in societies. In this respect also, the movement in Madras is making steady progress. The working capital of the co-operative organisation in 1941-42 increased from 2,510 lakhs to 2,620 lakhs, making thereby an increase of more than 4 per cent. The promptness in repayment of loans by members is a sure index of the success or otherwise of a co-operative credit society. In the year 1941-42 all types of societies in Madras recorded a fall in the percentage of overdues. Madras has the largest number of land mortgage banks in India. While the number of banks in India during 1940-41 was 252, Madras is credited with 119 primary land mortgage banks and a central land mortgage bank. The number of agricultural non-credit societies stood at 746 during the year 1939-40. Consumers' societies are also making steady progress. The number of primary stores increased from 354 on 30th June, 1941, to 432 on 30th June, 1942 and their transactions rose from 58.33 lakhs to 93.06 lakhs.

The manufacturing industries of Madras consist of cotton textiles, tanning; jute mills, oil mills, rope works, tile works, soap manufacture, match production, aluminium utensils making etc. In 1942 there were 64 cotton mills with 745,556 spindles and 12,526 looms. The number of handlooms engaged in cotton weaving alone came to 269,306 (out of the total of 1,293.091 for British India). There were three jute mills—two in Vizagapatam and one in Guntur on the eve of the war, engaging 5,238 workers. Out of a total of 311,329 silk looms in British India 19,192 are in this province. There is only one woollen mill in Bellary. As regards sugar industry, there are 14 factories (total for British India 166) giving work to 4,567 men. Out of the 85 match factories in British India 53 are in Madras (Ramnad 28, Malabar 10 and Tinnevelly 7). Tanning is an important industry of the province which possesses one-fourth of the tanning factories in India. Madras follows Bengal in the production of hides, contributing a little over 20 per cent of the total Indian skips. In the production of buffalo hides, the province tops the list, its share being over a fourth of the total Indian production. The Presidency contributes 7.2 per cent of the total output of goat skin and 23.4 per cent of the total sheep skin in India. Fishery is an important industry and refined shark liver oil amounting to 18,643 gallons was produced at the Government oil factory, Calicut, in 1943. Owing to the fact that fishing industry is in the hands of poor, ignorant and unorganised fishermen and because of inadequate Government finances, Madras, with a coastline of 1,750 miles, has not made any significant progress in the fishing industry.

The war has given a powerful fillip to soap, coir and textile industries of Madras. The cotton mill industry has experienced unprecedented prosperity and earned record profits. The chemical and sericultural industries have also made considerable progress under war conditions. The acreage under mulbery has nearly doubled itself during the year 1942-43. As against 8,479 acres in the previous year, the area under mulbery has increased to 14,568 acres now.

Madras comes next to Bengal and Bombay as regards the development of largescale industries. The province has 86 engineering concerns, amongst which railway workshops are 23 in number. There are 25 general engineering workshops and 12 foundries. There is one ordnance factory in Madras and three dockyards. The province has made a name in regard to its producer-gas plant. It has been estimated that the Madras Presidency has at present approximately 70 per cent of all the passenger buses and civilian lorries converted to gas. Manufacture of producer gas plants started only after the war but even by the end of 1942 there were atleast 25 workshops in the province producing plants, which were either copies of, or improvements on foreign makers. The absence of coal-mines in this province has long stood in her way of speedy industrialisation. It is heartening that Madras is in dead earnest to make up her deficiency in power resources by the development of hydro-electric power. The Pykara hydro-electric scheme, an undertaking of the Madras Government was completed in 1932. The estimated potential capacity of the full development is around 40,000 k.w. Power is transmitted to Coimbatore whose industrial development accounts for more than 50 per cent of the total load and to Udumalpet, Sembatti, Madura, Virudhunagar, etc. The rapid growth of the Pykara load in 1934 necessitated the early construction of the Mukurti Dam, which was completed in 1938. The Mettur Power station commenced operation in June, 1937. Power is transmitted to Singarappet in the north and Erode in the south by means of trunk lines. Such trunk lines have also been extended to Vellore, Tiruvannamalai and Villupuram. The inauguration of the Papanasam hydro-electric station is calculated to serve the southern districts, namely, Tinnevelly, Madura and Ramnad and the west coast districts. With a general agreement between the Madras Government and Travancore State, investigation into the possibilities of the development of hydro-electric power in Periyar and Cardomom hills has been undertaken. The Tungabhadra project has also reached a hopeful stage. Mysore and Hyderabad having come to an agreement regarding the utilisation of the waters of the Tungabhadra, the Madras Government have decided to undertake the construction of a dam and a reservoir at Mallupuram in conjunction with the Government of Hyderabad as soon as possible. The hydro-electric power, to be developed at the site of the dam, will be available for industrial development in the neighbouring areas of the Ceded Districts. The Machkand hydro-electric scheme is by far the best and most economical scheme for supplying the Andhra districts with power. Its ultimate capacity would be 105,000 k.w. These apart, Moyar and Perikad hydro-electric schemes are now under consideration Thus with the rapid development of hydro-electric power, Madras is on the high road to industrialisation.

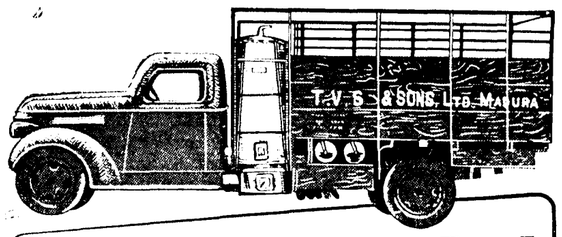
The important cottage industries of Madras are cotton and silk handloom weaving, which are located in Tanjore, Madura, Coconada, Salem, Conjeeveram and Coimbatore. Carpets are made at Ellore and Masulipatam, metallic wares at Tanjore, Madura, Ganjam, Vizagapatam and Vellore, while cigars are manufactured in Trichinopoly and Dindigul. Before the war handloom piecegoods were exported to all countries adjacent to India, but the loss of Burma, Malaya and the Dutch East Indies drastically reduced the scope for exports. Since certain types of handloom products were mainly produced in accordance with foreign tastes, the weavers who have been specialising in those goods have been hard hit. The paper shortage has given a stimulus to the manufacture of hand made paper in the province. At present there are many private plants in the Madras Presidency engaged in making paper. Four big paper making centres have been sanctioned by the local government recently and the first one at Bezwada has started functioning. The daily output of handmade paper from the Bezwada plant is half a ton.

Madras occupies an important position in India in regard to jointstock enterprise. Before the war she stood third in India in respect of paid-up capital invested in banks, mills, and presses, second in regard to tea and other planting companies and fourth in insurance companies. The galloping inflation of currency, necessitated by war finance has brought about striking changes in the banking conditions in Madras in common with the rest of India. Bank deposits and bank cash have swelled tremendously during the past four years. The number of banks and their branches is on the increase.

The share of the Madras Presidency in the foreign trade of India is considerable. The principal imports into the province consist of metal and ores, cotton manufactures, rubber, dyeing and tanning substances, oils, sugar, paper, cotton twist and yarn. The main exports are cotton manufactures, tanned hides and skins, oil seeds, tea, coffee, spices, coir, raw and manufactured. War has led to great changes in the foreign trade of Madras. Hides and skins enjoyed prosperity in the earlier part of the war but now are faced with depression due to the arbitrary dictation of prices by Great Britain and the U.S.A. Groundnut and rubber are now experiencing boom conditions. Tea and coffee have enjoyed prosperity, which is however passing away with the imposition of new excise duties. In the year 1942, the imports into the province were valued at Rs. 619.61 lakhs which rose to Rs. 521.10 lakhs in 1943. The exports of the province were 721.46 lakhs in 1942 and rose to 844.83 lakhs in 1943.

Madras, like other advanced provinces in India, has her own post-war plans. The Post-war Reconstruction Committee of the province has prepared an ambitious programme dealing with the essential aspects of Madras economy. It is understood that the Committee has decided to increase the agricultural productivity, exploit mineral resources of the province for speedy industrialisation, develop irrigation and hydro-electric power, improve the transport system and reclaim wasteland for the returned soldiers.

A 10-year programme of post-war road development in the province estimated to cost Rs. 70 crores has been prepared. The scheme contemplates the opening up of interior tracts, the need for connecting villages with industrial marketing centres, the provision of facilities for the transport of forest produce and the development of areas where industrial enterprises are springing up. The post-war power projects of the Presidency have already been referred to. To other sectors of economy also the Post-war Reconstruction Committee is giving due attention.



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NETWORK OF SELLING ORGANISATIONS
THROUGHOUT SOUTH INDIA

The industrial development of Madras has not been commensurate with her potentialities, owing to inadequate geological survey and lack of facilities for industrial research. But now it has been known that the province possesses in abundance deposits of magnetic iron, and various non-metallic resources. Dr. M. S. Krishnan of the Geological Survey has recently pointed out that magnetic iron ores are available in easily accessible places in South India and these ores would facilitate the rapid progress of the iron and steel industry of the Province. It has been revealed in 1943 that alloy steels could be manufactured by electric smelting methods from the Kanjamalai ores of the Salem District. These ores, it is estimated, are likely to provide for several centuries raw material for a 100 ton steel plant. The Kanjamalai ores are of low grade and suited more for electric smelting and not in blast furnaces. The iron ores of Chabali and Pagadalapalli in Cuddapah district are also considered very rich. The province is rich in mica and materials for ceramics. 18 per cent of the total output of Indian mica comes from Madras. The important mining centres are Guntur, Rapur, Podalakur, Atmakur and Kavali. Mica also occurs in Coimbatore, Salem, Ganjam, and Vizagapatam and Nilgiris besides the sizable deposits in Mysore and Travancore States. A recent ceramic survey of the Andhra districts (particularly of the Vizagapatam and Godavari districts) conducted by Messrs. G. Gopala Rao and N. B. V. Krishna Rao of the Andhra university revealed excellent scope for the development of a ceramic industry in the Province. Enormous supplies of white clay have been found in Bommuru Metta, Pushyakshetram Dwaraka, Tirumala and Jaggarapeta, while abundant supplies of red clays are found in Peddapuram. The deposits in the Kurnool, Ananthapur and Cuddapah districts alone are estimated at 8 million tons. The chances of Rajahmundry becoming the centre of a big ceramic industry are rated high since this town enjoys cheap transport facilities, being at the head of a net work of canals. From here manufactured articles could be easily distributed to all parts of the Presidency and at low freightage. Another additional attractive point about the locality is that since at present there is not even a single ceramic factory on the east coast from Calcutta to Madras, Rajahmundry could satisfy the want. In Ramnad, Tinnevelly and Travancore, there are extremely rich deposits of ilimanite, an important mineral for the manufacture of paint. The Geological Survey have further found that in the Sheveroy hills there are several million tons of bauxite which can be used for the production of aluminium. For a proper utilisation of the ore for metallurgical and chemical industries an aerial ropeway connecting the ore deposits and the nearest railway, it is stated, is necessary. The war has also given a fillip to investigations leading to the designing of lamps and burners using vegetable oils as a substitute for kerosene, and the Government, after a series of tests on various lamps and burners, have found that three varieties, viz., Rama Deep, the Tumbler Lamp and the G. S. T. burner can be manufactured on a large scale. With a view to organising the manufacture of caustic soda the Government of Madras have decided to conduct a preliminary survey of the alkaline earth deposits in the province. A chemist, it appears, has been appointed to be in charge of the survey and his report is to be published shortly. If his findings are favourable, steps would be taken to organise production. A recent survey of the laeticiferous plants of the province conducted by the Botanical Section of the Imperial Agricultural Research Institute has revealed the occurence of suitable plants in Guntur, Bezwada and Venkatagiri. Madras thus, on the whole, offers splendid prospects, so far as industries are concerned.

War has revealed certain defects in the economy of the province, as for instance her excessive dependence on outside sources for sugar, paper, chemicals and foodstuffs. It is estimated that there is a deficiency of 5 to 10 per cent in rice, 10 to 30 per cent in millets and 50 per cent in pulses. Grow-more-food campaign has no doubt brought a large area under cultivation but Madras has still to speed up her agricultural production before she can stand on her own legs in regard to essential foodgrains. Irrigation and transport plans, drawn up by the Government, are to be put into operation immediately and livestock would be conserved in order to increase the productivity of agriculture. Chemical fertilisers are to be widely used on soils. It is gratifying to note that the province is considering the erection of on ammonium sulphate plant on the banks of the Godavari or the Kistna or at Mettur as an alternative. The nutritional aspect of the food problem has also to be borne in mind. It is useful to recall in this connection Sir John Megaw's enquiry conducted in 1933. According to this, 46 per cent of the people in Madras, dealt with, was "well nourished", 36 per cent "poorly nourished" and 18 per cent "very badly nourished". Any post-war plan of the province must see that sufficient quantity of cereals is produced for correcting the deficiencies.

The other handicaps from which Madras suffers severely are fuel, coal and oil. The deficiency in these have got to be made good, if industries of the province are to utilise the raw materials that are easily accessible. The fuel problem can be solved with the development of hydro-electric power. Madras therefore must set herself to the fullest development of hydro-electric power in order to speed up her industrialisation.

UNITED PROVINCES

The United Provinces is the second in India in size, having an area of 112,523 square miles of which 6,276 constitute the States. In point of population also, the U.P. ranks second with a total population of 55 million.

The United Provinces are situated in the centre of the Northern India. The physiography of the U.P. reveals three distinct features. In the north lies portions of the Himalayas which are almost in the hills. The area is infertile and poorly inhabited. The great Gangetic plain lies in the centre of the province. The extensive canal system spreading over the Gangetic plain invests the area with an extreme fertility and density of population. In the south the central India plateau, covered with hilly tracts, is as infertile as the northern region, although better populated.

The following gives the classification and utilisation of the area in the U. P.:—

	(1939-40). Acres.
Area according to Survey ..	67,848,920
Total area sown ..	45,161,675
Net area sown	36,499,642
Current fallows ..	2,479,406
Other uncultivated land ..	9,888,686
Not available for cultivation	9,906,391
Forests	9,279,587
Total area irrigated ..	11,970,236
Total area under foodgrains	38,717,287
Total area under oilseeds ..	1,048,625
Total area under sugarcane	1,875,937

Agriculture is the chief occupation of the province, engaging about 80 per cent of the population. The total area under cultivation in 1940-41, was 44 million acres. The United Provinces may boast of a fair share of the important agricultural staples of India. Of wheat out of the total of 25.9 million acres the U.P. has as much as 7.6 million. Of the total annual production of Indian wheat of 9 million tons, the U.P.'s share comes to 2.7 million. This province has more than half the total acreage under sugar cane in India. While the area under sugar cane in India is only 3.4 million acres, the U.P. alone claims as much as 1.8 million. From the standpoint of yield, the U.P.'s share is even higher being 3.2 million out of a total of 5.4 million tons. In cotton, rice and linseed, the U.P.'s share is far less. While the total Indian acreage under cotton was 14,082,958 acres during 1940-41, the U.P.'s share was 394,198 acres only. The U.P.'s cotton production of 146,000 bales during the same year was but a small proportion of the total Indian output of 3,972,000 bales. The area under rice in the U.P. is only 7.0 million acres, out of a total acreage for all-India of 70.4 million. The output of rice in the United Provinces is 1.8 million tons against 23.0 million tons for the whole country. The area under linseed in India is 2.7 million acres, while the U.P. devotes only 858 thousand acres to the growing of linseed, output of linseed being 152 thousand tons against 349 thousand tons for India.

The agriculture of the province owes not a little to the extensive irrigation system. The Agra and Bundelkhand Divisions which suffered in the past from drought have now been relieved by improved irrigation facilities. The total area under irrigation in the United Provinces was 11,634,117 acres in the year 1940-41 and in this respect the province came next to the Punjab with 16,898,256 acres. 3,773,991 acres were irrigated by Government canals, 29,639 acres by private canals, 13,964 acres by tanks 5,936,267 acres by wells and 1,880,256 acres by other sources. The Sarada Irrigation Canal was opened in 1928. An extension including 350 miles of new channels, was formally opened in 1941, making the total length of the main canal and branches, 6,400 miles. The area irrigated annually is over 10 lakhs of acres, including over 2¼ lakhs acres under sugar cane. The Upper Ganges Canal and the Lower Ganges Canal are two other important irrigation works of the United Provinces. The former, with a total milage of 5,926 miles irrigates annually an area of 14 lakhs of acres, while the latter with its milage of 4,994 miles irrigates 10 lakhs of acres annually.

By far the most encouraging aspect of the economic life of the United Provinces is the spread of hydro-electric power mainly for the purposes of agriculture, and the resulting scientific outlook in regard to problems affecting agriculture. The Ganges Canal Hydro-electric Grid supplies power at cheap rates for domestic, industrial and agricultural purposes to some 93 towns in 14 districts in the west of the Province and to Shahdara in Delhi province. Besides supplying 93 towns with current for domestic and industrial ends, the Grid provides energy for irrigation pumping from rivers

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and open and tube wells. Thus it has been possible to introduce irrigation over approximately one million acres hitherto without any source of irrigation. This supply of cheap power from some 2,000 sub-stations has proved to be of inestimable value for the economic disposal of crops and the development of minor industries in the urban areas.

The progress of the co-operative movement in the United Provinces is heartening enough, if not impressive. In 1940-41, the U. P. stood third in regard to the number of co-operative societies, her total being 16,856 or 30.6 per one lakh of inhabitants. The corresponding figures for Bengal and the Punjab were 40,384 and 26,060. The total number of members of primary societies in the U.P. was 8,18,167 or 14.8 per thousand in the year 1940-41. The working capital of the co-operative organisation in the U. P. was comparatively low in 1940-41. While total working capital for British India was 98,46 lakhs, the U.P. claimed only 3,31 lakhs. The low overdue loans in agricultural societies in the U.P. reflects, however, that the movement is not without any success. Thus while for all-India the overdue loans were 34 per cent of the working capital and 46 per cent of the total loans due by individuals in the year 1940-41, the corresponding figures in the U.P. were 24 and 36. The non-credit side of the co-operative movement is not unimpressive, as compared with other provinces in India. In the year 1939-40 the U.P. stood first in this respect with a total of 7,851 societies, while the total for India amounted to 19,639.

As regards industry, the United Provinces may well claim well-distributed industrial activity. Another circumstance pointing towards the same conclusion is that the U.P. has a larger number of cities than Madras or the Punjab or the C.P. The industrial activity of the province is largely centred in the cotton textile and sugar industries. Cawnpore is the chief centre of cotton textile industry possessing 14 cotton textile factories, which give employment to 34,232 workers. J. K. Cotton Spinning and Weaving Mills Co., Ltd., the Elgin Mills Co., Ltd., the Swadeshi Cotton Mills Co., Ltd. are some of the most important cotton mills of the province. In the year 1939, there were 26 cotton spinning and weaving factories employing 42,862 workers. The number of handlooms engaged in cotton weaving was 161,913. Cotton ginning is carried on as a home industry at Aligarh, Fyzabad, Azamgarh, Sahranpur, Muzaffarnagar, Meerat and Bareilly. Cotton carpets and durries are made in Aligarh, Bareilly and Agra Districts. The United Provinces, with the largest area under sugar cane, holds a predominant position in the sugar industry of the country. What Bombay Presidency is for the cotton mill industry, the United Provinces may be said to be for the sugar industry. While British India possesses 153 sugar factories with 74,305 workers, the U.P. claims as many as 77 factories with 45,353 workmen. In the U.P. the outstanding centre of sugar production is Gorakpur with 14,000 workers employed in the industry. The other important sugar-producing areas are Rohilkhand, Meerut, Fyzabad and Lucknow Divisions. The development of the sugar industry has made up for the lack of subsidiary occupations. There are 3 jute mills, 1 silk mill, 3 woollen mills, 4 match factories and 3 paper factories in the province. Glass is an important industry, located mostly at Shikohabad and Firozabad. The province has 49 glass factories with 4,733 workers. The development of the leather industry has been stimulated by the war and enjoys good prospects. The Government Harness and Saddlery Factory caters to the unlimited needs of the Indian Army. The province has utilised its high place in the production of wheat and oilseeds to develop its own flour mills and oil mills. Small industries like soap and toilette requisites and hosiery are slowly making headway. The engineering and chemical industries, important though they are, have not yet made any remarkable progress. In 1939, the United Provinces had 20 general engineering workshops with 1,908 workers. The number of foundries was 9 which employed 495 workmen. As for the chemical industry, the U.P. possessed 3 factories in 1939 of which 2 were in Cawnpore and 1 in Agra.

The United Provinces is drawing up her own post-war schemes. Sir William Ilbotson, Adviser to the Governor of the U. P., expressed recently that the Government had under consideration about 180 schemes in the various departments and that the schemes would involve an expenditure of nearly Rs. 120 crores in five years.

A net-work of power houses all over the Province is what the U. P. Government is planning as the vital foundation of its 120-crore post-war reconstruction plans. About six schemes are now under the active consideration of the Government. Along with these schemes the prospects of the thermal stations at Chandausi, Harduaganj and Cawnpore in relation to the seasonal hydro-electric power are also receiving due attention.

An *ad hoc* committee, formed to advise the U. P. Government on the future power and irrigation developments in the province, is examining four hydro-electric schemes of the Government. These schemes, it is expected, will cost something like Rs. 29 crores and will be able to generate up to a maximum of 400,000 k.w. The Sarda Canal scheme is expected to provide a maximum of about 55,000 k.w. by redesigning a portion of the Canal and constructing a single station. The Nayar Scheme involves the building of a dam 600 feet high in the gorge of the Nayar river. The third project involves building a dam across the Rihand tributary of the Sone river with the possibility of generating more than 150,000 k.w. The Tons-Giri scheme, the fourth project, involves the construction of two high dams on the upper waters of the Jumna for the storage of water for irrigation and for the generation of electric power.

The Industries and Commerce Department of the U. P. Government have submitted a 10-year post-war plan for the expansion of technical education in the province as well as the development of basic, largescale and cottage industries. The scheme is divided into three parts. The first part deals with technical education and its expansion. The second deals with basic and largescale industries, and the third with cottage industries.

The scheme suggests the teaching of various trades in one institution and thus the replacement of the prevailing system of monotechnics by polytechnics. It recommends that the technological institute at Cawnpore should be far extended and include the following 8 sections: Oil, including oil, soap, paints and varnishes; glass and ceramics; leather including leather chemistry and leather working; textiles, including spinning, weaving and pharmaceuticals; food chemistry, engineering including metallurgy, mechanical, industrial and electrical engineering.

The Scheme points out that the basic industries, such as, heavy chemicals, mainly acids and alkali, re-rolling and engineering, cement and fertilisers can be developed in the province. Some of the industries had already been started on a small scale, but their further development was suggested. There were already four re-rolling mills, ordnance factories and a Central Workshop in the province. The Government was considering the possibility of the utilization of Lucknow marl for cement and the setting up of a large plant for ammonium sulphate. The scheme suggests that the Government can help in the development of basic industries by the survey of raw materials, supply and transport facilities, by the planning of project and by establishing contacts between industrialists and technical men. As regards large scale industries, those which are already established include Textile, Glass, Paper, Oil, Sugar, Engineering and Pharmaceutical. These established industries need assistance in the form of technical help and guidance, testing samples and raw materials, supply of new designs, and new ideas of manufacture, supply of good trained men and assistance from Commercial Intelligence Bureau. Besides these there is scope for more new largescale industries, e.g. electric lamp bulbs, electrical equipment, thermos flasks, optical glass, potteries, enamel ware, plastics, plywood and its products, sunn hemp fibre, artificial silk, and small metal consumers' goods like razor blades, safety pins.

The scheme suggests that the following industries can be developed in the province on a cottage basis:—clock work toys, wooden toys, silk filature, wood spinning and weaving, torch bulbs, dry cell batteries, electric torches, die punching industry, fountain pens, buttons, pencils, glass beads, spectacle frames, clocks and watches. It is recommended that efforts should be made to concentrate one cottage industry in one district. Each district should have a ten-year programme.

PUNJAB

The Punjab with its feudatories embraces an area of 136,260 square miles, the British districts occupying 99,200 square miles. After October 1936 with the formation of a new Political Agency at Simla, the 'Punjab States' and the 'Punjab States Agency' have all been transferred to the Punjab States Agency. The total population of the province in 1941 including the Baluchi tribes of the Dera Ghazi Khan border was 35,104,000 of which 5,504,000 were in the Punjab States and 1,091,000 in the Punjab Hill states. That is to say the Punjab comprises about one-thirteenth of the area and about one-eleventh of the population of India; the province comes next to Bengal, Bihar, U.P., Orissa and Madras in that order.

The physical configuration of the Province falls into five natural divisions. (1) The Himalayan tract including an area of 22,000 square miles scantily populated in scattered mountain hamlets, (2) the Salt Range tract extending over the districts of Attock, Rawalpindi and Jhelum and part of Shahpur district, a broken territory, its hilly regions approximating in its physical characteristics to the Himalayan tract. Rainfall in this region is insufficient to provide against distress in unfavourable seasons, irrigation being almost absent. (3) The sub-montane tract with the most fertile and thickly populated portions of the province. The population of this region (over 4 millions) pursues, almost wholly agricultural and pastoral vocations. Sialkot is the sole urban centre. (4) The eastern por-

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tion of the Punjab plain with an area of over 36,000 square miles and population of 10½ millions—a largely urban area, in comparison with the Western Punjab. The large cities of Amritsar and Lahore lie within this tract. Everywhere in this region rainfall is just sufficient for cultivation to be made possible without irrigation but not to safeguard against distress, except where irrigation is employed, in times of even a slight failure of the rains. (5) The western plains comprise an area of nearly 60,000 acres with a population of over 6 millions. Because of scanty rainfall everywhere in the area cultivation is independent of rain, being made possible with the aid of artificial irrigation or in riverine regions left moist by the retreating floods. Multan and Lyallpur are the largest urban centres in this area.

IRRIGATION AND HYDRO-ELECTRIC DEVELOPMENT

About one-sixth of the total area of the province is Government property, the rest being owned by private interests. A large part of the Government land is so situated that cultivation is made possible only by extensive irrigation. The area irrigated in the Punjab in 1937-38 was the largest in India, where 12.29 million acres were irrigated during the year, excluding area irrigated through channels which lie in the Indian States. The Madras Presidency came next with an area of 7.56 million acres followed by the U.P. with an area of 5.16 million acres. During the triennium 1933-36 out of the 11,007,776 acres (average area) irrigated in the Punjab 10,296,230 acres were served by productive works, and only 712,546 acres by unproductive works; while the average area irrigated in British India as a whole during the triennium was 30.97 million acres. Thus the Punjab accounted for over 35 per cent of the total area irrigated.

During the last 40 years several big irrigation projects have been put into execution and irrigation facilities provided to large tracts of barren land as a result of which many colonies have sprung up. The Lower Chenab Canal has brought under plough about 2.9 million acres most of which was formerly waste land. Similarly the lower Jhelum and Lower Bari Doab Canals are responsible for 1.2 and 1.4 millions acres respectively. The Sutlej Valley canals and Haveli canals command 3.3 and 1.3 million acres respectively.

India promises to be one of the leading countries of the world in regard to the development of hydro-electric power and great strides in this direction have already been made and Punjab's share in this is not small.

Situated on a spur of the Dauldhar range at elevations ranging between 6000 and 4,000 feet above sea level and connected by means of a tunnel over 15,000 ft. long are the Mandi Scheme or Uhl River Hydro Electric Project. Work on the construction of the first stage of this Scheme was started in 1926. The total capital outlay on the scheme to the end of the year 1939-40 has been Rs. 678.6 lakhs. There are various lines which distribute electricity. One line supplies substations at Kangra, Fahtankot, Dhariwal, Amritsar and Lahore. Another single line starts from Lahore and supplies substations at Kasur and Ferozpur while a similar line from Lahore serves substations at Shahdara, Sheikhupura, Chhar kana, Mohlan, Jaranwala and Lyallpur respectively.

Schemes are in hand for the extension of the transmission system to serve new stations at Sialkot, Daska, Wazirabad etc., The possibility of introducing tube well irrigation adds to the interest of this project. This would enable thousands of acres of uncommanded land to be brought under cultivation thereby greatly increasing the food supply of the province.

The following gives the classification and utilisation of the area in Punjab:—

	(1939-40). Acres.
Area according to Survey ..	61,001,606
Net area sown	25,744,129
Current fallows	4,984,732
Other uncultivated waste ...	14 489 389
Not available for cultivation	12,984,273
Forests	2,637.753
Total area irrigated ...	16.767,444
Total area under foodgrains	19 898 397

Punjab is essentially a country of peasant proprietors. Agriculture is the mainstay of the people affording means of subsistence to 65.5 per cent of the population. The total area sown in 1940-41 is 28 million acres which is nearly a tenth of the total sown area in India. Punjab comes third in this respect in India after the U.P. and Madras. Wheat, the staple food of the people of the province, occupies the largest acreage and the development of irrigation has led to a great expansion of the wheat area which in 1940-41 occupied 9.88 million acres, being the largest acreage in any province in India, covering nearly 36 per cent of the total wheat area in the country. The area under rice cultivation is a little less than 1 million acres, that under Bajra (or Spiked millet) is more than 3 million acres; Maize is cultivated on over 1 million acres, gram (pulse) on 4.7 million acres and other food crops on 4 million acres. Punjab stands among Indian provinces, first in the cultivation of wheat, second in Bajra and gram, third in Barly and Maize. Other important staple are oilseeds, rape, toria and sesamum, cotton and sugar cane. In 1940-41 2.7 million acres were under cotton cultivation as against 3.9 million acres in Bombay, 3.6 million acres in C.P. and 2.4 million acres in Madras. Large areas in the Canal colonies grow American cotton but in the other cotton growing districts the short staple varieties are predominant. Being predominantly an agricultural area, livestock occupies a prominent place in rural economy and the cattle and diary trades are well developed. Wool is a staple product in Kulu and Kangra and throughout the plains generally. The production of hides and skins is also an important industry.

THE CO-OPERATIVE MOVEMENT

In the progress of the Co-operative movement the Punjab generally speaking leads in many respects. The Punjab with about 26,060 societies stands first in the number of societies (91.8) per one lakh of inhabitants, while Bengal, with a much larger number of societies than the Punjab, comes second in that respect with 67.6.

The Punjab again leads in the number of members of societies with 36.4 per one thousand inhabitants, Bombay coming next with 30.9 while Madras and Bengal rank thereafter. Considering the third aspect of the growth of the movement viz., the distribution of the *working capital* by provinces, we find that Bombay and Sind lead in this respect with 130 and 107 annas per head of the population. The Punjab comes next with 88. In the Punjab, as in the rest of India, the agricultural societies predominate while the urban societies show a much slower development. Thus out of a total of 26,060 societies in 1940-41, 20,373 were agricultural and only 5,565 non-agricultural. But even in this respect, Punjab holds the first place with 5,565 societies out of a total of 17,459 for British India, while Bengal has 3,051 societies and Madras 2,256.

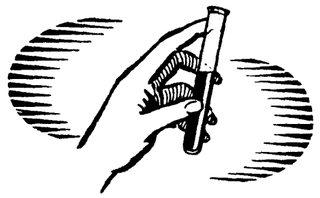
On the other hand, only in Bombay and Bengal do we find any real progress made in one important aspect of urban co-operation, namely people's Co-operative banks. The Punjab has 1,095 unlimited liability (non-agricultural) societies but only 224 with limited liability and even these are hardly people's banks in the real sense. In Madras again, most of the 1.164 non-agricultural credit societies are not real people's banks. In Bombay there were about 131 urban banks most of which working successfully. It is clear that the development of urban banking is a distinct contribution of Bombay to the co-operative movement in India, an example which other provinces are yet slow to follow.

As regards Thrift societies which are a variation of the urban co-operative societies the Punjab occupies a predominant position. There are about 1,000 such societies the bulk of whose members are schoolmasters. There are again 125 Thrift societies for women only, having a membership of about 2,000. The Punjab has also been the pioneer in introducing the very useful type of co-operative society to promote better living among its members. There are almost 300 such societies in the Province which have been responsible for carrying out quite useful and important work by way of village uplift as well as their economic objective of strengthening the position of the agriculturist. With the active encouragement of popular ministers there have been indications that before long such societies would be established in great numbers in other provinces also.

Despite the prominent position the Punjab occupies in the development of co-operative movement there has yet been only a beginning in the direction of land mortgage banks for the provision of long term loans to the agriculturists. At present there are only 12 co-operative land mortgage banks for whole districts, the rest confining their operation to single tehsils. Madras with its 38 primary land mortgage banks is the most progressive province in this respect. Bombay has 15 which have only recently started their operations. Though in the Punjab the Government guarantees the interest on debentures raised by these banks, thereby enabling them to meet all reasonable needs, there will have to be a Central Land Mortgage bank as in Bombay, and Madras, to serve as a starting point of a systematic development of land mortgage banking in the province.

The position as regards overdue loans in agricultural societies testifies to the soundness of the movement in the Punjab. Thus the share of the province in overdue loans by individuals is only 34 lakhs as against 11,66 lakhs for the whole of India. More striking are the percentage figures of overdue loans to working capital and loans due which are 14 and 15 respectively as against 34 and 46 respectively for all India.

While the non-credit side of the movement has made only meagre progress in India as a whole the most remarkable instance of the development that has so far been made is to be found in the Punjab where the interesting but difficult experiment in the direction of consolidation of holdings through co-operation originated in the year 1920. As a result of the patient work accomplished since then the movement for consolidation in the Punjab

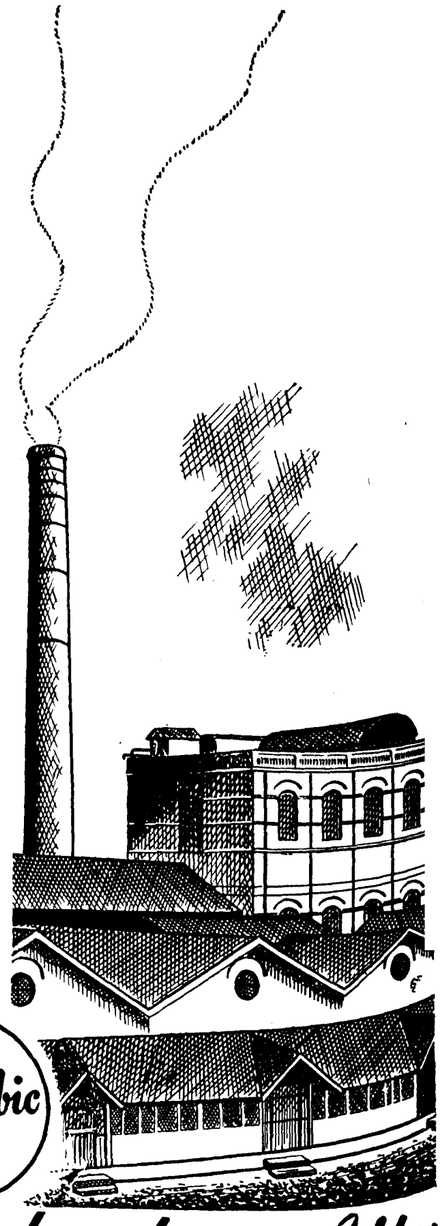


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has assumed significant dimensions in the shape of an important agricultural reform.

Compared to other provinces Punjab is extremely well placed in the quality of cows, she-buffaloes and goats and also in the amount of milk produced. With 25.5 lakhs of cows the milk produced is 447.45 lakh maunds as against Bengal's 63.7 lakhs cows yielding 325.15 lakhs of maunds of milk and C.P.'s 58.8 lakhs of cows yielding 447.43 lakhs maunds.

The Punjab has second largest she-buffaloes numbering nearly 26 lakhs which give on an average 2,320 lbs. of milk per head per annum. Among the goats the best animals are found in the Punjab where they, on an average, give 440 lbs. per annum compared with 170 lb. for India as a whole. But this is not all that is possible or necessary. Experience at most Government farms shows that cows purchased from villages when maintained under farm conditions yield in their subsequent lactations about 60 per cent more milk. Under similar circumstances buffaloes improve about 25 per cent. This indicates the immense potentialities of improving the yields of Indian cattle through better feeding, selective breeding and efficient management.

FRUIT CULTIVATION

India is one of the chief countries growing citrus fruits and produces 13,540,000 maunds of citrus fruits. With an annual production of 9,986 000 maunds India is the chief producer of oranges in the Empire. But India does not play an important part in the world trade in citrus fruits. The area under citrus fruits in India is estimated at 130,011 acres which represents only 6.5 per cent of the total area of 2 million acres under all fruits in the country.

The Punjab occupies the third place among the citrus fruit growing provinces with 17,150 acres as against Madras and C. P. with 31,270 acres and 22,497 acres respectively. She produces 1,559,370 maunds of citrus fruits, roughly 11.5 percent of the total produce for India.

The nutritive value of these fruits is being slowly recognised. This makes imperative that the area under the fruits should be extended, that the production should be organised on a commercial basis to reduce cost and make the fruit available for the undernourished masses.

FORESTS.

About 20 percent of British India is covered with forest land of a sort including both private and Government forests. The total area of forests under Government control during 1940-41 is 122,021 square miles and under private individuals is 53,821 square miles of which the Punjab has 6,301 of the first and 202 of the second, but as much as 4,732 square miles of the former are either unprofitable or inaccessible. The Punjab's forest wealth is not great, the percentage of forest to whole area of the province is only 7, a good part of which is useless, as against 41 in Assam and 23 in C. P. and Berar. The post-war forest policy in the Punjab, is clear and should be to increase the existing forest area by at least 20 to 25 percent by converting more waste land into forest, investigate whether 4732 square miles are inaccessible or unprofitable and take suitable steps to make them accessible and profitable and to bring the small area under private individuals under effective Government control.

INDUSTRIES.

Although the Punjab does not rank with the industrially advanced provinces of India, steady progress has been maintained in the establishment of new factories during the last decade. Rock salt, saltpetre and limestone for road building are the valuable assets. A few small coal mines are situated in Jhelum, Shahpur and Mianwali districts. Gold-washing is a remunerative occupation along most of the rivers. Iron and Copper ores though plentiful cannot be worked on a large scale owing to the difficulty of transport and the paucity of fuel resources within easy reach. Though not a large manufacturing province Punjab stands foremost in the large percentage of workers supported by small scale and cottage industries. There are a large number of cotton ginning and pressing factories located all over the province and there are several modern cotton spinning and weaving mills at Amritsar, Lahore, Lyallpur, Okar and Montgomery. In raw pressing and baling the Punjab occupies an important position and besides being a high exporter of raw wool, she has large scale wool spinning and weaving mills at Amritsar and one at Dhariwal. Lesser units are to be found in Srinagar

Other industrial concerns of note are ribbons and trimming mill, absorbent cotton, antiseptic dressing factories, several carpet factories and silk weaving factories at Amritsar, a paper products factory, stationery and drawing materials factory, a dry iceplant and metal foundries at Lahore; a turpentine and rosin factory and sugar factory at Abdullapur and plywood factory at Shahdara, a factory for the hydrogenation of vegetable oils at Lyallpur; several sports gear and rubber factories at Sialkot, cement tile factories and steel re-rolling mills at Lahore and Amitsar; a cement factory at Wah; tanneries at Wazirabad and Sialkot and hosiery factories at Ludhiana and Lahore.

Handloom weaving is one of the most important industries both as regards the number of workers engaged and the value of products. Blankets and woollen rugs are produced in considerable quantities. Much hosiery work is done on cottage lines. Other cottage industries of commercial importance are manufacture of safes at Gujranwala; veterinary and surgical instruments and hospital furniture at Sialkot, Lahore and Multan; glue industry at Rewari; ivory carving at Amritsar and Leias; copper and brass utensils at Jagadhri, Gujranwala and Rewari and cutlery at Nizambad and Wazirabad. The sericulture industry is expanding gradually and a large number of agriculturists in submontane tracts are taking an increasing interest in silk worm rearing and reeling operations. Craftsmanship in gold, silver and earthernware is widely distributed. Extraction and refinement of mineral oil is carried on in the Attock and Rawalpindi districts.

The Punjab produces on an average 60 lakhs of maunds of cotton every year, a major portion of which is exported. There are six large spinning and weaving mills in the Punjab and a large number of powerloom factories. An uptodate factory has been set up for the production of medicated cotton and gauze, bandages of all kinds as first aid dressings.

The Punjab produces ½ a million tons of oil seeds of which only a fraction is being crushed locally. There are 78 oil mills and 177 oil expellers. Rich as the province is in oil seeds, there is great scope for the production of paints, varnishes, solid waxes, greasy lubricating oils as well as for soap.

Hides and skins form an important raw material of the Punjab. Punjab hides and skins are recognised to be superior to those available in other parts of India. The province has a monopoly for the export of lamb-skins. The province exported in 1940 323, 871 maunds of raw and tanned skins, glue, manufactured from tannery waste and fleshings. This industry has sprung up in various tanning centres as cottage industry. The supply of bones offers possibilities for the manufacture of super phosphates or artificial manures, buttons, etc.

The Khewra salt mines in the Salt Range worked by the Government of India yield abundant supplies of salt. Saltpetre is available in substantial quantities in some places. Alum shale is available in the salt range. A number of chemical products such as carbonate of potash, nitrate of potash, sulphate of soda and sulphate of lime are known to exist in the province.

A large quantity of scrap iron is available. A number of foundries, rolling mills and engineering workshops which produce galvanised wares, buckets, tubs, pumps, stop cocks, iron utensils, machine tools and crude oil engines are also to be found in the Punjab. An extensive industry for the manufacture of knives and cutlery exists with an annual production valued at 3 lakhs.

CENTRAL PROVINCES AND BERAR

The Central Provinces and Berar form roughly a great triangle, midway between Bombay and Bengal. Their area is 131,557 square miles of which 80,637 are British Indian territory proper and 17,808 (viz.Berar) held in perpetual lease from the Nizam and the remainder held by Feudatory Chiefs. The population of the C. P. and Berar is 16.8 million (according to 1941 census).

The physiography of the Central Provinces exhibits three distinct features. The Vindhyan plateau in the north-west, covered with poor and stunted forest, descends steeply down its southern slopes into the rich wheat growing country of the Narmada (Nerbudda) valley. Further comes the high Satpura uplands of forest-covered hills alternating with deep water-cut ravines. The Satpura plateau declines into the Nagpur plain characterised by broad stretches of deep black cotton soil which make it one of the important cotton growing tracts of India and the wealthiest part of the C. P. proper. The eastern part of the plain forms the valley of the Wainganga and is mainly a rice-growing country watered by numerous irrigation tanks. In the Mahanadi basin further to the east lies the extensive rice country of Chhatisgarh. The south-eastern region of the Province is again mountainous containing 24,000 square miles of forest and deep ravines—mostly inhabited by jungle tribes. Berar lies to the south-west and is chiefly characterised by its rich black cotton soil.

The following gives a classification and utilisation of area in Central Provinces and Berar (1939-40):—

	Acres.
Area according to Survey ..	63,004,800
Total area sown ..	27,133,285
Net area sown ..	24,212,756
Current fallows ..	4,869,867

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	(1939-40). Acres.
Other uncultivated land ..	14,040,108
Not available for cultivation	4,882,156
Culturable area ..	5,147,663
Forests	15,861,496
Total area irrigated ..	1,380,124
Total area under foodgrains	20,542,572
Total area under oilseeds ..	2,383,656
Total area under fibres (cotton, etc.)	3,366,713

Agriculture is the chief occupation of the entral Provinces in common with the rest of ndia. About 30 percent of the population re engaged in agriculture. Land tenure is iefly on the malguzari or land-lord system anging from the great feudatory chief-ships holdings of small dimensions. Land tenre in Berar is similar to that of the Bombay aiyatwari system. Excluding forest and aste 67 percent of the total land area of the rovince is occupied for cultivation. Net rop area of the C.P. and Berar is 24.5 million cres and culturable waste of 14.08 million cres. Rice, the most extensive single crop, ccupies nearly 31 percent of the cropped rea. Rice is cultivated on 5.8 million acres, heat on 2.5 million acres and jowar on 5.4 million acres, the total production of the crops being 1.9 million tons, 510 thousand tons, and 1,140 thousand tons in the year 1942-43. Cotton is an important crop of the province. The acreage and production of cotton was 3.2 million acres and 9.4 thousand tons respectively during the year 1942-43. The corresponding figures for linseed were 1,038 thousand acres and 75 thousand tons in the same year. The province produces large quantities of oranges, for which the soil and climatic conditions in certain tracts are quite favourable. The area under orange cultivation in the province is nearly 30,000 acres.

The more important of the irrigation works in the Provinces are the Wainganga, Tandula, Mahanadi, Kharung, and Maniari canals. It is estimated that during the last 42 years a sum of Rs. 7. 25 crores has been spent on the construction of irrigation works by the Government. The conditions in the provinces are not suitable for productive irrigation works and the only justification for their construction is their value as protection against famine. The normal area under annual irrigation is now about 6,10,000 acres, the crop grown being mainly rice, and the income from these works more than covers their maintenance costs.

AREA IRRIGATED IN 1940-41

	By Canals.		By tanks.	By wells	By other sources	Total area irrigated
	Government Acres	Private Acres	Acres	Acres	Acres	Acres
C. P. & Berar.	*	1,547,072	*	164,515	75,243	1,786,830

*Included under "Private Canals".

The Central Provinces and Berar are immensely rich in forest resources. The forests consist of variety of valuable timber, bamboos, etc. The revenue from forests in 1940-41 amounted to Rs. 31.37 lakhs.

FORESTS IN THE C. P. AND BERAR

	(During 1940-41) Square miles.
Area of Province ..	98,573
Reserved forests ..	19,432
Protected forests ..	...
Unclassed forests ..	3,642
Total ..	23,074
Percentage of forests to the whole area of the Province	23

The following table shows the yield of timber and fuel in the Central Provinces from 1939-40 to 1942-43 as compared to the average yield during the years 1935-36 to 1938-39.

Average of 1935-36 to 1938-39—

Timber lakhs of c. ft. ..	115
Fuel lakhs of c. ft. ..	347
Total lakhs of c. ft. ..	462

Yield of 1939-40—

Timber lakhs of c. ft. ..	123
Fuel lakhs of c. ft. ..	332
Total lakhs of c. ft. ..	455

Yield of 1940-41—

Timber lakhs of c. ft. ..	137
Fuel lakhs of c. ft. ..	313
Total lakhs of c. ft. ..	450

Yield of 1941-42—

Timber lakhs of c. ft. ..	154
Fuel lakhs of c. ft. ..	284
Total lakhs of c. ft. ..	438

Yield of 1942-43—

Timber lakhs of c. ft. ..	189½
Fuel lakhs of c. ft. ..	236
Total lakhs of c. ft. ..	425½

The C. P. and Berar have not made much headway in regard to the co-operative movement. While the movement in the Punjab, Bengal and Madras has met with considerable success, in the C. P. it is still in its infancy. In 1940-41, the total number of societies in the Central Provinces and Berar was only 4,939 or 29.4 per lakh inhabitants. The corresponding figures for the Punjab and Bengal were 91.8 and 67.6. The total number of members of primary societies in the C. P. and Berar was in the same year 1,00,571 or 6.0 per thousand inhabitants. The corresponding figures for the Punjab, Bombay and Madras were 36.4, 30.9 and 24.0. The working capital of the co-operative organisation in 1940-41 amounted to only Rs. 5,04 lakhs in the C. P. and Berar, corresponding to 48 annas per head of population. An important test of the success or otherwise of a co-operative credit society is undoubtedly the promptness in repayment of loans by members and judged by this test, the co-operative structure in the C. P. is far from sound. Thus while for all India, the overdue loans were 34 percent of the working capital and 46 percent of the total loans due by individuals on the 30th June, 1941, the corresponding figures in the C. P. and Berar were 40 and 55.

The non-credit side of the co-operative movement has not made much progress in the C. P. in common with the rest of India. Of 19,639 societies in India during 1939-40, the Central Provinces possessed only 83 while the Punjab claimed 3,090, Bengal 1,905, the U.P. 7851 and Madras 746.

The important industries of the province are cotton textiles, manganese and coal mining, marble quarrying and cement manufacturing. Some of the other industries in various stages of development are: lime and pottery, glass, matches, tiles, leather goods, cotton ginning and pressing and oil. The number of workers engaged in large industrial establishment of the C. P. and Berar stood at 62,641 in the year 1939. The textile industry is by far the largest industry and there are at present seven textile mills in the C. P. and four in Berar. The number of silk looms in the Province is 2,503, while the total for British India is 311,329. The number of handlooms, engaged in wool weaving is 4,021, the total for the British India being 62,397. There were 3 cement works, 2 matchworks, 1 sugar factory, 3 glass factories and a number of rice and oil mills in the year 1939. Manganese mining forms an important industry of the province. In the year 1940, 29,302 workmen were employed in manganese mining, the total output being 652,755 tons. The coal mining in the province, with an output of 1,806,313 tons, gives employment to 15,518 workmen. Then follow the Jubbulpore marble quarries and allied works, the limestone quarries and the mines for pottery clay soap stone, etc. The number of general engineering works in the C. P. and Berar was 6 and the workers engaged in them were 364 in 1939. As for electrical power in the Central Provinces, in 1938-39, 13,009,000 units were generated and 5,624,000 units consumed for industrial purposes, but the figures respectively rose to 16,231000 and 8,604000 in the year 1942-43.

The province as a whole is yet in the early stages of industrialisation. But the abundant supply of important material resources in the C. P. and Berar is a pointer to the scope for industrial develpment of the Province during the post-war period. Apart from forest resources, which occupy a vast area of the Province, the C. P. and Berar possess essential minerals such as coal, iron ore, manganese ore, bauxite, limestone, soda and salts, steatite, tungstun ore, sand, quartz, felspar, ceramic clays, fuller's earth, barytes, copper ore, ochre, graphite, etc. The first six minerals are abundantly found in many parts. Coal is available in three regions, namely Chhattisgarh-Mahanadi area, Satpura region, and Wardha Valley, which are estimated to contain a total reserve of 17,000 million tons. The Province has a reserve of about 114 million tons of iron ore, fairly distributed all over and particularly at Lohara in the Chanda District.

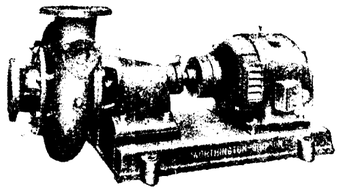
Manganese mining is the most important industry of the Province which contains some of the finest ore deposits of the world. It is now known that India holds considerable stocks of the mineral pyrolusite. In the Central Provinces alone there are, it is estimated, 10,466,000 tons of first grade (i.e.48%Mn) and 3,036,000 thousand tons of second grade ore (less than 48%Mn) of pyrolusite. Every year 4,92,000 tons of this ore have been extracted during the past 25 years, but the loss to Indian industries can be gauged from the ridiculously low price at which this vital material has been exported. At present raw materials such as manganese are used mostly in the manufacture of steel. When the non-ferrous metal industry comes to be organised in India, there is no doubt that the pyrolusite ores of the C.P. would be used for the benefit of Indian industries.

The forests of the Province which form one of its chief natural assets, have been

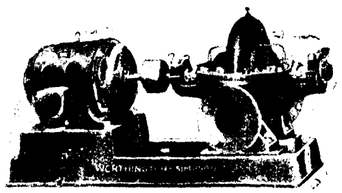
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Copper, manganese, chromite, bauxite, limestone fire clay are also worked in the province though no detailed statistics are available regarding their annual output, number of men employed etc. Chromite has facilitated the manufacture of stainless steel and limestone deposits have resulted in the establishment of 3 cement factories in Bihar employing about 2,600 workers and the province still offers scope for more about four cement factories. Deposits of gypsum have held out excellent scope for the manufacture of artificial fertilisers.

Bihar has plenty of raw materials for developing paper industry and though there is only one paper mill in the province at present employing 1,377 workers, there is scope for more. The cattle wealth of the province is considerable and though some of the best hides are produced in Bihar there are no adequate number of tanneries. There is enough lac in Bihar to justify the starting of a plastic industry for the production of telephone receivers, electrical switch covers, fancy goods, etc. Prospects for the manufacture of starch, celluloid, and artificial silk are also bright.

With regard to the generation and consumption of electric power, the available statistics reveal that in Bihar 46,346 units were generated and 39,959 units consumed in 1938-39 but in about four years, i.e. in 1942-43, the figures rose up to 68,690 and 62,407 respectively indicating the impact of war conditions on the industrial consumption of electricity in Bihar. There are at present three big generating stations, at Tatanagar, Jharia and Dalmianagar, besides some Diesel oil engine plants in a few other towns.

The food crisis of 1943 has been felt in Bihar as elsewhere and 1944 witnessed violent epidemics of malaria which took a heavy toll of the peasantry. Even on the eve of this war Bihar was a deficit province from the point of view of food supplies. In 1939 the Director of Agriculture, Bihar, estimated that while the modest requirements of the province stood at 223 million maunds the local production lagged behind at 179.5 million maunds only. The war has given fillip to Bihar industries but agriculture has not received proper attention. The post-war development plan of Bihar should therefore aim at rejuvenating the argiculture of the province and encourage the establishment of the new industries justified by the enormous potentialities of the area.

SIND

The province of Sind has been created in 1936. Though linguistically, ethnologically and geographically the province holds out features of affinity with the Punjab it has been part of the Bombay Presidency since 1843. The agitation for the formation of a separate province of Sind dates back only to 1930 when, on the eve of the first Round Table Conference, separatist tendencies gathered strength and acquired political influence. The Niemeyer Report detailed the financial implications of the separation of Sind and recommended a Government of India subvention of Rs. 105 lakhs per year for a period of ten years after which the aid will be progressively decreased. The province as carved out in 1936 has an area of 48,136 square miles and a population of 4,535,008. The Muslims formed the majority with 3,208,325 while the Hindus counted only 1,229,926. The language spoken is Sindhi and Hindus play a dominant role in the trade of the province.

The following table gives the classification and the utilisation of the area in Sind:—

	(1939-40). Acres.
Area according to Survey ..	30,179,073
Total area sown ..	5,623,877
Net area sown	4,945,643
Current fallows ..	5,165,819
Other uncultivated land ..	8,144,747
Not available for cultivation	11,202,677
Forests	720,928
Total area irrigated ..	4,616,420
Total area under foodgrains and pulses	4,244,236
Total area under oilseeds ..	289,905
Total area under cotton ..	854,320

The agricultural fortune of Sind is directly linked to the Sukkur Barrage and the Sind canals which, together with the Indus, now supply water for over 7,500,000 acres. The Barrage was completed in January 1932 and since then there has been a steady growth in the prosperity of the ryots. Assured supply of water has opened up vast scope for commercial crops as well and the rapid extension under longstaple cotton brought money to Sind agriculturists and served Indian textile mills satisfactorily. The possibilities of the Barrage scheme are by no means over yet and it has been estimated that the ultimate area of annual cultivation on the scheme would run to 5 million acres covering 2,440,000 acres under wheat, 850,000 acres under cotton, 625,000 under rice, 635,000 acres under jowar, bajri etc. and 410,000 acres under oilseeds.

Sind is the least industrialised of all the provinces and presents greater potentialities of agricultural development than industrial advancement. Of the present population of 45 lakhs 36 lakhs live in villages and depend on agriculture. It is estimated that there are about 70,000 landholders holding less than 25 acres, 45,000 holding over 25 but under 100 acres, and 18,000 holding over 100 acres. In non-rice areas the normal holding of a cultivator is 32 acres while in the rice areas the holding is 8 acres. Cultivation is done by 70,000 small holders and 100,000 tenants. Annual tenancies are the rule and half the produce is paid as rent. About 40,000 acres are under fruit trees (mangoes, citrus and dates) while vegetables claim 12,000 acres. The Director of Agriculture, Sind, stated recently that the area required (about 80 lakhs acres) for giving work to the agricultural population exists at present and the province could, with its production, feed three times the present population. Sind's total foodgrain requirements are only 154 lakh maunds while the actual annual outturn at present comes to 410 lakhs maunds. If the Lower Sind Barrage, to be executed immediately after the war is over, comes into being the area cultivated will further increase by 15 lakhs acres. The average annual earnings of the Sindhi cultivator is Rs. 500/-. The live-stock situation is quite satisfactory. Sind has 17,000 breeding bulls, 6,00,000 work bullocks, 7,00,000 cows, 4,00,000 young stock, 7,500 buffalo bulls, 3,75,000 milch buffaloes, 1,25,000 young female buffalo stock, 6,50,000 sheep, 13,00,000 goats and 8,00,000 fouls. While the province is well provided with bullocks for cultivation and cows and buffaloes for milk requirements, deficiency is felt in poultry and vegetable supplies.

As a result of the final liquidation of the Barrage Debt, the Government of Sind are emboldened to launch on two new barrage schemes to divert the Indus water for irrigation purposes. The projects are estimated to cost Rs. 16 crores and would bring 50 000 thousand acres more under cultivation. Orders for the required machinery have already been placed and on their arrival construction would commence.

The raw materials of the provinces are considered promising to start a few important industries. The Industrial Committee which was set up in July 1943 to explore the industrial possibilities of Sind has not yet submitted its report. About 3,200 handlooms are engaged in cotton weaving while 612 looms are turning out silk fabrics. The two silk factories in Sukkur employ 70 workers. There are 13 general engineering workshops in the province giving employment to 1298 workers and one foundry with 50 workmen. Most of the engineering workshops are in Karachi. Sind can also boast of one sugar factory engaging 177 workers, two cement factories employing 524 workers and one glass factory manufacturing medicine bottles. A biscuit factory in Sukkur is thriving excellently well and a carbon paper and typewriter ribbon factory is producing good quality products. Thanks to conditions created by the war the businessmen of Sind have made huge profits estimated at Rs. 30 crorès and more. While thus there is abundance of funds for post-war industrial investment the raw materials necessary are also not found wanting. Longstaple cotton for textile mills can be cultivated, and grass for the manufacture of paper is found in adequate quantities. Sand and minerals necessary for ceramics and oilseeds for starting an oilcrushing industry in Sind are found in substantial quantities. Salt is the principal industry in Sind and its post-war scope is rated high.

The road plan for Sind aims at a target of 4,900 miles of metalled or cement concrete roads and about 6,000 miles of improved earth roads as against the present 669 miles of metalled and 690 miles of improved earth roads. If the Government of India aviation plan is put into effect Karachi would assume a key position and this would go a long way in furthering the economic prosperity of the province.

There is a large scope for extensive development of fisheries in Sind. The Fisheries Expert Dr. Ramaswami Naidu stated that the Sind coast abounds in large supplies of sharks with extraordinarily high oil-yielding capacity. Since there is abundance of fish for diet the scope for dehydration and canning is considered vast. Owing to war, imports of cod liver oil have been drastically curtailed and thus a golden opportunity has presented itself to Sind to develop her shark liver oil industry which could enable the people to dispense with the imported oil altogether. Though the Government of Sind have not yet decided whether they should start the shark liver oil industry themselves or leave the venture to private initiative there is little doubt that Sind would rapidly progress in this line in the course of a year or two.

ASSAM

The province of Assam covers an area of 67,000 square miles and has a population of 11 millions. The province falls into two main divisions, the hills and the plains. The plains consist of the basins of two rivers, the Brahmaputra and the Surma and it is here that the bulk of Assam's inhabitants are to be found. For out of her 11 millions some 9½ millions are in the plains and 1½ millions in the hills. The average width of Assam valley is about 50 miles and it is a fertile tract which has been reclaimed from jungle and brought under cultivation during the past hundred years.

The Brahmaputra valley lies to the north and the Surma valley to the south; hilly

tracts surround these areas on almost all sides. The Brahmaputra valley, about 500 miles long and 50 miles broad, is an alluvial plain. The Surma valley, about 125 miles long and 60 miles broad, is a flat plain. Under these conditions distribution of population varies greatly with the nature of the terrain and the soil. The climate of Assam, is cold and extremely humid. The maximum and the minimum temperatures are 85 and 60 degrees respectively. Rainfall is abundant but varies from place to place according to the height above the sea level. Cherrapunji, famous as the place with the heaviest rainfall in the world, records as much as 500 inches. Sylhet records 157 inches, Silchar gets 124 inches, Goalpara and Lakhimpur get 115 inches and there are places which have a rainfall of only 68 inches.

The following gives the classification and utilisation of the area in Assam:—

	(1939-40). Acres.
Area according to Survey ..	35,484,800
Total area sown ..	7,507,112
Net area sown	6,638,768
Current fallows ..	1,412,955
Other uncultivated land ..	18,689,408
Not available for cultivation	4,577,400
Forests	4,166,269
Total area irrigated ..	654,749
Total area under foodgrains	5,619,638
Total area under oilseeds ..	442,092
Total area under tea ..	433,351

Of the total area in Assam, about 7 million acres are under cultivation, of which less than a million acres are irrigated. More than 1.4 million acres are fallow, four million acres are under forests and five million acres are culturable wastes. The soil of Assam is generally composed of sand with a thin layer of humus at the top. Humus is formed of decayed organic matter, leaves and branches and is black in colour. It is this humus that has imparted fertility to the loose sandy soil of Assam. The Brahmaputra valley, however, consists of alluvial soil. Rivers rising from the Naga hills flow through the state of Manipur and then roll down the Surma valley contributing not a little to its fertility. The Brahmaputra valley has extensive tracts of rice cultivation, tea gardens and forests. The hills of Assam comprising the Naga Khasi, Jaintia, Lushai etc., are covered with forests.

Rice, jute, tea and sugarcane are grown in the fertile river basins. Short staple cotton is grown in the hills. The marshy lands are covered with big grass and reeds. Sal, magnolia, amoora, fiscus, mesu, jarul, sisu and khair are some of the trees found in the forests.

The animal wealth of Assam consists of birds of various species and animals like elephants and rhinos. Elephants are caught alive, and the collected ivory and rhino horns form a considerable part of the trade of the province.

Coal, limestone and petroleum are the chief minerals of Assam. Petroleum is confined to the basins of the Brahmaputra and the Surma and the belt is traced over a distance of some 800 miles from North East Assam through Cachar and Chittagong districts to the Arakan Coast. Coal is mined in the proper sense of the term, as opposed to mere surface working carried on in the Khasi hills, at Margherita in Lakhimpur district and at Borjan on the Naga hills. About 275,000 tons were mined in 1939. Limestone is quarried in the Khasi and Jaintia hills. Small amounts of iron are obtained in the Khasi and the Mikir hill, platinum in the sands of Dihing river, lead and silver in the Khamti hills.

Even such a brief review of the geography and natural resources of Assam will show that the Province is not badly endowed by Nature. The climate is pleasant. The soil is fertile, rainfall abundant and the rivers perform their dual function of helping cultivation and serving as a means of communication. Though Assam's agriculture presents some defects, it has so far found a great part of the food requirements of the people and given her large export surplus of products like tea. But there is a vast hiatus between the big and up-to-date plantations which are worked as modern industries and the small patches of land which are tilled by the poor cultivators according to their own primitive methods. The poor peasant has not helped himself so far. He has not made full use of scientific knowledge and improved implements. Assam has plenty of mineral resources and excellent possibilities for cottage industries. In India, petrol is almost the monopoly of Assam and the Punjab. Assam has iron, coal and other minerals required for rapid industrial advancement. If her cottage industries are fully developed the income of her poor agricultural population would increase considerably.

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But in a sense Assam is even more backward in industry than the other provinces. The presence of the tea and oil industries may seem to argue against this view. But the test of industrialisation is not whether there are a few modern largescale industries, but whether the greater part of the national resources of a country are utilised in industrial production. While Assam grows agricultural raw materials, very little of them is utilised in industrial production within her borders. The bulk of Assam's exports consists of raw materials like oilseeds, coal, lime, rubber, timber, jute, raw cotton, lac, hides, skins, oranges and pine apples. A brief account of Assam's industrial resources may be useful in this connexion. Tea is grown in large quantities in Assam. Of the 841,000 acres under tea in India 438,000 acres are in Assam. And they produce 269,000,000 lbs. The total labour force of the tea industry in Assam is estimated at 12 lacs. Assam's second great industry, oil, dates from 1888 when the first well was sunk at Digboi. From 1921 onwards there was a great expansion in production which in 1931 was ten times what it was in 1921. There are two petroleum refineries. The average number of men employed in them is 2302.

Coal is extensively mined in Assam, in the Naga Hills and Lakhimpur District. About 275,000 tons were mined in 1939. It is computed that 3.360 million tons of coal are likely to be available but not worked due to transport difficulties.

Small quantities of iron are obtained in the Knasi and Mikir hills, gold in the sands of the Dihing river, lead and silver in the Khamti hills. But these could be worked with benefit when cheap power is available. Lime is quarried in Sylhet and cement can be manufactured. So far there is only one cement company, while the raw materials and the need for cement alike suggest a vast expansion of this industry. Besides there are 32 rice mills, 5 sawmills, 12 oil mills and all these are distributed throughout the province.

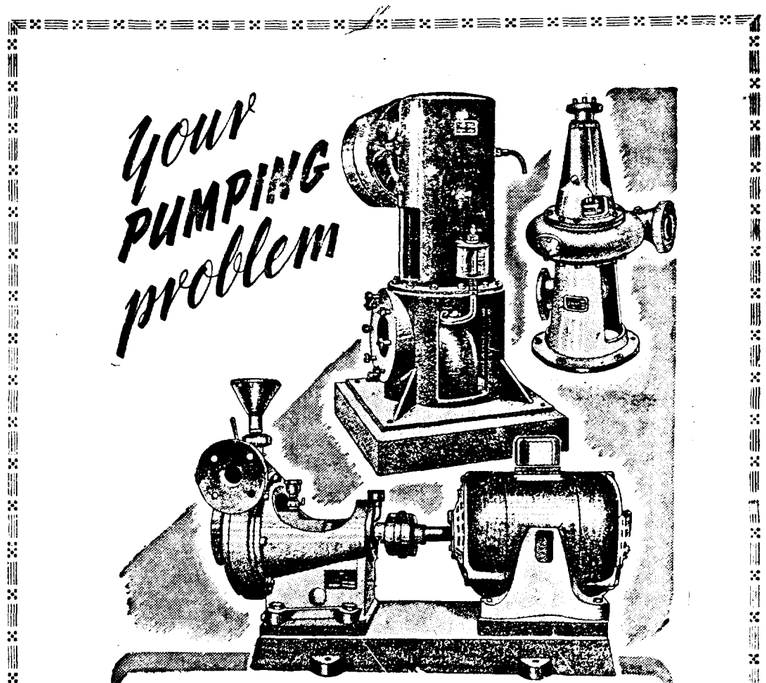
The cottage industries of Assam also deserve mention to complete the picture. Wood, bamboo, grass, hemp and other forest produce being extensively found, mats of bamboo and reeds, boxes, and furniture made of reeds, bangles and other works of lac, boat construction, toy making, manufacture of wooden utensils, wood carving, comb making, ivory carving are developing as cottage industries. Limestone burning, and rough pottery are common in the Sylhet district. Bell metal articles, shoes, jewellery, enamel-ware, embroidery, blankets, molasses, these are carried on a cottage industry scale.

Preparation of dried and salted fish and fish oil are indigenous industries of Assam. Since the forests of Assam supply enough bamboo and grass, a paper industry can be started. Facilities of transport can help the fruit grower to market his goods before they perish.

In the post-war period Government have a responsibility in the establishment of large industries such as iron, textiles, etc. They should see that the textile mill does not kill the cottage spinning—which is very common in the households of Assam. Competition between large and small industries should be eliminated. The small industries need especially to be protected. What are the possibilities of getting hydro-electric power in Assam? It has been calculated that India ranks third in the world in hydro-electric resources. But we are using only a fiftieth of what we have! In Mysore, Bombay, Madras, Kashmir and the Punjab hydro-electric power has been developed. While there is scope to develop more in these areas there is also scope for development in other areas. And Assam is clearly one of them. For is not Assam a land of rivers and mountains with plenty of falls? There are excellent possibilities of producing electricity in the Baghmeri-Siju-Jankarag (Samsang) River project in the Garo foot hills adjoining Jharia-Jhanjail-Mymensingh towns. There is a lot of coal also north of this project area. This project, if developed, will be useful to both Assam and Bengal. The Cherrapunji project and Garo Hills project (the latter is described in Blenkinsop's valuable report of 1923) are two more projects which are promising.

The possibility of dam construction on the Um Kynshi and Um Nigi streams in the west Khasi hills is well worth considering from this point. The Um Kynshi river forks above the drop to the gorges and so the river flow can be diverted down the branch not selected for the headworks and so construction will be facilitated and when required the flow of the unused branch can be diverted down the branch used to give water for the power station and so a very considerable flow in cusecs can be had.

The Um Nigi Project near Mawphlang and Chhatak (Sylhet District) has a river bed, which rises only some 35 feet in no less a length than 3 miles above the proposed dam site and a magnificent natural reservoir is readily available. The dam sites have a natural solid rock foundation and so the dams will be very cheap and solid and safe against earthquake risk. Both the



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rivers possess excellent possibilities for higher and subsidiary or even principal reservoirs in their higher reaches.

Other projects which require special mention are the Cherra Project and the Hukong Valley Project. Thus Assam offers splendid possibilities of producing power. With development of power, agriculture and industry will be fully benefited.

ORISSA

The Province of Orissa was created on the 1st of April 1936 and consisted of an area of 32,195 square miles and a population of 8,729,000 persons. The new province is the result of the amalgamation of the areas of various Oriya-speaking peoples in the Provinces of Bihar and Orissa, Madras and Central Provinces. Agriculturally, Orissa is very backward and from the point of view of industries she is the least developed of the Indian Provinces; but the Oriyas have always been of the opinion that their economic development as well as cultural advancement were delayed mainly owing to the fact that their land has been parcelled out and administered by other provinces. If there had been a single Oriya block one or two decades ago, they believe, big factories would have been set up already and many cottage industries would have been encouraged to augment the agriculturist's income. Orissa has been working since 1936 organised economic development and as a result of the present-day necessity to plan for postwar development the province fortunately has begun speeding up her schemes to improve the lot of her suffering masses.

The following table gives the broad details of the agriculture of the Province:

	Acres
Total Area	20,582,576
Net area sown	6,434,576
Total area irrigated ..	1,397,965
Current fallow	1,680,606
Other uncultivated land ..	3,177,386
Not available for cultivation	6,211,606
Forests	2,637,753

In 1939-40 nearly 6 million acres have been under foodgrains. Rice alone accounted for more than 5 million acres, Ragi was grown under 296,366 acres, Jowar under 44,081 acres, Maize 31,767 acres and Wheat under 3949 acres. Among commercial crops, the area under oilseeds was 301,587 acres of which linseed accounted for 7982 acres, seasum 107,611 acres, rape and mustard 29,371 acres and groundnuts 22,863 acres. Sugarcane was grown on 32,702 acres while jute accounted for 22,654 acres. 8359 acres were devoted to cotton and tobacco cultivation was thriving on 31,092 acres. Among cottage industries may be mentioned the handloom industry, brass, bell-metal, silver filigree, cutlery, wood and paper pulp and articles made of horn. It is well-known that Orissa forests can supply huge quantities of fuel and good timber. Fisheries have got a great future if properly developed. The extensive resources of the Chilka Lake and Puri offer ample opportunities for further development. It is estimated that on an average 9000 mds. of cured fish and 50,000 mds. of uncured fish respectively are being exported from Orissa to Calcutta annually.

Regarding the mineral resources of the Province the chief are iron, coal, manganese, mica and limestone. Iron ore is found in the States of Mayurbhunj, Keonghar and Bonai. The coal mines are situated in Angela, Sambalpur and in the stations of Ganguptra, Talcher and Athmallik. The formation of this new province of Orissa has resulted in an addition of 15 factories and some valuable fish-curing yards.

A provisional draft plan for the development of Orissa has now been made known by Mr. B. K. Gokhale, Adviser to the Government of Orissa. The plan is for a five-year period and involves a total expenditure of Rs. 33 crores. Special emphasis is placed on the re-settlement of land and industries for demobilised military personnel. The five-year plan is for 24 main subjects of development comprised under 231 schemes. The schemes have been classified into (1) Special Priority Schemes (2) All-Provinces Schemes and (3) Particular Area Schemes. The Special Priority projects would be taken up immediately as emergency measures. With regard to agriculture there are about 20 schemes costing Rs. 76 lakhs. An Agricultural College is to be established in the Province and in the current financial year Rs. 24 lakhs are being spent for the Grow-More-Food campaign. A wholetime Director of Agriculture and Food Production has been appointed to see that the money allotted is utilised to the maximum advantage. There are 27 veterinary schemes involving a total expenditure of Rs. 42 lakhs and a veterinary college will soon be established in Orissa and steps taken to improve the livestock of the Province. Forestry gets Rs. 10 lakhs and Fisheries Rs. 31 lakhs. A Co-operative Department will be organised with the establishment of a Provincial Co-operative Bank and the present textile marketing organisation will be converted into a Provincial Handloom Weavers Co-operative Society. Agricultural production and marketing societies for different crops would also be organised.

As regards industries and industrial training a sum of Rs. 1,27 lakhs has been provided. The scheme includes the raising of the Orissa School of Engineering to a College and the establishment of a Polytechnic. Rs. 3 lakhs has been allotted for a thorough industrial survey of the Province's undertakings by Dr. Mahanty. The comparatively smaller allotment for industries and industrial training is explained by the fact that in this line private enterprise should play a very active part in the future. The possibilities of a thermal station based on Talcher coal at Cuttack is mentioned and if the scheme is put into practice, the industrial development of Orissa would be speeded up. A power station at Cuttack would serve the three postal districts and ultimately link up with Dodhuna and Begra in the South and thermal or hydro-electric stations in Sambalpur and Bengal.

Another important feature of the Plan is the provision of measures for flood prevention and irrigation to which Rs. 75 lakhs and Rs. 99 lakhs have been allotted respectively. As regards roads and communications the Plan allots Rs. 6,23 lakhs for the first five-year period. This is exclusive of the national highways for which the Central Government will spend Rs. 4 crores. The total cost of the road programme therefore comes to Rs. 10 crores. With regard to Air Transport it is stated that the existing aerodromes must be retained and smaller ones constructed for which Rs. 18 lakhs have been provided. 26 schemes under Medical and Public Health are mentioned and the cost is estimated at Rs. 2,49 lakhs. Housing and Town Planning gets Rs. 1,43 lakhs and Rural Uplift and Village Amenities Rs. 71 lakhs. The Orissa Education Scheme is an attempt at applying the Sargent's scheme for the Province and 43 schemes are drawn up. Total expenditure is expected to be Rs. 4,63 lakhs. Compulsory primary education will be introduced in all municipalities and a school of arts and crafts will be established. The Utkal University, which has now come into being, gets an allotment for buildings, extensions and library. Mr. Gokhale also indicates the provision of a large sum of money for the new capital and the establishment of a High Court in Orissa.

Regarding the financing of the Orissa Plan it is stated that about half the capital expenditure, e.g. on electrification, roads, embankments and buildings, will be met by way of loans while the other half of the capital expenditure and entire recurring expenditure will be financed from revenue including subsidies and grants from the Centre. While the Provincial Government would explore all possibilities of tapping new sources in the shape of agricultural income-tax, sales-tax, surcharge on tax, increase in cess etc., Orissa definitely looks forward to a substantial help from the Centre in order to achieve her post-war targets. The outline announced by the Adviser does not make mention of the organisational reforms in agriculture and, like the plan prepared by the Bombay Government, leaves the large-scale industries to be determined by the Government of India. Orissa has immediate possibilities of starting paper and cement factories at Koraput and the development of bauxite, manganese and other minerals will also have to be taken up in the near future.

PLANNING IN THE INDIAN STATES

MYSORE

Since the revival of the Mysore Economic Conference the task of postwar planning for the State has been ably pursued with full cooperation between the officials and the general public. The State is well endowed with natural resources and owing to the far-sightedness of a series of able Dewans, the economic development of Mysore has won the admiration of British India. Plan for postwar development in this State is, in fact, a continuation for the pre-war effort, though conditions and ideals created by six years of war might have greatly accelerated the tempo of the drive. A new factor that has to be reckoned with by planners in Indian States as in the Provinces is that they have to formulate their policies and evolve local schemes so as to fit them in the general economic plan for all-India. The country has to be taken as a single unit and both the Bombay Plan and the Government blue books on postwar schemes have made this clear. The Plan for Economic Development of Mysore drawn up by Mr. P. H. Krishna Rao, Commissioner for Economic Development and Planning, has been correctly conceived so as to maximise the utilisation of the resources of Mysore for the people of the State and to harmonise the Mysore Plan with the Development Plans for India as a whole. Calculation of the targets has gone on familiar lines suggesting a close modelling on the Bombay Plan, the People's Plan and the Government of India plans. Certain all-India problems like fragmentation of agricultural holdings, soil erosion, primitive land tenure etc. are not acute in Mysore and hence suitable changes have been duly incorporated in the proposed plan for the State. The recent economic survey of some 258 villages in Mysore has yielded the much needed data for inaugurating a correct policy for rural development and the elaborate industrial questionaire issued is expected to bring in statistical material to tackle the industrial sector of Mysore economy. The Mysore Industrial Statistics Act of 1943 remedies the defect in the Census Act and the result when collated will be a great help for the authorities in drawing up the necessary industrial plans. The floor space available for each family in each municipal town was surveyed at the recent census and the Government could, as a result, prepare schemes for housing programmes for all classes of people in different areas of the State. Better distribution of industries so as to prevent concentration in the Bangalore and Mysore areas is aimed at; and the economic development of the Malnad or hill tracts and Jog Fall scheme would correct the existing maldistribution of industries. The development plan for Mysore involves an expenditure of Rs. 200 crores in a period of fifteen years. It is interesting to note that Mysore, which is one/fiftieth of India in area plans for an amount just one-fiftieth of the capital involved in the Bombay Plan. The capital requirements for the first five years are calculated at Rs. 35 crores distributed as follows: Agriculture Rs. 10 crores, Sericulture Rs. 10.85 crores, Industries Rs. 5.25 crores, Transport Rs. 6.7 crores, Housing Rs. 3 crores, Public health Rs. 3 crores, Education (buildings) Rs. 0.5 crores, Medical Rs. 0.5 crore, Hydro-electric work Rs. 2.2 crores and Malnad improvement Rs. 2 crores.

The actual requirements of capital or recurring expenditure in the 5-year periods succeeding the first five year period of 1945-46 to 1950-51 are not estimated because of the uncertain factors involved. However, it is stated that the progress would be maintained and expenditure in the second and third phases would be kept up in geometrical progression. The following table gives the financial plan for the economic development of Mysore during the first 5 year period:—

(Expenditure from Revenue in Lakhs of Rupees).

Head of Account.	Average annual expenditure during 5 years from 1935-36 to 1939-40.	Budget for 1944-45	Proposed under the Plan.					
			1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.	Total for 5 yrs.
Medical ..	15.18	26.29	30	33	36	39	42	180
Public Health ..	2.49	6.56	8	10	12	14	16	60
Public Works ..	31.26	101.72	125	145	165	185	205	825
Irrigation Works ..	14.42	39.48	45	50	55	60	65	275
Civil Works ..	12.44	25.21	30	35	40	45	50	200
Communications ..	4.40	37.03	50	60	70	80	90	350
Education ..	52.34	95.55	117	147	176	206	238	884
Agriculture ..	4.17	7.15						
Veterinary ..	3.45	8.50	20	25	30	35	40	150
Horticulture ..	1.78	2.92						
Sericulture ..	1.26	5.51	8	9	10	11	12	50
Industry and Commerce ..	1.67	4.21	5	6	7	8	9	35
Co-op. Societies ..	1.40	1.82	2	2	2½	2½	3	12
Grants for public improvements ..	7.68	33.07	50	50	50	50	50	250
Total ..	122.68	293.33	365	427	488½	550½	615	2,446

Mysore has sizeable postwar funds and her credit stands high and her revenues are growing fast. Bottlenecks there are, as for instance, the lack of trained personnel. But those are worries not peculiar to the State; and in fact Mysore is more fortunately placed in the matter of able engineers and technicians than several other areas in India. Her resources, agricultural as well as industrial, are adequate to sustain the ambitious plans for the allround development of Mysore put forward by Mr. Rao.

BARODA

The greatest difficulty in planning for the future in Baroda is that in all its biggest schemes it has to take into account the needs and restrictions of neighbours. A glance at the map of the State will show how dispersed is its territory. Not one of its districts is adjacent to another, and what is more, each district has more in common with its neighbours in British India or other States than with any other district of the Raj. Amreli for instance, isolated in scattered bits in the heart of Kathiawad, has little social commerce with the other Baroda districts in the main land of Gujarat. Mehsana, up in the north, has all its market connections, its social exchange and cultural give and take with the Ahmedabad district, and has little in common with the central district of Baroda, and so on. Any big scale programme of improvements, either irrigation or communications or other public works has inevitably to take into account the manner in which it affects other jurisdictions. The Sabarmati Irrigation Project for instance can only achieve success with the co-operation of the Bombay Province and the fringe of States through which the head waters of that river flow. The future may give rise to some sort of a composite control authority like the Tennessee Valley administration on which basis the control of floods can be achieved, the erosion of soils prevented, and the irrigational facilities properly distributed throughout the region affected.

Planning in Baroda began with the appointment of a committee with the Commissioner of Agriculture as chairman on the 27th April 1943. A ten year plan of economic reconstruction was envisaged in the order appointing that committee. Later on other small committees were devised for labour, post-war depression and analogous problems. Subsequently on the 20th March 1944, His Highness's Government set up Committees on the analogy of the Government of India Committees on

(1) Resettlement and re-employment

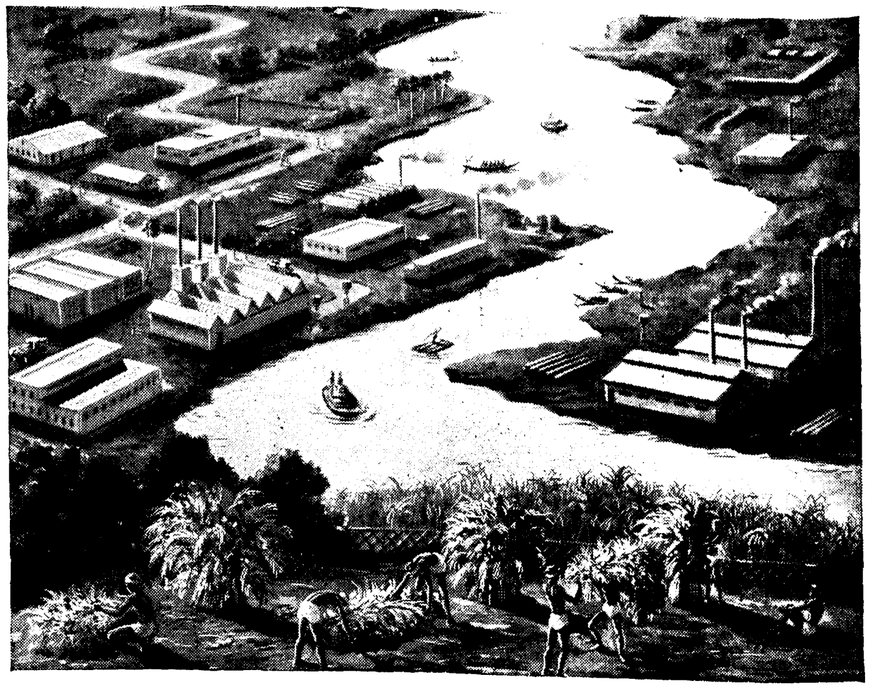
(2) Disposal, Contracts and Government purchases

(3) Public Works and Communications with three sections devoted to (a) Transport, (b) Posts, telegraphs, telephones and air communications and (c) Electric Power, water supply and other public works,

(4) Trade and Industry,

(5) Agricultural Policy.

These committees met usually once a month or whenever necessary and put up preliminary proposals. Thereafter a separate Ministry of post-war reconstruction was appointed on the 1st October last, and the Member in charge was made ex-officio President of these Committees. The plans were taken in revision and rearranged on a wider term of years, with details for the First Year Plan. It is important however at the outset to remember that in certain respects such as social services, like education and public health, or railways, this State has pursued steadfastly such a progressive policy that there is little scope for much further extension. For instance, compulsory education is now firmly established for nearly 40 years, and what is needed most particularly in the next five years is intensive development in primary education, while increasing facilities in the higher and



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more technical and professional sides of education. Similarly in respect of Railways, this State has the most extensive network for its size as compared to the rest of India. In medical relief also, the establishment of cheap rural dispensaries throughout the State on the basis of a five mile radius with the provision of taluka maternity wards has had the most beneficial effect on the birth-rate, helping to raise thereby the general health conditions, and the quality of life in the country.

Taking the question of educational progress, the department has put up a programme of improvement in the junior and basic grade, of provision of nursery schools, for increasing facilities in secondary education in accordance with the scale recommended by the Central Advisory Board, amounting in all to an additional annual cost of 2.43 crores of rupees with about 20 lakhs as capital expenditure on buildings and equipment. At present 1749 out of 3000 villages have school facilities provided. These villages contain a population of 23.23 lakhs or nearly 82 per cent. of the total. In this area, nearly 91 per cent. of boys and 79 of girls who are enrolled in school strength would then need only to be increased from 2,73,000 to 3,51,000. Pre-primary instruction is given at present in 34 institutions in the State to only 11,000. Secondary schools number 156 with 28,000 pupils. Here there is more scope for development in order to meet the rapidly increasing inflow of recruits from the primary stages. Schools will have to be increased for accommodating 73,000 students, the graduate and trained element in the teaching staff will have to be made for an increase in expenditure of 68 lakhs per year over the present annual cost of 11.77 lakhs (in Government and private schools). Progress in technological facilities for the training of the different categories to technicians is needed by industrial concerns in the future as follows:—

(1) Chief Executives as well as research workers through a higher type technological institute.
(2) Minor executives, foremen etc. through technical high schools.
(3) Skilled craftsmen through certificate Courses.
(4) Commercial education.

In Baroda State, provision is made in the proposed programme of about 2,000 seats in the technical high schools. Increased cost for this purpose is estimated at nearly 10 lakhs.

HYDERABAD

The objective of the Hyderabad post-war plans is not merely to switch over to peace-time industries or demobilisation of soldiers but an all-round industrial and agricultural development. Hyderabad's contribution to war effort is well-known and her preparation for the coming peace is as energetic as ambitious and based on targets to be reached in a definite period. The State aims at total mobilisation of the economic resources for the uplift of the people. A Post-war Planning Board under His Excellency the Nawab Saheb of Chhatari has been set up and thirteen committees are now investigating several problems with a view to evolving correct development plans. It is estimated that the various post-war schemes are estimated to cost Rs. 232 crores during the first ten years. Schemes involving an expenditure of Rs. 95 crores have already been prepared. Agriculture occupies a prominent place in the programme and a College of Agricology is to be set up for providing facilities to train personnel for agriculture and animal husbandry. Hydro-electric schemes being vitally connected with agriculture and industries receive special attention. An agreement has been reached with the Government of Madras on the question of apportionment of the Tungabadra waters and the Civil works of the Nizamsagar Hydro-electric scheme would be complete in a year. Industrial development can be correctly organised and regulated only if full data are available and for this purpose a comprehensive economic survey of Hyderabad in respect of small scale and cottage industries should be organised and the newly appointed Economic Adviser, it is believed, would conduct the necessary surveys and enquiries. In the matter of large scale industries the State has definite scope in the manufacture of ceramics, vegetable oils, rayon, electrical goods, plastics, agricultural implements and chemical fertilisers. Facilities for industrial research are assured as a result of the establishment of a Central Laboratory for Industrial and Scientific Research. The acquisition by Government of the assets of the Hyderabad (Deccan) Company assures adequate supplies of coal necessary for the proposed industrial drive. A memorandum on the industrial and agricultural development of the Godavari Valley details the potentialities and the Government are considering the recommendations. A fifteen year plan for medical relief and prevention of diseases is in preparation and the need to train Hakims and Vaids in a systematic manner is realised. Hyderabad has a 14-year plan for bringing the education in the state upto the standard laid down in the Sargent Scheme. Investigations are also being pursued for organising agricultural, commercial, industrial and savings banks. Since lack of personnel is the possible bottleneck in the programme steps are taken to establish training colleges and to increase the output of the Engineering and Medical Colleges. If Hyderabad should succeed in speeding up her production and raise the economic conditions in the State she would undoubtedly contribute a good deal towards the commercial progress of neighbouring states and provinces.

TRAVANCORE

More than two years ago the Government of Travancore had taken steps to evolve a suitable post-war development policy for the State and started a special fund with Rs. 50 lakhs when very few of the Provinces and States made a definite beginning in planning for peace. The recent critical years have revealed the serious deficiencies in the Travancore economy. The contribution of the people of Travancore to the war effort is considerable, and on the food front the people suffered great hardships. Experience during the past two critical years has emphasised the need for a correct plan and the Dewan, Sir C. P. Ramaswami Iyer has recently outlined the objectives of Travancore's post-war plan. Comprehensive and many-sided programmes are drawn up for the fullest utilisation of the natural resources of the State. The basic schemes of the Plan include (1) expansion of education including compulsory primary education, (2) fuller exploitation of the hydro-electric resources of the State, (3) manufacture of fertilisers and heavy chemicals, (4) promotion and enlargement of industries connected with aluminium, rubber, glass, ceramics, and cement, (5) utilisation of the soft wood resources of the State forests for the manufacture of rayon, (6) the exploitation and utilisation of the rare mineral sands in Travancore, such as ilmenite, monazite and zircon, (7) inauguration of machine tool manufacture, (8) coordination of road transport (which is now State-controlled), with canal and sea traffic, (9) fisheries development, (10) public health programmes, and (11) protection and development of cottage industries. Emphasis is laid on re-generation of fuel to meet these growing demands of the State, and since coal and petrol are costly and not easily available, the charcoal resources would be fully exploited to meet the requirements of Travancore industries.

In this connection mention must be made of the Travancore Plan for hydro-electric power and fertilisers and the State's shipping policy. The Travancore Fertilisers and Chemicals Ltd., would in about 18 months, be in operation with an annual production capacity of 54,000 tons of ammonium sulphate. The Directors are now in U. S. A. negotiating for the purchase of the required plants. The factory, when it starts working, would increase the State's production of rice from 750 to 1,800 lbs an acre and result in raising the total output of Travancore to 1,215 million lbs of rice. As regards power, the achievements of the Travancore Government can well be seen in the expansion of the Pallivasal Scheme, its linking with the Papanasam Scheme and the joint investigations with the Government of Madras for utilising the waters of Periyar and the water falls in the Cardamon Hills. Travancore had a glorious past regarding maritime activities and the formation of the Travancore Steam Navigation Company, in which 51 percent of the shares are held by the Government of Travancore and 49 percent by the Scindia Steam Navigation Company) is a step in the right direction to encourage shipping activity.

With regard to financing the Plan the Dewan stated that steps have been taken to build up a post-war fund of Rs. 10 crores. Owing to increases in revenues from excise, customs, abkhari and forests, it has been possible for the Government to set apart Rs. 1½ crores this year. Together with the receipts of the recent Travancore Government Loan the post-war fund would amount to Rs. 6 crores. Rs. 2 crores more would be added in the coming two years. The Government propose to add Rs. 2 crores for this Rs. 8 crores and utilise the amount for post-war development. Preliminary investigations, surveys, booking for machinery etc., have already been started.

BHOPAL

Mr. Mohsin Ali, Development Minister, Government of Bhopal, acting under the aegis of the Bhopal Postwar Reconstruction Board (appointed in August 1943 under the Chairmanship of Sir Joseph Bhore) has prepared a five-year development plan. Apart from the usual provisions for agriculture, small-scale industries, organisation of survey of State resources, etc., the characteristic features of the plan are the town-planning scheme, civil aviation scheme and the colonisation scheme for the demobilised soldiers. The cities of Bhopal and Sehore would be well modelled and slum clearance work undertaken by the town planning office established under the charge of an expert architect. 75,000 acres would be set apart for the colonisation of colonies for demobilised soldiers. Of these 40,000 acres would be a compact block while 35,000 acres would comprise of scattered acres ranging 400 to 1000 acres. Since Bhopal is expected to be an important centre of air lines, the State proposes to develop an aerodrome, start a school of aviation to train the technical staff and contemplates the conversion of the Bhopal lake into a seaplane base. A jointstock bank has been created to

finance industries and agriculture and schemes of power development have also been drawn up.

BIKANER

The Maharaja announced in his message to his people on the 27th of April 1943 that comprehensive proposals would be formulated for evolving a postwar development plan to be carried out within a specific period. This year the broad outlines of the development programme are made known to the public. A five-year plan involving an expenditure of Rs. 2 crores is outlined and the Prime Minister, Sardar K. M. Panikar, has stated that a Development Department would be created to carry out the schemes proposed. Prosperity in Bikaner depends upon greater attention to the breeding of cows and sheep, to the rearing of wool and to the Bhakra Dam Project which promises to increase the agricultural productivity of the soil. Experiments in dry farming, subsoil irrigation and manures have already yielded promising results. Postwar irrigation policy of Bikaner places due emphasis on the adoption of tube-well system and a scheme of afforestation and planting of trees is also under way to benefit agriculturists. As regards industries, the Government of Bikaner has proposals for geological and mineral surveys under consideration. Several concessions have been annouced to encourage indigenous enterprise and a joint stock bank has been started for financing industrial development. A glass factory would soon be in operation. The postwar plan for Bikaner covers a town planning scheme intended to relieve the congestion in the capital and to attract people to places under sanitary conditions.

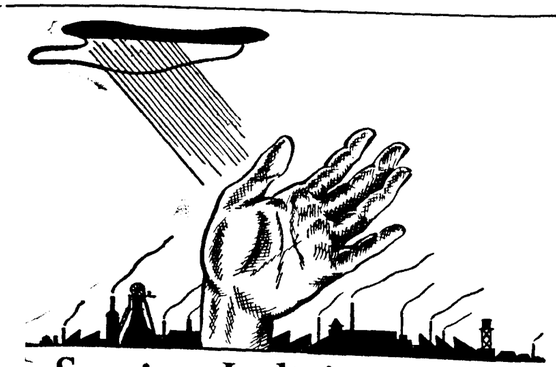
GWALIOR

The postwar plan for Gwalior reveals how keen are some of the States in the reorientation of the economic and cultural life of their peoples. Some of the proposals approved by the State go to show that the Indian States are not far behind the Provinces in their aspirations and that if given powers and facilities to plan for prosperity they would not hesitate to approve of the most unconventional approaches if only they lead to speedy improvement of the lot of the underdog. Major Sardar Mahadik, Minister for Industries, Commerce and Communications, Gwalior State, has suggested collectivisation of the agricultural production of the State after consolidation of holdings (a typical holding in Gwalior is not more than 3 to 5 bighas). If consolidation leads to agricultural unemployment, the way-out lies through the organisation of cottage industries through the agency of the village banias who, he suggests, should be made to incorporate themselves into limited companies. The funds of these banias would be pooled together for the purposes of industrial investment aiming at full employment. The Durbar should guarantee a specific interest upon the capital pooled. While Major Mahedik wants the utilisation of mechanical appliances by the bigger landlords and zemindars, he administers a note of warning that the need for agricultural impiements should not lead to heavy imports of foreign goods which are very costly but should aim at absorbing Indian products. A drastic revision of the uneconomic laws of inheritance is also called for. The target aimed at by the Government of Gwalior is an increase of the monthly per capita income of the people from the present Rs. 15 to about Rs. 45. It is estimated that Rs 2 crores would be required for financing the schemes. It is interesting to note that the Major goes so far as to say that uneconomic cattle should be destroyed even if the sentiments of the people disapprove of such a course of action.

Regarding industries, a balanced economy is held as the objective and emphasis is laid on the immediate implementing of a comprehensive scheme of hydro-electric power supply. The establishment of small generating states in all important centres is advocated. Gwalior is rich in oils and oilseeds and, with a ban on exports, it would be possible to organise hydrogeneration of oils, manufacture of fats, paints etc. Since mica is available in the State the Government aims at organising the manufacture of radio condensers, insulated articles etc. Due attention is also paid to carpet industry, tobacco cultivation, improvement of sugar, and the establishment of textile industries etc.

JAIPUR

The Post-war Reconstruction Committee of Jaipur has prepared ambitious schemes for the agricultural and industrial development of the State. Jaipur is extremely backward in industries and her agriculture is precariously dependent on rainfall. In order to increase the agricultural production plans for adequate irrigation and encouragement of dry-farming are outlined. The Government also seeks to initiate crop planning to maximise the yield from the soil and tenancy conditions will be vastly improved so that the rural masses would be induced to take to agricultural occupations with hope and cheer. The Grow-More-Food campaign has already yielded valuable lessons regarding the planning of food crops, commercial crops and fodder crops and the utilisation of better seeds, implements etc. Cooperative marketing would be encouraged and a Marketing Board created for the sale of the State's products. The State's plans also envisage the formation of Consumer's and Housing Societies. Demobilisation of army personnel has received proper attention and at present a census of the State soldiers is being prepared as a preliminary for detailed schemes of employing the demobilised soldier. While everything would be done to speed up the industries listed already, the State policy regarding industrial ventures has been made clear that the State would not itself undertake industrial ventures but would give every assistance to private enterprise. But as regards labour questions the Government of Jaipur would intervene to achieve the greatest possible social harmony and contentment.



Serving India's Industrial needs...

The present war has given an important impetus to industrial expansion in India, but it has brought home to her industrialists the extent to which the national industries depend on materials imported from abroad. While the expansion of such industries has increased the demand for basic materials many fold, the growing restrictions on imports have caused acute shortage of available supply.

The Swaika enterprises manufacture many of the essential basic materials. They are the biggest suppliers of vegetable oils, chemicals and minerals to vital industries throughout India and are pioneers in the manufacture of such basic chemicals as Oleic and Cresylic Acids. They specialize in the manufacture of coal-tar bye products and industrial lubricants.

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PROVINCIAL INDUSTRIES COMMITTEE'S REPORT

C. P. AND BERAR

The Provincial Industries Committee was appointed on the 9th November 1944 and signed its report on the 28th February 1945. The report is unanimous except for a note by Mr. R. N. Jha in which he stresses the necessity of a National Government for carrying out the recommendations of the Committee. As the Committee was asked to make a rapid industrial survey of the Province and submit its recommendations as early as possible it did not undertake a comprehensive enquiry, but contented itself with collecting as much information as it could and informally interviewing a number of persons who would be helpful to the Committee.

The Committee deal with the industrial position of India in the past, the gradual deterioration in this respect and warning given by the Indian Industrial Commission that India should forge ahead if she did not want to be exposed to danger and risk. Nevertheless, the industrial progress of India, the Committee regard, is not as satisfactory as the situation calls for.

Dealing with Electricity and Power which is the basis of all industrial development the Committee have recommended an immediate survey of the hydro-electric possibilities of the Province. Simultaneously, five thermal electric stations are recommended —one in the Nagpur area, another in the Katni area, third in the Chhindwara area, the fourth in Drug-Raipur area and the fifth in the Chanda area. These are to be connected together subsequently so as to form one Provincial grid and linked up with the All-India Grid System. The Committee recommend that electric power stations should be owned and managed by the State. The State should preferably work also the Coal Mines supplying coal to the electric power stations. Electric power should be supplied at rates more to help industrialisation than merely to secure profits.

The Committee deal with Minerals and Mineral Products, and among them Coal, Iron, Steel, Manganese and Bauxite and Aluminium. Rationalisation of the Coal Industry by electrification and by improved methods of working are recommended. Research for better utilisation of the Central Provinces coals is indicated.

Iron and Steel

The Province has some rich stores of iron ore, particularly in the Chanda and Drug districts. With cheap electricity, iron and steel industry is a possibility and Government should take immediate steps to explore the matter further.

Manganese

The Central Provinces have a practical monopoly of Manganese which is a strategic mineral. At the rate of its current exploitation the resources of the Province may not last longer than 20 or 30 years. Most of the ore is exported, and very little used in India. The mining of Manganese is practically the monopoly of a single concern. The Committee recommend that the manganese resources of the Province should be carefully husbanded in the national interest and that its export should be limited. The monopoly should be terminated on payment of compensation and the mines should be worked by the State.

Bauxite

The Central Provinces is very rich in Bauxite and there are good prospects of an aluminium industry in the Katni area.

Cement

There is room for considerable expansion of the Cement Industry and the establishment of two more factories—one at Rajur and the other in the Raipur-Bilaspur area. Cement should be used in preference to asphalt for making roads in the Province.

Glass

Dealing with Ceramics and Glass, the Committee recommend the expansion of the Potteries industry and the starting of factories for the manufacture of Porcelain and Insulators and Refactories and Tiles. Glass factories which already exist, need considerable improvement in their efficiency. The Committee recommend the engagement of an experienced glass worker from abroad to help to improve the industry.

Textile Industry

With regard to the Textile Industry the Committee makes recommendations for the improvement of cotton-growing, the control of the Ginning and Pressing Factories and the expansion of the Textile Industry by the modernisation of the existing mills and the establishment of new mills. The present mill production is about 184 million yards and a further 236 million yards of cloth will be needed. This will require 8,000 looms and about 250 thousand spindles. The textile mills should produce greater varieties of cloth by introducing new types of looms and departments for bleaching, printing, finishing and mercerizing, etc. Sixteen new mills, each having 500 looms and 20,000 spindles, are justified and most of them may be started in places such as Wun, Chanda, Balaghat and at Akola and Malkapur.

Handlooms

The Committee also recommend that Government should ensure that handloom weavers get their supply of yarn.

Agriculture and Animal Products

The Committee deal with the Industries based on Agricultural forest and Animal Products and draw pointed attention to the fact that India is the biggest producer of oilseeds in the world and the Central Provinces is among the biggest oilseed-producing provinces in India and that, therefore, the oil industry should rank high in Industrial Department. The Committee recommend that export of oilseeds should be discouraged and internal consumption maximised.

Cotton-seed should be crushed, instead of being fed to cattle, the oil refined for human consumption and the cake fed to cattle.

The machinery needed for the oil-mill industry should largely be made in India at a central factory on an all-India basis, and an Oil Research Institute should be established in India.

The cess which the Government of India propose to levy on oilseeds crushed in power-driven mills in the country should also be levied on oilseeds exported from the country.

Four factories for the manufacture of Vanaspati or vegetable ghee and byproducts from groundnut and cotton seed are recommended.

Soap

There is considerable scope for medium-sized Soap Factories distributed all over the Province. Mahua oil may be used besides other oils. Glycerine should be recovered from the soap manufacture.

Orange Industry

The Committee recommend a Citrus Research Institute to be established at Nagpur to promote the agricultural and industrial aspects of the Orange Industry. It is necessary to have cold-storage facilities in markets and on railways, and railway platforms protected from the sun. The orange markets should be modernised with facilities for cold-storage. Oranges should be transported by fast trains or by special trains over long distances. Arrangements for packing fruit during transport need improvement.

Forest Industries

Forests form nearly half the Province and are a major asset. Forest policy include the exploration and demonstration of industrial possibilities of forest products and setting up of pilot plants where necessary to demonstrate seasoning and preservation of timber by chemical treatment, manufacture of bobbins, extraction of tannin, etc. Among the important Forest Industries recommended are paper, Russo-oil, Wood Distillation, etc. Paper mills are recommended in Chauda, Betul and Balaghat districts.

Wood Distillation is recommended in the Betul district.

Lac and Shellac

As the Lac Industry is very important, the Committee recommend that an entomologist be appointed under the Forest Department to organise the Lac Industry.

Dairy Industry

In spite of ample forest and grazing lands, the Province is dependent upon cattle imported from other provinces. This should be remedied and the local breed should be improved. The scheme prepared by the Veterinary Department for the reorganisation of the Dairy Industry is commended.

Hides and Skins

This industry is of very great importance to the province. Most of the hides and skins are exported. The greatest need is to educate the Chamars in flaying and curing of raw hides and the marketing of the produce. The Committee recommend the organisation of the industry on co-operative lines, the training of leather workers in modern methods of flaying and curing and the supply of duty-free salt for curing, and the establishment of three up-to-date modern tanneries at Nagpur, Raipur and Jubbulpore.

Three or more bone crushing factories are recommended for the preparation of superphosphates.

The Committee dealing with small-scale and Cottage Industries, recommends that Government should take up the work of organising the industries which in the view of the Committee is capable of absorbing demobilised technicians. Suggestions have been made by the Committee for the establishment of Training Centres at District Headquarters, the establishment of an Industrial Institute and workshops for mechanics and an Industrial Emporium as a part of the scheme for the marketing of products.

Dealing with industrial chemicals, the Committee recommends the establishment of an Ammonium Sulphate Factory in the Katni area; factories for the manufacture of Nitric Acid, Nitrocellulose, Sulphuric Acid and Soda Ash and Caustic Soda, Bleaching Powder and Chlorine; the modernisation of the distilleries in Seoni and Betul preferably worked by the State, and the manufacture of Rectified Spirit and Absolute Alcohol, in the Distilleries.

Regarding Engineering Industries, they recommend the establishment of a Government Workshop and Stores in Nagpur, besides an Industrial Institute for research, three Divisional Government Workshops and the

retention of existing workshops engaged in war works and working them at the same tempo for civilian consumption.

Reorganisation of the industries Department, also recommended The appointment of a Director-General of Industries with three Directors to assist him in respect of administration of technical and commercial departments, the appointment of an Industrial Engineer, a Director of Statistics and an Industrial Chemist, etc. are also favoured.

Dealing with Statistics and Commercial intelligence, the Committee refer to the weakness of statistical study in India generally, and recommend the establishment of a Permanent Census Department for industrial production and vital statistics on the lines of the U. S. Census Bureau, backed up by a corresponding department of the Government of India.

With regard to State Aid to Industries the Committee recommend classification of Industries into four groups: (i) wholly financed and controlled by the State, (ii) those in which the State will have majority of shares, (iii), those in which Government take a minority of shares and representation on the Directorates, and (iv) those in which Government give only technical advice. The Committee recommend that the greatest aid which the State can render to Industry is by financing research liberally. Further, industries should be protected.

The Committee drew pointed attention to the criticism against foreign firms transferring their activities to India and competing with Indian industries on unequal terms, and noted with satisfaction that the Hon'ble Sir Ardeshir Dalal had declared that Government would see that the development of Indian Industries was not hampered by foreign companies in India.

The Committee advocate all-India legislation to standardise weights and measures.

The Committee also recommend the thorough overhaul of the labour code with a view to ensuring that labour throughout the country had a fair deal, and that the efficiency of labour was improved.

Finance

The Committee also recommend that the Central Provinces being a backward area, should receive a larger grant than on a *per capita* basis from the Central Government to make up its leeway.

Economic Civil Service.

The Committee recommend the constitution of an Economic Civil Service of civil servants trained to study and solve industrial and economic questions. The Committee deal with Transport and suggest that the Chanda and Balaghat districts and Chhattisgarh division should receive special attention in the matter of roads.

The Committee recommend the decking of certain important railway bridges in order to take road traffic also.

Rail Transport

The desirability of eventually having one uniform railway gauge for the whole of India is indicated. A more liberal policy with regard to the provision of railway sidings to Industrial Establishments is recommended. The present railway rates policy should be modified with a view to encouraging the industrial development of the province. Tariff protection should not be negatived by internal railway rates policy. Charges on traffic should be based on the total mileage of haulage and not on the basis of each railway system separately.

Water Transport

The possibilities of utilising the Godavari and the Nerbudda and their affluents for inland navigation should be explored.

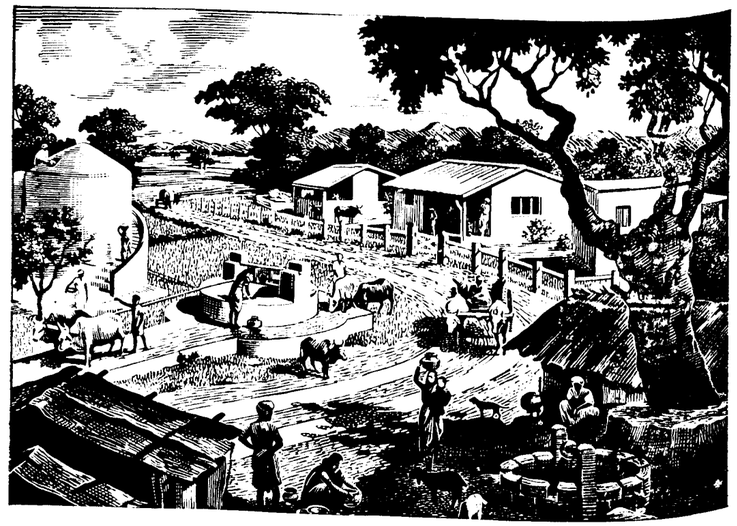
The Committee also refer to the problem of Location of Industry, and bring out the special claims of the Central Provinces for the location of many industries—its central geographical position, its radiating road and railway systems, large labour population, vast resources of Agricultural, Forest and Mineral wealth. The Province, therefore, has special claims for the Textile, Oil, Paper, Tanning and Leather, Pottery and Glass, and Iron and Steel and Aluminium Industries.

Town Planning

The Committee recommend Town Planning for every town with a population of 20,000 and over

Technical Education and Research have also received due attention at the hands of the Committee. They reveal the very unsatisfactory state of general and technical education in the province, and recommend the acceptance of the Sargent Scheme generally. The Committee recommend that in order to accelerate the rate of general education, recourse be had, if necessary, to the conscription of every Matriculate and Graduate for teaching for one or two years.

As regards Technical Education, the Committee recommend the opening of a Junior Technical School in each tahsil, providing training in occupations connected with Engineering, Agriculture, Textiles, Minerals, Glass, Radio Repairing, etc., etc. It also recommends the conversion of all Government High Schools into Technical High Schools and the establishment of Senior Polytechnics at Nagpur, Jubbulpore, Amraoti and Raipur to give training in Mechanical, Electrical, Civil, Chemical Engineering, Chemical Technology, Textile Technology, and Metallurgy. It recommend the award of a large number of scholarships for research in various subjects, tenable both in India and abroad. It also recommend that immediate steps be taken to provide Adult Education particularly of the workers engaged in Industries. Finally, it recommend that selected persons be sent on deputation to England, America and Russia to study their Planning Schemes in Post-war Reconstruction with a view to their adoption to India.



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POST-WAR MINERAL DEVELOPMENT POLICY FOR INDIA

On the eve of feverish activity to evolve postwar development schemes for India as a whole and for the different Provinces and States, there is an urgent necessity to remind the planners that full information about India's raw materials should first be collected before schemes are evolved, clarified and enunciated. The defects of Indian economy are many but all are agreed that lack of balance between agriculture and industry is the most serious and should be rectified without delay. This involves speedy industrialisation reforms in land laws and mechanisation of agriculture. Heavy concentration of industries in some chosen localities have resulted in certain unhealthy features in our national life and this has to be corrected by a healthy policy of decentralisation and correct localisation of industries. To achieve the above ends and to evolve a comprehensive postwar economic plan for India, the prime requisite is to end the mineral, agricultural and industrial resources of this country. Since the mineral, agricultural and industrial resources of India are the basis of numerous raw materials for capital goods, machine tools, machines and a host of consumption goods also, we shall have to evolve a mineral development policy best suited to the post war years and related to the mineral development policy of other countries as well.

At present the position regarding the mineral industry of India is unsatisfactory in several respects. Owing to historical factors the development of mining is heavily concentrated only in a few areas and since mineral is a wasting asset, these sources would by and by become exhausted and thus there is a necessity to go in for smaller and hitherto unexploited deposits. At present the mineral wealth of India is only in a conjectural stage and while a few talk of great potentialities, there are also some experts who doubt if India can ever be self-sufficient in all the chief minerals. It cannot be said that any country is completely self-sufficient in minerals possessing all the varieties in adequate quantities. But there seems to be a general agreement that in the future India promises to be one of the important minerals producing nations of the world. Even leaving out of account the unexplored sources, India's share in the mineral resources of the world is considerable. In respect of gold, magnesite, columbite she has an export surplus. Possibilities are great with regard to barium, aluminium ore, graphite, gypsum, iron ore, talc and tungsten. Further India's mica, ilmenite monoxite and manganese are exported only as raw materials although the country can develop a large-scale micanite industry by utilising mica splitting. There is also good scope for developing tetanium oxide industry by using ilmenite and it should also be easy to manufacture serium and enthorium from monoxite. If the Government make up their minds it should be easy to overcome some of the technical difficulties now confronting the manganese industry in its attempt to manufacture ferro-manganese. Some of the well-established mining industries such as iron ore and coal have not yet fully explored the possibilities of serving Indian industries and they are being exploited in raw stage for the benefit of foreign industries. Further, owing to our inadequate knowledge of the hidden wealth we are now depending upon foreign sources for several vital materials. This excessive dependence upon foreign sources has exposed our economy to severe strain during the war, and, like the U.S.A and the U.K., steps must be taken for the maximum utilisation of the internal sources for the development of national industries. For instance we are at present importing abrasives and numerous finished materials. Experts have recently pointed out that India can hope to manufacture abrasives such as silican carbide and fused alumina. We can also hope to manufacture finished materials like silica, garnets, corundum, lime, magnesia etc. The recent years have also revealed that India has large deposits of bauxite ore and she can easily manufacture bichromite, titanium oxide, vanadium oxide etc. The manufacture of dry batteries, ferro-manganese and manganese steel and other alloys can be organised as the manganese ore in India is reported to be of high quality. There is also great scope for the development of paints since raw materials are available in plenty and are scattered throughout the length and breadth of this country. The glass industry, for instance, is heavily tied down because of its excessive dependence on foreign sources for raw materials. It has recently been pointed out that some of the raw materials can easily be developed within the borders of India and if this is achieved, a powerful fillip would be given to the glass industry during the postwar years.

The need to evolve a correct mineral development policy for India also arises out of the suspicion in commercial quarters that Clause IV of the Atlantic Charter may not be applied in the real interest of India. This Clause, it is well-known, stipulates the ready availability of minerals and raw materials to all countries in the world. The authorities in India have a responsibility to see that, when they co-ordinate their mineral policy with similar policies of the Empire and other countries, the abiding interests of this country's industrial development are not sacrificed in the name of international collaboration. Recently, the Empire Council of the Mining and Metallurgical Institute, London, asked the Mining Geological Metallurgical Institute of India to prepare a review of the mineral resources and industries of India. The Institute has accordingly made a thorough survey and their findings have been published. The review has been conducted with a two-fold object, namely, (1) to place before the Empire Council the official views of the Institute of the mineral resources of India so that the Council can take them into account when they evolve plans for the Empire and (2) to place before the Government of India the views of the Institute on certain vital matters connected with the mineral resources and industries. This review gives the details of the available reserves, production imports and exports and internal consumption of all the minerals and also states the lines along which future expansion should take place. Attention has been drawn to the rapidly expanding markets for abrasives and barium chemicals. It is believed that India is likely to become one of the world's most important sources of bauxite and that, since metallurgical coking coals are likely to be exhausted in the course of about 40 years, the steel trade in India therefore will have to depend either on discovering some new means of obtaining metallurgical coke from the present non-coking and coking but non-metallurgical coals or of smelting iron by some other method than the present blast furnaces. The risks involved in proper mining also have been pointed out while encouraging prospects are laid before the ceramic industries. With regard to cement the review points out that while the market would increase rapidly, the industry also can meet the demand without serious difficulties.

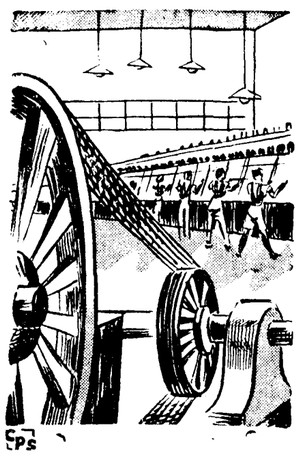
Vast tracts in Bihar, Orissa, Central India, Assam, Eastern Ghats and Eastern States Agencies have not yet been surveyed by the Geological Survey owing to insufficient funds and staff. As Sir Cyril Fox admitted recently, not more than 500,000 square miles have been covered by the Survey since 1846 while over a million square miles have yet to be taken up. Arrangements should therefore be made to enable the Geological Survey to shed its snail's pace and cover the entire area of the land in the course of a few years. It should also be made clear that the new mineral resources, when found out, should be exploited by Indians only. The Industrial Commission, presided over by Sir Thomas Holland, reported during the last war that the mineral resources should be developed only by Indian nationals and that if they were not able to develop them, the best course would be to allow the deposits undeveloped but the foreign concerns should not be let in. Foreign vested interests who make much fuss about the principle of equal access to raw materials in postwar world should be reminded that equal access to capital has not yet been conceded to the undeveloped countries by the more fortunate ones. The Government of India should appreciate that if Indian resources are leased out to foreigners the very direction of postwar economic progress would be vitally prejudiced.

The Government of India have done well in stating that if a planned and well-informed mineral policy is to be developed for India as a whole, the control of all minerals of strategical and industrial importance should be made Central and the necessary legislative measures shall have to be carried through for a centralised and well co-ordinated control of the development as well as ordered utilisation of mineral resources in this country. It is also gratifying to note that the Central Government have come forward with the assurance that they will give all possible assistance to provincial governments and States by the provision of expert advice and technical help whenever needed. It is also promised that the whole question of rationalisation of the coal industry will be taken up at an early date so that all grades of coal can be well graded and conserved. The Government would also take up researches for the better utilisation of coal, development of economic methods of producing soft coke and the recovery of the many by-products of this manufacture. The Board of Scientific Industrial Research would direct research schemes connected with coal and its byproducts. It is also laid down that the utilisation of the mineral resources for the production of finished products should be made in so far as such utilisation is consistent with efficient manufacture and marketing. A good beginning has been made already in the case of mica and the Committee of Enquiry which has been set up recently is expected to examine the prevailing conditions of mica trade and industry and suggest suitable steps for the conservation of mica resources and develop them in the most economical manner. It is also promised that the technical personnel of the Geographical Survey would be vastly expanded so that the Provinces and States can keep a regular flow of trained personnel for purposes of organising mining in different localities.



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PROVINCIAL FINANCES 1944-45

Generally speaking, the effect of the war on provincial finance is to produce conditions of affluence, leading in most cases to the building up of considerable funds for postwar reconstruction. The increase in the income-tax and, as a consequence, in the divisible pool of it are the only means by which the provincial budgets derive a direct benefit from conditions of war economy. One could not count on the various items of provincial revenue responding in any considerable measure to the stimulus of war conditions. Likewise, on the expenditure side the war was not expected to entail any heavy expenditure for the Provinces. If the present war is different from the last in that it throws on Provincial Governments the responsibility for civil defence, it could be assumed that these additional burdens would be met by proper contributions from the Centre. This, broadly speaking, forms the picture of provincial finances as one could conjure it up on the outbreak of the war or even a year or two thereafter. The fifth war budget of the various Provinces in India shows, however, that provincial finances are affected as radically as the Central, though in the case of the Provinces the net effect is to leave in the hands of the local Governments nest eggs which they expect to come handy in the conceivably different conditions of the postwar period. In the famished conditions, which had been the lot of provincial finances till two or three years ago, the appearance of surplus by itself raises important problems as to the best way of utilising them. And these are complicated by the paramount need of the present to avoid expenditure that is calculated to have an inflationary effect on the economic life of the country. To the extent that recent increases in the rates of provincial taxation have gone to increase the total revenue, it is not ludicrous to suggest that the repeal of some of the new impositions should also be carefully considered.

But it is well to note at the outset that revenue in the case of the Provinces has shown remarkable expansion, though the increase varies from over 80 per cent in the case of Bombay, Sind and Madras to as low as 37 per cent in the case of Orissa. Though the effect of war economy on the revenues of the Provinces is by no means uniform, there is no doubt that the budgets as a whole have risen to a distinctly higher level of revenue and expenditure. From about Rs. 90.83 crores at which it stood in 1939-40, the total revenue of the Provinces in India has gone up in the budget for 1944-45 to as high as Rs. 159.92 crores. On the side of expenditure the rise is from Rs. 89.22 crores to Rs. 149.65 crores.

It would appear that Bombay, as we have mentioned already, has had the largest percentage increase in revenue and Orissa the least, as compared with the figures for 1939-40. The increase in expenditure has also an unequal incidence. Bengal heads the list in expenditure and forms a sad contrast to the general picture of affluence in the Provinces. Other Provinces have either a large unallocated Revenue Reserve fund or have earmarked considerable amounts for particular purposes. The U. P. has set apart in addition to a Revenue Reserve Fund of about Rs. 2 crores, a sum of Rs. 1.25 crores for a Supply Schemes Stabilisation Fund, Rs. 50 lakhs in its Road Fund and Rs. 15 lakhs as a Hospital Fund. Madras makes a revenue reserve of over Rs. 5½ crores, though at the expense of the development departments which, as it seems to us, have been most unreasonably starved. There is no prospect of these Governments undertaking, either under pressure of public opinion, or of their own accord, to spend these amounts before the end of the war, if only because the avoidance of inflationary pressure is deemed to be the paramount consideration which overrides all others.

Though few would favour a heedless accentuation of inflationary effects, the wisdom of postponing all measures for the postwar period is not quite obvious. Remission of taxation cannot find favour with the authorities in the Provinces, since they may well take their clue from the Centre and think that it is for them to help the anti-inflationary fight by adding to taxes, if possible, and not to leave more money in the pockets of the taxpayer. But there is no case for such a small appropriation for development as has been in Madras, a matter of 30 and odd lakhs in a budget which has doubled itself in the last few years. It is well to remember that the Adviser regimes, whose function legitimately and avowedly is to act as a stop gap till the restoration of representative government, have both retained new taxes and recovered the revenues which the Congress Governments agreed to forego. And what is more, the rates of taxation have been increased during the last few years. Such actions are not in accord with a do-nothing financial policy. For our part, we have expressed the view that, notwithstanding the little cloud in the North-East frontier, it would be well for our Government to make a small start in postwar reconstruction, at least so far as the development departments are concerned.

Doubtless, it is necessary from the point of view of financial prudence to look into the nature of revenue expansion before making any additions to normal recurring expenditure. Though we are unable to trace in detail the sources of increased revenue in the case of every province, there is reason to think that the increase is well distributed over the various items of Provincial revenue, so that we have to conclude that the expansion is the result of the general conditions of war economy. Forests and stamps have been in many cases the best contributories to revenue; and these sources will be comparatively dry when peace comes. But it shou'd not be forgotten that in the postwar period, expenditure on nation-building will in any case have but a loose relation to public revenue, so that the source of increased revenue is not a consideration of any importance in deciding whether the outlay on nation building should or should not be increased. Anti-inflationary considerations will, however, remain; but such increased outlay as the Provinces may be able to make will be but a drop in the ocean of inflationary finance today.

BENGAL BUDGET

Bengal had to pass through unprecedented crisis resulting from extreme shortage of food, widely prevalent disease and the unexpected floods and cyclones. The famine and its aftermath have uprooted Bengal's peasantry and there is not a single walk of provincial life which is not severely affected by the extraordinary conditions prevailing in the past two years. The Budget presented to the Bengal Assembly on February 18, bears all the marks of the extraordinary stress through which this Province had passed. The following table reveals the budget position of Bengal in general outlines :

BENGAL BUDGET 1944-45.

(Figures are in thousands).

	1942-43 Actuals	1943-44 Budget	1943-44 Revised	1944-45 Budget
	Rs.	Rs.	Rs.	Rs.
Receipts—				
Opening balance ..	1,32,40	2 60.46	2,60,46	2,47,87
Revenue receipts ..	16,46,42	18,43,49	21,34,09	21,97,44
Receipts from Debt—				
Heads	31,03,77	44,50,12	1,15,49,94	85,35,17
Total	48.82,59	65,54,47	1,39 44,49	1,09,80,48
Revenue Expenditure ..	16,79,16	25,80,57	32,53,60	30,43,78
Capital Expenditure ..	—56	50,29	29 63,49	—17,20,34
Expenditure on Debt—				
Heads	29,43,51	36,63,40	74,79,53	1,07,21,72
Closing balance ..	2,60,46	2,60,21	2,47,87	—10,64,68
Total	48,82,59	65 54,47	1.39,44,49	1,09,80,48
Surplus+ Deficit—				
(a) On Revenue Account	—32,76	—7,36.68	—11,19,51	—8,46,34
(b) Outside Revenue Account ..	+1,60,82	+7,36,43	+11,06,92	—4.66,21
(c) Net, excluding opening balance ..	+1,28.03	—25	—12,59	—13,12 55

The Budget figures are naturally staggering both on the revenue and expenditure side. During the two years 1943-44 and 1944-45 the Province had to spend over Rs. 63 crores which is about five times the prewar budget of Bengal. Expenditure for the current year has been put at Rs. 32.54 crores and that for the next year at Rs. 30.43 crores. Approximately, half this expenditure is due to the tremendous increase particularly under three heads namely. (1) "Extraordinary Charges in India" (2) "Famine" (3) "Agriculture". The first head was created in 1939-40 to record extraordinary expenditure like expenditure on Civil Defence. But now the cost of the Civil Supply Department is also included under this head. The Civil Supply Department accounted only for Rs. 4 lakhs in 1942-43 but according to the revised estimates it will account only for Rs. 1 crore in the current year and Rs. 148 lakhs for the next year. These figures exclude loss of trading operations estimated at Rs. 3½ crores and Rs. 5 crores respectively in the above-mentioned two years. Under the second head, "Famine," total expenditure of Rs. 565 lakhs has been provided for in the current year's budget and Rs. 261 lakhs in next year's budget. Out of this Rs. 565 lakhs. Rs. 350 lakhs is allotted for gratuitous relief and Rs. 125 lakhs for test works, while special medical relief in rural areas gets Rs. 50 lakhs. Out of the Rs. 261 lakhs provided for next year. Rs. 1 crore has been set apart for gratuitous relief and Rs. 3 lakhs for test works. This reduction is explained by the belief that conditions would improve during the course of the year. Taking the two years together an amount of Rs. 896 lakhs was sanctioned for famine relief in Bengal. The Grow-More-Food campaign gets Rs.135 lakhs for 1943-44 and Rs. 50 lakhs for 1944-45. The Campaign is conducted with a view to maximising immediate yields for tiding over the critical situation created by the food shortage. Since the devastation created by the recent floods the Damodar Embankment Scheme has received due attention and Rs 109 lakhs has been sanctioned for the repair of the breaches caused last year. The Central Government. it is reported. has agreed to make an interest-free advance to Bengal for the purpose. The influence of inflation is clearly discernible in the increase of expenditure under "Jails." The revised estimate for the current year under "Jails" is Rs 136 lakhs as compared to Rs. 53 lakhs only in 1942-43. Public Health accounts for Rs. 82 lakhs in the Revised Estimate for the current year as against only Rs. 36 lakhs in 1942-43. This increase is mostly due to anti-epidemic measures, free distribution of quinine (Rs. 12½ lakhs) control of cholera and smallpox and repair and resinking of tube wells which have gone out of order in several areas (13½ lakhs). For the coming year a sum of Rs 61 lakhs has been provided for. Thus for the two years Public Health alone accounts for an expenditure of nearly Rs. 75 lakhs over the normal figure of Rs. 36 lakhs. In order to speed up the production of sugar the Government have fixed a minimum price of Re 1 per maund for the purchase of sugarcane by the mills and have also come forward to compensate the mills at the rate of 4 annas a maund.

On the Revenue side, the estimates for 1943-44 came to Rs 21.34 crores and those for 1944-45 stood at Rs 27.97 crores. The heads which accounted for the increase are "Excise" "Other taxation and duties" and "Stamps." The yield from agricultural income tax and the additional revenue from the proposed enhancement of the Sales Tax have been excluded in the estimates for 1944-45. Bengal's debt at the close of the year is estimated at Rs 21½ crores. Thus a heavy weight of Rs 9 crores of uncovered indebtedness have to be borne by the Government of Bengal. The situation is more glaring if we take into account the fact that the closing balance for 1944-45 is estimated at Rs 10½ crores. new taxation will have to be resorted to for the rest and the situation is clear that Bengal looks to the Central Government for immediate financial help so that she can discharge her heavy responsibility of putting Bengal's economy in order and pulling the suffering masses out of the aftermath of the crisis.

BOMBAY BUDGET

Provincial finances reveal adherence to the principle of making hay while the sun shines. Thanks to boom conditions Bombay enjoyed striking financial prosperity during the current year and the Budget for 1944-45 has been framed with a view to swelling the funds for future prosperity without unduly starving the necessities of to-day. The budget figures for 1944-45 are as follows:—

	(In lakhs)		
	1942-43 Actuals	1943-44 Revised	1944-45 Budget
	Rs.	Rs.	Rs.
Receipts ..	1,970	2,388	2,489
Expenses ..	1,779	2 224	2,419
Surplus ..	191	163	0.36

The surplus figure of Rs. 0.86 lakhs does not include the huge transfer of Rs. 4½ crores to the Post-war Development Fund which will amount to Rs. 7 crores at the end of the year 1944-45. The success of the financial results of the current year is well indicated in the increase in free balance from Rs. 488 lakhs to Rs. 631 lakhs and the growth of the Special Development Fund from Rs. 215 lakhs at the beginning of the current year to Rs. 288 lakhs at the close. The Post-war Reconstruction Fund has during the year increased from Rs. 139 lakhs to Rs. 250 lakhs. The budget estimates for 1943-44 had provided for a surplus of only Rs. 0.46 lakhs but the revised estimates framed on the actuals of the first 8 months of the year put it at Rs 163 lakhs. This improvement is attributed to the tax measures like the doubling of the Betting Tax, enhancement of the Entertainment Duties, surcharge of 50 per cent on most of the non-judicial stamp duties and of 25 per cent on judicial stamps and fees. The yield from income-tax showed an increase of Rs. 148 lakhs over the budget estimates for 1943-44, and the provincial excise has gone up by Rs. 161 lakhs. Forest revenue has increased by Rs. 84 lakhs owing to increased orders from the Supply Department. On the side of expenditure famine measures undertaken in Bijapur accounted for nearly Rs. 1 crore. Coming to the budget figures for the year ahead, it is anticipated that receipts under Taxes on Income would go up by Rs. 8½ lakhs. No fresh taxes are proposed and the rates of levy of the Urban Immovable Property Tax are reduced from 7 2/3 per cent to 7 per cent and from 3 5/6 per cent to 3½ per cent, involving a loss of Rs. 8 lakhs.

The most arresting feature of the Budget proposals is the large-scale provision for the development of Bombay agriculture. While the Post-war Development Fund and other funds would be drawn upon for the progress of agriculture in post-war years, the urgent call for greater production has to be met here and now. The bunding programme in certain tracts of the Bijapur district will be extended to further areas in 1944-45 covering five lakhs acres in all. This programme promises to offer employment to the peoples of the famine-stricken areas and make any recurrence of famine unlikely. Rs. 70 lakhs has been allotted for the proposed extension. Further, a sum of Rs. 22 lakhs has been provided for the scheme of irrigation as part of the Grow-More-drive. The scheme for better distribution of manures at an initial cost of Rs. 30 lakhs is in operation and is expected to result in an increase of ten lakhs maunds of foodgrains. 50,000 tons of groundnut cake at an initial cost of Rs. 48 lakhs (of which Rs. 14 lakhs will be treated as subsidy) will be distributed to increase the outturn of rice by six lakhs maunds and of wheat by 1½ lakhs maunds. Provision has also been made for opening 18 centres for research work on the technique and economics of crop production and for taking over of the Sugar Research Station, Padegeon, from the I.C.A.R. for converting it into an Agricultural Research Station. Rural broadcasting has received some attention and 800 radio sets have been obtained on lease-lend basis to be distributed to certain chosen villages. That the nation-building departments have received a substantial amount of help is indicated by the fact that while the expenditure on security services (police and jails) have increased from Rs. 299 lakhs in 1943-44 (revised) to Rs. 280 lakhs, the expenditure on education, medical and public health, minor irrigation works, agriculture, veterinary, etc., have increased from Rs. 439 lakhs to Rs. 516 lakhs. Industries get Rs. 19 lakhs for the year 1944-45. Provision for roads and amenities for industrial labour are disappointing. Yet, on the whole, Bombay has done well in conserving the revenues of the present for ensuring future progress.

MADRAS BUDGET

The Madras Government's budget estimates for 1944-45 are based on the now-prevalent dictum of maximum revenues and minimum expenditure. It is also assumed that the level of prices would not increase during the year, that war situation would continue to improve and that no serious calamity would overtake the Province during the year. The estimates place the Revenues at the record figure of Rs. 30.2 crores, Expenditure at Rs. 23.75 crores and the Surplus at Rs. 6.44 crores. Since the provision for new schemes, transfer to Revenue Reserve Fund, and the deposit towards postwar reconstruction schemes take away Rs. 30.19 crores, the actual surplus works out to Rs. 77,000. Land revenue and Irrigation yielded Rs. 813 lakhs. Part of the increase under these heads is attributed to the withdrawal of land revenue concessions so severely criticised by the public. Excise yielded Rs. 737.55 lakhs. The increase under this head is mostly due to the suspension of Prohibition—another instance of Government's callous disregard of public opinion. Since the General Sales Tax was increased during the middle of the financial year, the revenue is expected to come up to Rs. 364 lakhs. The income-tax assignment from the Centre is estimated at Rs. 270 lakhs as against the revised estimate of Rs. 210 lakhs for 1943-44. Since the Central Government have notified a further increase of Rs. 85.35 lakhs, this head would swell up still further. There is also proposal to repeal the Madras Tobacco (Taxation and Licensing) Act, as the Central Government had imposed an excise duty on tobacco. The Government have made it clear that there will not be any reduction in taxation as long as the war lasts, and the reason for such a policy has to be found in the anxiety of the Government to "have considerable funds in hand for undertaking large development schemes after the war." Under the Motor Vehicles Act, the Government have to pay local bodies compensation for loss of revenues from tolls and the Government had not paid the amounts due. Provision has been made in the Budget to pay the arrears as also the amount which is due in the coming year in full. It is stated that the Government have taken this decision in view of the unsatisfactory financial position of local bodies. A sum of Rs. 89.64 lakhs only out of Rs. 30 crores is allotted for new schemes and even out of this small amount Rs. 56.93 crores would be paid as additional compensation for local bodies for loss of the toll income and the loss of professional tax revenue by the Limitation Act.

New schemes of the Educational Department such as grants to the Madras University for new technological courses; the opening of Honours courses in Islamic History and culture and Natural Science Group in the Government Mohammedan College, as also the revival of stipends for men undergoing secondary teachers' training and grants for the management of elementary schools and panchayats for the payment of dearness allowance per month to teachers at Rs. 4 instead of Rs. 3, account for Rs. 12 lakhs. Supplementary allocations for the Medical Department, and the Agricultural Department are Rs. 83,000 and Rs. 2.92 lakhs respectively. A sum of Rs. 19,000 is allotted for the appointment of additional staff for co-operative training Institutes. Allocation for the purchase and sale of manures, seeds and implements comes to Rs. 100 lakhs while Rs. 10 lakhs have been set apart for rural water supply. The Revised Estimates sanction only Rs. 14 lakhs for famine relief though during 1943-44 no less than Rs. 227 lakhs have been spent under this head. Owing to the cessation of A.R.P. measures in several mofussil towns, the expenditure under Civil Defence records a marked decrease. A provision of Rs. 75.07 lakhs has been made for capital expenditure (which includes the scheme for the supply of electric power to the west coast and for building a modern quinine factory). For the investigation of irrigation problems, the establishment of a Research Station is also proposed.

It is stated that the Government of Madras would deposit Rs. 5½ crores for a nine-point postwar reconstruction programme, namely, improvement of roads and communications; building schemes and water supply and drainage schemes held up owing to the war; land colonisation schemes for demobilised soldiers and others; expansion of the activities of agriculture, veterinary, co-operative and industries departments; development of medical and public health services; improving and increasing the educational facilities; irrigation and electricity capital expenditure; exploitation of minerals and other schemes that will provide employment for ex-soldiers and skilled labour released after the war. It is stated that the Government would select as far as possible long-range schemes which cannot be financed from current revenues.

The Government will not be forced to raise open market loans during 1944-45 as they can manage to meet their expenditure if, at any time of the year, it is over receipts, by issuing as usual Treasury Bills and taking ways and means advances from the Reserve Bank. It is also anticipated that all these temporary borrowings will be discharged before the close of the year.

THE U. P. BUDGET

The U. P. Budget estimates for 1944-45 reveal the general trend of financial prosperity experienced almost in all provinces excepting the N.-W.F. and Bengal. Revenues have swelled up falsifying previous expectations and the expenditures also have followed the upward move. The essentially strong financial position of the province is well indicated in the figures for the surplus which increased from Rs. 88 lakhs in 1940-41 to Rs. 164 lakhs in 1942-43 and stood at Rs. 223 lakhs for 1943-44. The coming year is expected to yield a surplus of Rs. 438 lakhs. The reduction in civil defence is not peculiar to the U. P. as the general improvement in war situation has resulted in lower expenditure on A.R.P. and other measures connected with civil defence in most of the provinces. The commercial operations of the U. P. Government have widened as shown in the increase of capital expenditure from Rs. 50 lakhs in the original budget to Rs. 857 lakhs in the revised. The total outlay in the current year on the commercial operations covering standard cloth, purchase of foodgrains and the export of gur, oil and oilseeds to other provinces amounted to Rs. 37 crores of which Rs. 29 crores is expected to be recovered within the year while the carry-over of Rs. 8 crores will be left. Up to the end of February the U. P. has exported grains to the value of Rs. 5 crores to other provinces of which more than half went to relieve starving Bengal. While operations in foodgrains and standard cloth resulted in loss to the Government, those connected with gur, oil and oilseeds have yielded good profit. The future, as the Budget Note points out, cannot be foreseen at present, and the U. P. Government is preparing for substantial losses by strengthening the Supply Schemes Stabilisation Fund. The expected surplus of Rs. 438 lakhs for the year ahead is utilised for strengthening the different funds while a sum of Rs. 35 lakhs has been granted to local boards for road maintenance. The Revenue Reserve Fund which stood at Rs. 358 lakhs in 1943-44 has come up to Rs. 549 lakhs recording an increase of 50 per cent in a year. Correspondingly the Supply Schemes Stabilisation Fund mounted up from Rs. 100 lakhs to Rs. 225 lakhs and there has been an increase of 16 per cent under the Road Fund and 40 per cent under the Hospital Fund. By way of anti-inflationary measures the excise duties are to be increased. The price of opium will be increased from Rs. 140 to Rs. 180 per seer, that of ganja from Rs. 120 to Rs. 160 and the duties on country liquor and spiced liquor will be pushed up by 15 per cent and 10 per cent respectively. On the side of expenditure the creation of a Provincial Fire Service (with brigades in Agra, Allahabad, Benares, Cawnpore and Lucknow), the organisation of a Provincial Nursing Service, the provincialisation of certain sadar hospitals and the establishment of a new Department of Animal Husbandry deserves notice. The debt position does not record any appreciable change and though the huge outlay of Rs. 10 crores on Supply Schemes present difficulties in the Ways and Means position the enormous reserve funds built up in recent years go to show that if wartime responsibilities weigh heavily on the U. P. Government, the financial resources have also grown to satisfactory levels.

PUNJAB BUDGET

That the war has not been an unmixed evil is clearly brought out by the trend of provincial finances during the past three years. The upward swing of prices and the comparative economic prosperity of certain sections of the agricultural population who form the main block of taxpayers feeding the revenues of the provincial governments, have added strength to the provincial finances. The sources of revenue have increased, deficits could be averted and precautionary funds for the possible post-war depression could be built up. The Budget estimates for the Punjab for the year 1944-45 reveals that the Province is forging ahead under the financial stewardship of Sir Manohar Lal. the Finance Member for the Punjab. The growing strength of Punjab's finances is shown in the following table:

	(In lakhs)			
	1942-43 Actual	1943-44 Budget	1943-44 Revised	1944-45 Budget
	Rs.	Rs.	Rs.	Rs.
Revenue ..	16,45	15,19	20,24	19,64
Expenditure	15,11	14,69	20.04	15,78
Surplus ..	1,34	50	2,79	3,86

The anticipated surplus of Rs. 3,86 lakhs is greatly ahead of the revised surplus of Rs. 2,79 lakhs for 1943-44. Unprecedented prosperity in the Punjab agriculture partly explains the difference between the budgetted surplus of Rs. 50 lakhs and the revised surplus of Rs. 2,79 lakhs for 1943-44. Owing to higher prices land revenue has swelled up to unexpected levels and the yield from registration fees, forest, etc., had also come up very well. Sale of undeveloped lands and town sites in the Colonies was effected at favourable prices and the temporary cultivation of lease lands had yielded good revenue. Receipts from the sale of proprietory rights to tenants have also yielded satisfactory results. The productivity of the General Sales tax and the Urban Immovable property tax has been excellent. The Haveli Project continued to add its quota to the provincial exchequer while the share of the Punjab from the income-tax pool has grown to an unexpected degree. Forces governing agricultural production have proved excellent and this combination of favourable factors has falsified the doubts and fears reflected in the Budget estimates of 1943-44. But conditions may not remain as rosy as they were before. Unstable conditions and uncertain factors still govern the sources of revenue and the avenues of expenditure. Hence the estimates for 1944-45 are rightly based on a modest basis.

C. P. AND BERAR BUDGET

The Budget estimates for C. P. & Berar for 1944-45 reveal one more year of surplus funds. The following table indicates the following position:—

(In lakhs of Rupees)			
	1942-43	1943-44	1944-45
Revenue ..	6,69	8,27	8,08
Expenditure ..	6,47	8,23	8,05
Surplus ..	22	4	3

As in most other Provinces, the revenues as well as the expenses have increased phenomenally and a surplus of Rs. 3 lakhs has been left. While at the beginning of the Provincial Autonomy on April 1, 1937, C. P. & Berar had hardly Rs. 28 lakhs, at the end of 1944 she hopes to enjoy more than ten times the amount namely, Rs. 292 lakhs. A

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sum of Rs. 121 lakhs during 1943-44 and Rs. 141 during 1944-45 will be allotted to the Postwar Reconstruction Fund started in 1942-43. At the end of the coming year this Fund would stand at Rs. 290.33 lakhs. The revised estimates for 1943-44 reveal that there has been an improvement of Rs. 138 lakhs in revenue of which Rs. 64 lakhs are accounted for by the increase under Forests. The receipts from the distributable surplus of income-tax have come up to Rs. 97.5 lakhs as against Rs. 60.5 lakhs estimated in the budget. Consumption of country spirit has yielded an increase of Rs. 25.4 lakhs but the Government have decided to raise the issue prices with effect from March 20, 1944. Land revenue showed an improvement of Rs. 20 lakhs including the contribution of Rs. 14 lakhs from the Centre for payment of subsidy to cultivators. On the side of expenditure there has been an increase of Rs. 80.25 lakhs of which Rs. 38 lakhs are incurred as a result of exploitation of forests. Operations connected with the procurement of foodgrains and standard cloth have expanded during the current year and for the year 1944-45 288,000 tons of rice, 50,000 tons of wheat and 100,000 tons of jowar are expected to be procured for disposal. A sum of Rs. 35 lakhs has been sanctioned for Grow-More-Food drive and it is expected that an additional area of seven lakhs acres would be brought under cultivation.

The estimates of revenue for 1944-45 are framed with due caution necessitated by the uncertainties of the year. It is assumed that taxation measures due to expire during 1944-45 would be renewed from April 1, 1944. The anti-inflationary measures recently adopted would continue and augment the development funds. While increased revenues are expected from Income-tax share, Excise and Stamps, Forest is expected to show a decrease of Rs. 53 lakhs owing to the smaller demand for timber and other forest produce. The budget for 1944-45 provides for new expenditure aggregating only Rs. 11 lakhs of which Rs. 8 lakhs have been allotted to nation-building departments. While revenues have increased from the normal figure of Rs. 5 crores to Rs. 8 crores to-day, the growth of expenditure on development departments from Rs. 97 lakhs in 1938-39 to Rs. 124 lakhs in 1944-45 reveals how the financial administration of the provinces has been unduly conservative. It is no doubt true that provinces today have more money than supplies but one cannot escape the impression that the present has been neglected in the anxiety for preparing for postwar stability. The Government of C. P. & Berar are even today following the policy laid down in 1941 of not undertaking fresh activities unless permanent improvements in revenue are visible. As the Press Communique stated "the present Government has resisted all temptations to embark on big schemes of permanent expenditure". The budget proposals for 1944-45 are quite cautious and devoid of features which would rouse the enthusiasm of the public today.

BIHAR BUDGET

The Budget estimates of the Bihar Government for 1944-45 revealed a total revenue of Rs. 978 lakhs and an expenditure (on Revenue Account) of Rs. 758 lakhs, excluding Rs. 317 lakhs allotted for postwar reconstruction. The expenditure in connection with grain purchase and standard cloth schemes stood at Rs. 181 lakhs on capital account. The net balance for the current year allowing for the credit in the provincial Loan Account is placed at Rs. 5 lakhs. The Estimates reveal that 'Excise' has come to the top as a source of income while Land Revenue which occupied the first place before the war has been pushed down to the fourth place. As a direct result of the abolition of prohibition Excise increased from Rs. 197 lakhs in the Revised Estimate for 1943-44 to Rs. 213 lakhs for 1944-45. Taxes on income recorded a corresponding increase from Rs. 158 lakhs to Rs. 198 lakhs and Stamps from Rs. 149 lakhs to Rs. 169 lakhs. Land Revenue remained at Rs. 139 and Industries actually recorded a decline from Rs. 68 lakhs to Rs. 56 lakhs. On the side of expenditure there has been a great increase under "Police". Including the grant from the Centre, the expenditure under this head in the Revised Estimates and the Budget for the year ahead, comes to Rs. 132 lakhs. The expenditure under Education is kept more or less on the same level as that revealed in the Revised Estimates but provision has been made for the continuation of mass literary work and special grants have been given to the Belgian Mission in Chota Nagpur whose finances were weakened as a result of the German occupation of Belgium. A provision of Rs. 18.000 for Basic primary schools and an allotment of Rs. 11,000 for the Patna College for women are the other notable features under "Education". The Grow-More-Food Campaign received Rs. 262.000 under the Revised Estimates and the allotment for the Budget year is Rs. 586.000. A rebate of 20 per cent to cultivators on the price of improved seeds and manure sold through the Agricultural Department is announced. Half of the cost incurred would be borne by the Central Government. The expenditure of Experimental Farms has shown an increase. For emergency irrigation schemes in the Patna district a provision of Rs. 3¼ lakhs in the Revised and Rs. 22 lakhs in the Budget has been made. The work has already been started and the total cost is estimated at Rs. 37 lakhs. The Postwar Reconstruction Fund has come up to Rs. 317 lakhs. The deficit shown in the Budget is purely a technical one and, in spite of the real surplus, certain measures of taxation are contemplated to strengthen the Postwar funds and help the all-India drive against inflationary tendencies.

ASSAM BUDGET

The 1944-45 Budget Estimates for Assam reveal a revenue of Rs. 452 lakhs, an expenditure of Rs. 462 lakhs and a deficit of Rs. 10 lakhs. It is stated that the current year will close with a revenue surplus of Rs. 7.53,000. On the side of revenue, the notable feature is that the Province's income tax is expected to increase by Rs. 11 lakhs in 1944-45. A provision of Rs. 4.57,719 has been made for the non-excluded areas and a sum of Rs. 25 lakhs has been allotted for postwar reconstruction. The grain storage programme is expected to involve an expenditure of Rs. 388.2 lakhs of which Rs. 349 lakhs would be recovered from the sale proceeds. The expenditure on standard cloth is placed at Rs. 177.5 lakhs and the receipts from this scheme would be about Rs. 150 lakhs only.

SIND BUDGET

Vital changes in the finances of Sind are indicated in the Budget for 1944-45 presented by Sir Ghulam Hussain Hidayatullah. The autonomy of this Province had till now been prejudiced by the heavy Barrage debt and the dependence on subventions from the Centre. The Budget proposals reveal that war-time developments have proved a blessing in disguise. A bright future is indicated for the finances of Sind as the two important handicaps, viz., debt and insecurity of post-war years are successfully tackled in the Budget. The revised estimates of revenue for 1943-44 come to Rs. 865 lakhs and the expenditure during the same period is Rs. 622 lakhs. For 1944-45 the revenues are estimated at Rs. 797.27 lakhs and the expenditure at Rs. 797.04 lakhs, leaving a surplus of Rs. 23,000. The grain export policy and the price control policy of the Sind Government have yielded a huge profit of Rs. 2½ crores out of which Rs. 189 lakhs is for Land Revenue Equalisation Fund and Rs. 50 lakhs for a Post-war Development Fund. The Land Revenue Equalisation Fund is formed to meet any failure in any year as a result of the sliding scale basis of assessment. The other fund is evidently intended for the development schemes to be put through just after the cessation of hostilities. Provision for the above funds would certainly add to the financial strength and stability of Sind and enable the Sind Government to execute bold plans of development without being bothered about the current revenues. Criticism is heard that the windfall profits from the grain sales should have been spent for the present amelioration of the ryot, as previously promised by the Premier and not blocked for future utilisation. The most important feature of the Budget is the proposal to capitalise the subventions to Sind and pay off the Barrage debt. The Government of India have agreed to capitalisation at the rate of 4½ per cent which would mean a "present value" of the subvention on April 1, 1944 of approximately Rs. 1,470 lakhs. The Barrage debt at present stands at Rs. 2,040 lakhs. The difference, viz., Rs. 570 lakhs will be paid in one lump sum when His Majesty's Government approves of the scheme. Out of the free balances of Rs. 754 lakhs at the end of the current year, the above sum of Rs. 570 lakhs would be paid and a net balance of Rs. 184 lakhs would be left over. If the dead weight of the debt is removed, Sind would have achieved financial freedom from the Centre and her borrowing capacity would be greatly enhanced. She would emerge from the war fully capable of launching ambitious schemes of social and economic development. Those who criticise the Budget estimates should remember that the galloping currency inflation in the country is making accurate estimates a well-nigh impossible task in other provinces as well. The abolition of the electricity duty is sure to be welcomed but a reduction in the entertainment tax would have pleased many. Nation-building departments have suffered mainly owing to shortage of personnel.

N. W. F. PROVINCE BUDGET

The Revised Estimates for 1943-44 revealed a deficit of Rs. 296,000 and the Budget for 1944-45 showed a deficit of Rs. 265,000 for the Province. Entertainment Tax is proposed to be doubled and the receipts from this measure are expected to cover up part of the deficit. N. W. F. Province has not great scope for increasing revenues by tapping fresh sources and she looks to increased subventions from the Central Government. The Reconstruction Officer commissioned by Government of India to draw up schemes suitable for this Province has drawn up a plan involving an expenditure of Rs. 863.7 lakhs. He has further suggested that financial help from the Centre should be sought if the schemes are to be executed in full. Mr. A. R. Nishtar, the Finance Minister, has proposed the appointment of a committee to advise the Government on postwar schemes.

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ORISSA BUDGET

A deficit of Rs. 10.36 lakhs has been revealed in the fourth wartime Budget of Orissa. The Budget revenue is placed at Rs. 257 lakhs and the expenditure at Rs. 267.3 lakhs. The Revised Estimates for the year 1943-44 reveal a Revenue of Rs. 249 lakhs and an Expenditure of Rs. 265 lakhs. The opening balance of the year is Rs. 87,000 and the year is to close with Rs. 65,000. Under expenditure a sum of Rs. 80 lakhs have been provided for Supply Transport Departments, Grow-More-Food-drive, standard cloth, subsidised sale of foodstuffs small industries etc. The interesting features under Education are provision for the colleges at Puri, Balasore and Sambalpur, grant of Rs. 1 lakh for Wavell Home for destitute children, a grant of Rs. 40,000 for the Utkal University and a provision of Rs. 1¼ lakhs for the conversion of Orissa Medical School into a Medical College. Since Orissa Coast is exposed to enemy action A.R.P. expenditure remained heavy. The food situation of the Province has been causing considerable anxiety and while the population swelled at the rate of 40,000 per year, the acre under rice has actually declined for the past few years. The importance of irrigation is therefore rightly underlined. The projects surveyed by Sir William Stampe, the Irrigation Adviser to the Government of India, are estimated to involve an initial cost of Rs. 25 lakhs a part of which would be borne by the Centre.

HYDERABAD BUDGET

The budget estimates for the year 1944-45 reveal a revenue of Rs. 16.64 crores and an expenditure of Rs. 13.55 crores leaving a big surplus of over Rs. 3 crores. Compared to the previous two years, the estimates are as follows :—

(In lakhs of rupees).

	1942-43 (Accounts)	1943-44 (R.E.)	1944-45 (B.E.)
Revenue Receipts	12.00	15.32	16.64
Expenditure	10.68	12 83	13.55
Surplus	1.32	2.49	3.08

The revised estimates of 1943-44 revealed increases under Excise, Customs, Forests, Railways, E.P.T. and Paper Currency counterbalanced by decreases under Land Revenue and Excise duty on cigarettes and tobacco. The estimates for the coming year, or the Hyderabad year of 1354F, are placed higher than ever before marking an increase of 82 per cent over the estimates of the prewar budget. During the year under review excise revenue has grown phenomenally owing to remarkable increase of Rs. 13.8 lakhs for the coming year while customs receipts are expected to go down to Rs. 210 lakhs since the price of consumption goods are expected to go down. E.P.T. would remain and is expected to yield Rs. 80 lakhs. Though the actual contribution of the Railways cannot be calculated before the close of the Railway Financial Year the revenue from this source is expected to decrease by Rs. 28.21 lakhs.

On the side of expenditure increases are provided for all important development services and Education has been most favoured this year. The debt position continues to be satisfactory as can be seen from the growth of the Debt Redemption Reserve from Rs. 409 to Rs. 462 lakhs. Easy monetary conditions prevailed and the securities of the Government recorded steady rise in prices. The closing balance of the various Reserves and Funds is expected to be Rs. 2.417 lakhs at the end of 1944-45 as against the revised estimates of Rs. 1.905 lakhs for the last year. Excepting the Famine Reserve which is placed at Rs. 278 lakhs as against Rs. 296 lakhs as closing balance for 1943-44 all other special reserves and funds mark appreciable increases. The picture presented gives the State confidence and hope in tackling the problems of the future.

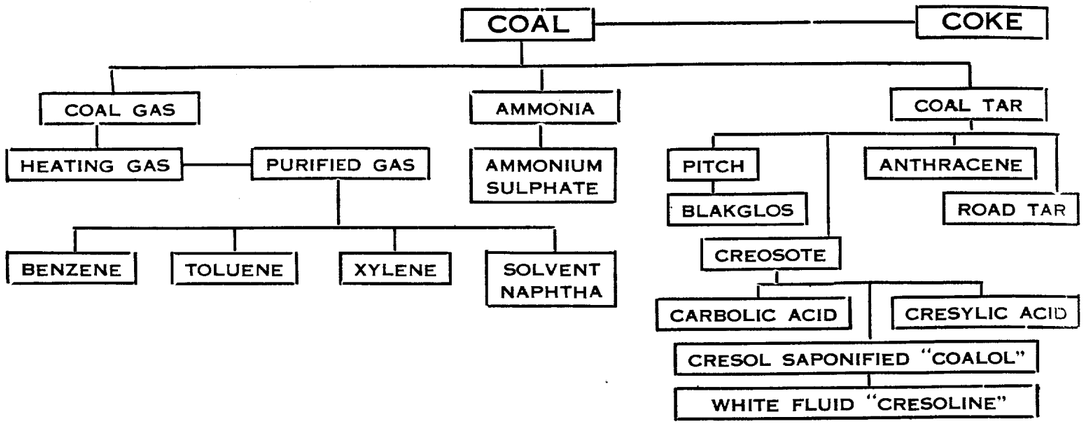
The Budget Note for 1944-45 presented by Mr. Ghulam Mohammed reveals certain notable features besides the increase in revenue and expenditure. During the year under review Hyderabad continued to fight inflationary forces with determination. The drive for Grow More Food was prosecuted very vigorously and steps were taken to mop up the savings of different sections of the population. A system of cash certificate was introduced and an ordinance provided for compulsory savings from all persons whose income exceeds Rs. 6,000 per year at a sliding scale ranging from 4 per cent to 12 per cent. Relief from compulsory savings is provided for contributions to War and purchase of Government of India loans, Savings Certificates, etc. The deposits bear an interest of 2 per cent and will be repayable after the war or 5 years from the date of the promulgation of the Ordinance, which ever is earlier. A Development Loan has also been floated for drawing off surplus money and a system of treasury bills has also been introduced both for stabilising the State finances and attracting idle money. Control of capital issues has been administered with tact and firmness ; and it has been laid down that a new company would be permitted to be floated only on condition that 10 per cent of the shares of the proposed company should be bought by the Managing Directors and that the funds raised by them which are not required for actual working should be deposited with the Government until such time as they are abroad. Growth of cash crops like groundnuts, cotton, and castor has been restricted under an Ordinance which provides for a surcharge on land revenue in respect of land under cultivation of these crops. These surcharges are heavy as they vary from twice to thrice the normal land revenue and levy of sales tax on these cash crops has also been permitted. These steps, it is expected, would effectively stop profiteering and encourage the production of foodstuffs.

MYSORE BUDGET

The Mysore Budget Estimates for 1944-45 presented by the Dewan, Pradhana Siromani N. Madhava Rao, reveal a small surplus of Rs. 2 lakhs after providing for new schemes and contributing over a crore of rupees to the special funds. The Accounts for 1942-43 showed that while total receipts stood at Rs. 638.95 lakhs the expenditure was Rs. 636.91 lakhs leaving a surplus of Rs. 2.04 lakhs. The revised estimates for 1943-44 record large variations from original estimates. The revenues stand at Rs 807.42 lakhs and the expenditure comes to Rs. 804.97, leaving a small surplus of 2.45 lakhs. The high prices of gold ruling throughout the year resulted in an increase of over Rs. 1 crore under the duty on gold, while income tax and excise yielded an increase of Rs. 30 lakhs and Rs. 16 lakhs respectively. Receipts from Railways and Hydro-electric works tell the same story. The excess on the expenditure side is accounted for by the expenditure connected with food and civil supplies, the grow-more-food campaign, increase in the salaries of Government servants and grant of dearness allowance, etc. Increases in income tax, super tax and excise duties on betel nuts, coffee and tea are proposed not so much with a view to adding revenues for the current needs of the State but to keep in line with developments in British India. It is expected that the new excise duties would yield Rs. 7 lakhs while the increases in income tax and super tax would bring in Rs. 18 lakhs. The duty on gold is expected to rope in Rs. 100 lakhs more than the current year's receipts. On the side of development schemes a total of Rs. 96 lakhs has been provided. The opening of 400 primary schools during the year ahead and the provision for opening a Metallurgical Department in the Institute of Science are part of the new drive for greater educational facilities. Rs. 33 lakhs are set apart for public improvements including Rs. 5 lakhs for the Bangalore City Improvement Trust and Rs. 1.7 lakhs for rural reconstruction schemes. Rs. 14 lakhs are allotted for distribution of seed and manure to ryots. Dealing with the progress of industries the Dewan in his budget speech referred to the satisfactory working of industrial concerns. Among the completed schemes of expansion are the ferro-alloy furnaces of the Mysore Iron and Steel Works, the construction of an additional furnace and the manufacture of steamed bonemeal at the Government Dichromate Factory and the establishment of a Sandal Oil Factory at Shimoga. Mysore has its own post-war reconstruction committees to tackle problems of resettlement, re-employment of demobilised men and disposal of stocks and stores. A Commissioner for Economic Development and Planning has been appointed to evolve suitbale plans for post-war progress. The Government have also proposed to have their financial position and methods thoroughly reviewed by an expert from outside. The budget estimates for 1944-45 were framed before the breakdown of the Sivasamudram Power Station and though it is now known that normal conditions have been restored the temporary industrial dislocation it has caused will surely affect the estimates and probably necessitate new adjustments.

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It should be said that both the Central Government and the Textile Control Board were aware of the difficulties and that the control measures were suitably modified as and when circumstances made them compulsory but the black market trader was always ahead of the rule framing authorities so that with mill production far short of the country's requirements, the small consumer was very badly affected.

It is stated that the Government have failed in their effort to increase production at the mills. Difficulty in respect of stores and spares, labour and coal were mainly responsible for the lower output of mills. Night shift working did not prove to be very popular. It was, therefore, decided that there should be a reduction in the requirements of the Defence Services and that a ceiling should be placed on exports. Accordingly only 600 yards were permitted to be exported from this country and the taking of the Defence Services reduced to 35 per cent. of the capacity of the industry. But even the export of 600 million yards has had an upsetting influence and there is a cry of cloth shortage in almost all the deficit areas. The Bengal Province has been most severly affected. The bottlenecks in transport and the lack of co-ordination between the Centre and the Provinces have been obstacles in the way but it cannot be denied that the Textile Control Board and the Central Government have their share in the blame. It is true certain provinces, particularly Madras, have been successful in bringing about an effective distribution but in the absence of suitable machinery for administraton it was not possible to keep track of the culprits. Certain modifications have been made in the arrangements in regard to distribution. There is a certain devolution of responsibility and the provincial government or the State has been allotted the task of distributing the goods to consumers. The success of the new scheme remains to be seen.

The difficulties of Bengal are due to various reasons, a smaller quota, heavy black market trading and the smuggling of goods through Tibet to China. Unless there is a system of rationing. which is of course very difficult of adoption, and unless efforts are made to augment supplies, the problem of cloth control will always remain difficult.

The difficulty is greater in respect of finer goods especially. Imports of foreign cotton are mainly used in executing war orders and not many mills are equipped for manufacturing finer styles. The proportion of the present production of finer goods to total production is less than 10 per cent. As the available supplies are small and as there has been a large increase in the demand for these quantities there is considerable encourgement for the black market trader. Arrangements have been made for the import of a limited quantity of finer goods from the United Kingdom and it is hoped that as a result of the efforts of the Hydari Mission there will be a reduction in war demands and arrangements would also be made for the import of necessary machinery. Larger imports of foreign cotton also might prove to be helpful.

It has been the complaint that the industry has been deprived of its large profits and the Government of its share of tax receipts but that the consumer has been mulcted in the bargain and the benefit of the reduction in prices has been derived by the middlemen. The above statement is correct but even with the reduced prices for cloth and yarn it has been possible to earn a fairly high level of earnings and pay decent dividends. The companies having a very low level of profit for the standard period have, however, been unfavourably affected. The Coimbatore group of mills especially has declared considerably lower dividends for 1944.

The effect of control on cotton mills earnings will be evident from the fact that five cotton mills reporting in 1945 earned only Rs. 1.56 crores against Rs. 2.56 crores in 1944 and Rs. 1.45 crores in 1943. The amount distributed by way of dividends in the latest accounting period is even lower than the figure for 1943 even though earnings are higher than 1943. It can be expected, however, that there will not be any further appreciable reduction in earnings as with the smaller production of standard cloth and the greater inducement for the production of finer styles any further reduction in ceiling prices will be compensated by a corresponding reduction in working expenses. Only, if the industry had been given greater relief under E.P.T. it would have enabled the mills to replace worne out and obsolete machinery without any great difficulty. But the special allowances recently proposed by the Finance Member do not amount to much. Machinery and buildings erected after March 31, 1945 will be eligible for a special allowance of 20 per cent. and 10 per cent but this special depreciation, besides the usual allowances., is not deductible for written down value., Neither can the overall allowances exceed 100 per cent. Also, the new allowances are not available for E.P.T. purposes so that the relief is considered very meagre.

On the subject of post-war development, Sir Joseph Kay had some very interesting remarks to make at the Second All-India Textile Conference held in March, 1945. Referring to the Platt Report on the Cotton Textile Mission to the United States he said: "There is in the report much which will enable us to turn our minds to improvements in the course of our manufacture and in the running of our own mills, for the Indian domestic markets which in the near future tends to be so large as to justify our taking more seriously than we have done in the past 'mass production' for I am convinced that up to this time like Lancashire we have been making natural order of things tend towards a decreased all round efficiency and a lower output. The *pros* and *cons* of automatic *versus* Lancashire looms you will discuss at length and you will find I think that one system is beneficial for one kind of production and the other for an entirely different line of manufacture, but there is no doubt that the automatic loom eliminated the 'human element' which owing to labour's lack of appreciation of the science of weaving produces so many faults in the cloth we manufacture in this country under present conditions'.

Development of the industry on proper lines in the post-war period catering to the demands of the Indian public and the conclusion of trade agreements with the bigger producers are some of the important questions which need careful handling. It is expected that the various problems will be carefully considered at the International Conference in the United States.

India is the birthplace of the cotton textile industry and even at present by virtue of its antiquity and importance it takes the first place among Indian industries. Alike in the capital sunk, in the volume of employment it provides, and in the net addition to the wealth and income of the country, it has hardly a rival among our industries. And what is more, it has a hold on the public imagination and affection that no other industry has. The decline of India's cloth manufactures since the latter half of the 18th century was regarded as the symbol as much as the result of the country's political subjection, and its revival in the second part of the 19th century and its progress since, has been in the public mind equivalent to the progress of a political and economic emancipation.

The excellence of Indian cotton manufactures secured a market for them in Europe, two centuries ago and even the jealousy of English weavers. expressed in riots, did not make the East India Company give up the lucrative trade in calicoes. The growth of the Lancashire industry as the consequence of the industrial revolution in England accompanied by the neglect and ill-will of the governors of India make the old puissant industry of India a mere ghost of its former self, but after 1850 when the East India Company sought to stimulate exports of Indian cotton, many appreciated the advantages that the development of the industry would obtain on Indian soil if the mechanical improvements of the West were adopted. Bombay was designed by nature to be the home of the cotton mill industry and the first Indian mill was established by Mr. C. N. Davar and started work in 1856 though the Bowreah Cotton Mills Company established at Fort Gloster near Calcutta as an English company in 1818 has the distinction of being the first. In the next few years six more mills were started in Bombay Island and the industry had also secured a foothold in Broach and Ahmedabad where the first mill was started in 1859 under the management

for Japanese piecegoods imports and to see that it bore a relation to the quantity of cotton Japan took from India. In the arrangement concluded between Bombay millowners and the Lancashire mission the claim that the Indian industry made to protection was conceded. A lower scale of duties on rayon goods of British origin was agreed to and India was promised that in colonial and British territories she would enjoy the same advantages as the British supplier of piecegoods. The most important point was the undertaking to increase taking of Indian cotton by Lancashire and the promise has been translated into the efforts of the Lancashire Indian Cotton Committee.

In 1935, a special Tariff Board was appointed to examine the effectiveness of the import duties, the level necessary to afford adequate protection against United Kingdom goods and yarn inclusive of rayon and mixture fabrics. The appointment was in response to the request of Lancashire suggesting that import duties should be adjusted in relation to fair selling prices in India. In the cold weather of 1935 the Tariff Board conducted its work, and Lancashire sent a delegation to tender evidence on its behalf in accordance with a provision embodied in the Ottawa Pact giving the U. K. or Dominion interest a right of audience. The Board finished its work before February, but the report was held up and its non-publication caused considerable anxiety. Towards the end of June, 1936, the Government of India released the report and put into effect immediately the tariff changes recommended. The duty on plain grey goods was reduced from 25 per cent *ad valorem* or annas 4¾ annas per lb. whichever was higher to 20 per cent *ad valorem* or annas 3½ per lb. whichever was higher (2) the duty on bordered greys, bleached goods and coloured goods was reduced from 25 to 20 per cent *ad valorem* (3) the duty on yarn of counts above 505 was fixed at 5 per cent *ad valorem* and on yarns below 50's was to be 5 per cent *ad valorem* or 1¼ per lb. whichever was higher. The Board considered that the existing tariff conferred adequate protection to the Indian mill industry which has led evidence for an increase in the duties.

The immediate acceptance of the recommendations, without waiting for the legislature's sanction, caused acute disappointment, though the recommendations were not surprising, in view of the fact that the agitation for concessions had been intensified. The chorus of representations against the report had little effect, but the tariff concessions led to no improvement so far as Lancashire was concerned, for a rise in cotton prices, the passing of the Spindles Bill and rising wages at home involved an adjustment of prices that rendered the tariff revision of no advantage, as the import statistics indicate. But the criticism of the Government action was not lost sight of in the negotiations for a new trade treaty with Britain and one of the consequences of the criticism was the appointment of a panel of non-official advisers to assist the Commerce member.

It were unnecessary to continue in detail this tale of adjustments of duties and quotas, if only because the outbreak of war in September 1939 opened an altogether new chapter in the industrial history of this country after more or less wiping out the past. To preserve historical perspective it is more important to realise that, though protection for the cotton textile industry has figured so largely in contemporary discussions, the progress of the industry has at every stage been far less dependent on it than on the nexus of more or less fortuitous circumstances that arose at short intervals to give a powerful fillip to the industry. It not generally remembered that the Tariff Board conducted only two enquiries into the question of protection for cotton textiles; and the first enquiry was as late as 1926 and was occasioned more by the aftermath of the war and the high exchange ratio than by any intrinsic weakness in the position of the industry. Besides, only Bombay was vitally concerned in the enquiry and to a less extent Ahmedabad, while other part of India were hardly as importunate in their appeal for protection. If the exchange factor, in regard to sterling in the earlier stages of the post-war period and in regard to yen in the latter, were eliminated, the cotton mill industry's need for protection will be seen to be less than it has been believed to be. But one thing, however, must be remembered that the depression of the early 'thirties of which dumping was a part also brought on a set of circumstances in which, first, a 25 per cent surcharge on import duties and later, elaborate systems of quotas arose to give sufficient aid to the mill industry in India.

In fact, the depression brought to an end the short period in which tariffs and protective duties were the chief concern of the industry. For, the post depression period, which may be deemed to have ended with the outbreak of the present war, was a period of bi-lateral trade pacts with two countries, who are at once the consumers of our raw material and the competitors of our indigenous industry. In our dealings with these two countries, we have, then, the intrinsically incompatible aims of increasing our exports of cotton and reducing our imports of cotton goods. The cotton textile industry had then come to be closely linked with the producers of raw cotton in the sense that their plans and their demands had to provide for the needs of the agriculturists. To the extent that the trade pacts fixed quantitative limits to the imports of cotton piecegoods the industry gained for the first time the degree of security which it had all along asked for in vain.

To the credit of the industry it must be said it made the most of this security as, indeed, it had made the most, at an earlier stage, of the security afforded to it by the rising tide of nationalist sentiment in the country.

The striking expansion of cotton textiles in India must perhaps be traced from the time the Bombay and Ahmedabad mills actively took up the suggestion of the Tariff Board and started to develop the manufacture of cloth of higher counts. From the middle of the third decade of this century, the industry had a many sided development (1) in the quality of goods, (2) in the diversity of goods; and lastly (3) in wider expansion over the country and increase in output.

It is not to be supposed that production in all the areas is more or less alike. In fact, historical and geographical causes have gone together to create special features in the cotton textile production of the principal centres; and the following taken from an account prepared under official auspices gives a succint summary of the facts relevant to this context.

"The range of cotton materials produced in the two great industrial cities extends over a wide field, and it would be no exaggeration to say that they are capable of producing almost any grey, bleached, woven, coloured or printed cotton fabric in general demand. Normally, however, when catering for the Indian market, the bulk of the cloths produced in Bombay City consists of light texture cloths made from medium count yarns, but a number of mills during recent years have specialised on fine count cloths which compare in quality with the best exported from England. Grey and bleached plain weave cloths, such as longcloths, shirting, T. cloths, domestics and sheetings account for about 600 million yards of the City's total production, and the bulk of the remainder consist of dhoties about 400 million yards—and coloured goods between 250 and 300 million yards. No detailed statistics are available as to total annual production of bleached, pice dyed, woven coloured and printed goods which Bombay City mills turn out, but it can be stated that during the last few years the outturn of printed goods and the better qualities of bleached shirtings, cambrics, voiles and mulls has substantially increased.

"Ahmedabad normally produces approximately 1,000 million yards of piecegoods per annum. Her production also covers a wide field, and the outturn of bleached goods, coloured goods and fine count cloth is somewhat greater than that of Bombay City. Ahmedabad also produces dhoties and saries on an extensive scale, and has made considerable progress in recent years in the production of cambrics and prints.

"The Province of Madras has more than 50 mills, but many of them are purely spinning mills catering to the needs of the very important handloom weaving industry in that part of the country. Many of the mills are comparatively new and very well equipped. In the realm of cloth production, the main specialities of the Province are the famous Madras handkerchiefs—produced chiefly on handlooms—high-class cotton coatings, bleached shirtings and drills and Service Khaki.

"The Cotton Mill Industry in Bengal has made exceptional progress in the last ten years, and this is not surprising in view of the fact that Calcutta is probably the largest single cotton piecegoods market in the world. Up to the present, production has been almost wholly confined to grey and bleached goods, with dhoties for home consumption predominating.

"The United Provinces with Cawnpore as the chief centre, produces more than 225 million yards of cloth per annum. Grey and bleached goods account for more than 95 per cent of the production, and the cloths produced are usually coarser in texture than those manufactured in Bombay and Ahmedabad since local cottons are almost invariably used. The main production is dhoties of the type used in Northern India. Other lines of manufactures in which the Cawnpore mills are famous are Tentage and dosuti fabrics.

"Delhi and the Punjab specialise mainly in coarse count cloths made from local short staple cotton. Delhi produces considerable quantities of dhoties and tentage materials and excellent upholstery and tapestry fabrics, while the main line of production in the Punjab, where the mill industry is in its infancy, consists of longcloths and T. cloths.

"Production in Indian States has grown rapidly in recent years, and an extremely wide range of goods is being produced. Whilst most of the goods manufactured are made from coarse count yarns, there are a number of mills in Baroda State which specialise in fine count fabrics, and in centres like Indore, a large proportion of coloured goods are made".

IRON & STEEL INDUSTRY

The iron and steel industry has had another year of successful working. As has been remarked in earlier annuals it is the only industry that has been able to report substantial progress both from the point of view of production and improvement in quality. But as one of the biggest consumers of coal, the crisis in the coal industry had naturally an adverse effect on the total output of the Indian industry. It was even considered necessary to close down the furnaces of Tata Iron and Steel Company for some time to build up coal supplies but as it was felt that such a procedure would affect the supply position in respect of iron and steel, there was only a slowing down in the rate of output. The industry is still playing a very important part in the war effort. Virtually the whole output is taken up by the Defence services. Certain useful lines have been added and it is expected that the experience gained will be advantageous in the post-war period. The flotation of two important automobile companies in the last year promises a new line of development while the undertaking by Tatas to produce boilers for the manufacture of locomotives in co-operation with the Central Government is another landmark. Negotiations for the lease of factories in the Central Provinces for the manufacture of locomotives have been very nearly completed.

Thus, like the cement industry, the iron and steel industry will prove to be useful both in war and peace. In post-war years the large demand for construction purposes, the improvement in rail-road transport and undertaking of public works on a large scale should mean so much increase in the demand for steel. The starting of other heavy industries also promises a bright future for the industry.

The progress in the last year is best described in the extract from the annual report of the Tata Iron and Steel Company Limited for 1943-44. "The output of steel during the year was the second highest on record, being next to that achieved in 1941-42. The output of steel ingots was the highest on record. A record production of tools was also made at the Agrico factory. Owing to the deterioration of the coal situation, however, a contraction of output has since taken place, and the position may worsen in the coming months. Steel, by the Perrin process, was made on a fairly large scale for the first time during the year. A wagon building programme was undertaken in the Structural Shops and considerable advance was made in the production of special steels and alloys."

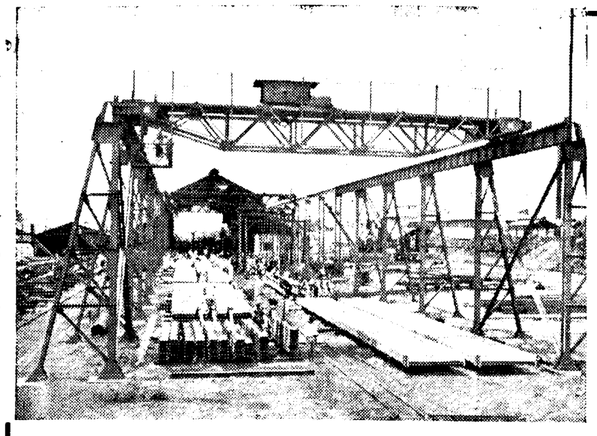
The industry has great natural advantages and Mr. Dunn of the Geological Survey of India has drawn attention to the mineral resources of the Singhbhum District of Bihar which can be compared to the northern part of Ontario. As regards iron ore, limestone and coal, India is now considered to possess great advantages and the average experiences of the small units working in the 19th century are now belied by the great success attained by the Tata Co., and the Indian Iron and Steel Co. The proximity of good class coal to the iron ore deposits must be regarded as the main factor making for rapid progress and although there have been fears that the coking coal supplies in India give out, proposals aiming at the conservation of the country's coal resources now render it improbable that the industry's advance will be retarded by the shortage of the right kind of fuel. In Europe and America, transport costs are appreciably higher and the cheapness and quality of Indian iron ore and its proximity to coal fields are not equalled in any other country. Nature has done more than her share in providing the essentials for the iron and steel industry and so far as labour is concerned, experience has gradually provided a trained labour force whose efficiency is steadily rising. There has never been any fear as regards any shortage of the volume of labour and the iron and steel industry during the last year has done enough to guard itself against labour unrest in any form.

India's increasing consumption of iron and steel makes any anxiety concerning markets almost superfluous. India has been a large importer in the past and the domestic production can only satisfy part of the existing demand. The increasing industrialisation of the country makes it certain that the demand for iron and steel and manufactures thereof will not decline but will increase considerably. The substantial progress made by the subsidiary industries established in conjunction with the iron and steel industry during the past few years affords a reassuring indication of what a prosperous steel industry can do for the country. The benefits, obtained by the tinplate industry, the wire and nail products industry during the past few years have been real and tangible. The plants of the subsidiary companies located round Jamshedpur are all likely to share to the fullest extent in the present prosperity of the industry. The foundries and workshops scattered over all provinces are also likely to experience the benefits accruing from the expansion of iron and steel production after a period of depression in which progress was at a relatively slow pace compared with the very substantial expansion of the steel industry in America and Europe. Round Jamshedpur, as every one is aware, there are numerous plants based on the iron and steel produced by the Tata Company and their progress in the last decade despite unfavourable trade conditions is indeed a happy augury of what is to come. The industries, which have followed the establishment of the potentialities of industrial development in this country and the great natural advantages of the iron and steel industry and its growing prosperity have come to reinforce the hopeful prospects that these subsidiary industries have now before them.

The iron and steel industry was the first to be investigated by the Indian Tariff Board. The Board appointed in 1923 reported in favour of protection and the Indian Legislature passed an Act recommending the levy of specific duties on imported iron and steel materials and the grant of bounties for the manufacture of rails, fishplates, etc. The engineering side also received the benefit of 25 per cent. duties on fabricated steel and the Act also made provision for the protection of the recently born tinplate and wire and nail industries. The scheme of protection was revised in consequence of a heavy and unexpected fall in Continental steel prices and the rise in the rupee exchange to 1s. 6d. The Tariff Board recommended an increase in the duties on imported fabricated steel. The Government of India accepted the findings, but held that a scheme of bounties was preferable to the steep increase in duties recommended, and the Board itself approved the proposal to grant a bounty up to Rs. 50 lakhs on steel ingots produced.

Subsequent tariff board enquiries adopted the scheme of bounties introduced in October 1924 and an act of the Indian Legislature in 1926 amended the former act and provided for higher specific duties. A later enactment in 1927 extended protection till 1933-34 and conferred power on the Governor-General-in-Council to increase the duties, if protection was threatened by dumping. Prior to this, the statutory enquiry of the Tariff Board reviewed the working of protection and recommended two scales of duties, basic and additional, the former applying to British manufactures and the latter governed by the price of Continental manufactures. Though the margin of protection was based on the Board's view that all possible encouragement to Indian Steel should be given through State purchases found favour, and in the case of fabricated steel also the Board held that the use of Indian products should be encouraged by the railways and other consumers. Tariff changes since 1926 were not of any moment and the revenue duty on imported pig iron also was retained. The progress of the Indian industry was examined from time to time by the Tariff Board in connection with inquiries in relation to the wire, nail, tinplate and galvanised steel industries.

The working of protection was investigated thoroughly by the last Board appointed in August 1933 and its conclusions deserve to be set down. The Board considered that the scheme of protection adopted in 1926 had proved successful and that the expected reduction in prices has been effected and that a stage had been reached when on all articles sold by the steel company in competition with Britain, it was possible to say that on imports either no protective duty is required at all or if any is required, the rates may be lower than the normal rates of revenue duty. The Board added that if Continental steel products were sold at fair prices the Indian industry could well stand their competition, and that the duties needed were more in the nature of anti-dumping than protective duties. The Board recommended a duty of Rs. 43 per ton on the imports of untested structurals from the Continent: Rs. 10 per ton on British bars (tested): Rs. 39 per ton on Continental untested bars: Rs. 25 per ton on untested plate from the Continent. On rails, fishplates, structurals and tested plates from Britain the Board recommended no duties. On black sheets (tested) from the U. K. the Board recommended Rs. 10 per ton and Rs. 32 per ton on imports from the Continent. Galvanised sheets were recommended to be subject to an import duty of Rs. 10 per ton, irrespective of the country of origin. On imports of fabricated steel from countries other than Britain a duty of Rs. 40 per ton was recommended. The Board advised a duty of Rs. 38 per ton on British tinplate and Rs. 57 per ton on Continental. On imports of wire nails, the scale recommended was Rs. 25 on British and Rs. 60 on foreign. A duty of Rs. 57-8 per ton was recommended on cast iron pipes imported from foreign countries, while British pipes were to be allowed free entry. The more important part of the Board's proposals related to the recommendation that even the revenue duties on rails and tested structurals should be removed or in the alternative, countervailing excise duties should be levied on internal production. The Government of India accepted the recommendation of the Board, but preferred equalising duties to the removal of the revenue duties. The principle laid down in 1929 and followed since, that in the main amount of protection should be the difference between two prices (1) the c.i.f.



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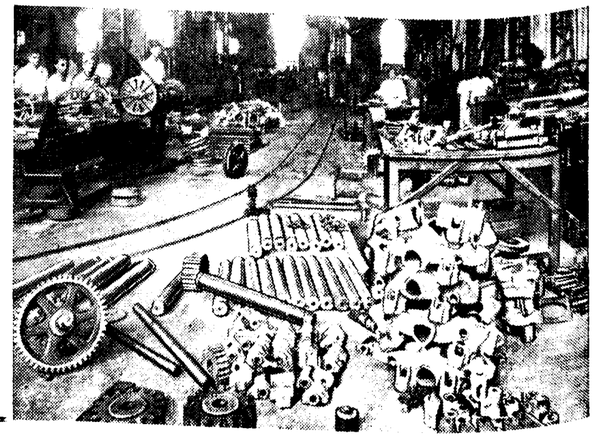
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price at which foreign steel is likely to be landed in India without duty and (2) the price at which the Indian manufacturers can sell at a reasonable profit which was termed the fair selling price. In the 1933 report also, the Board based its recommendations on the same principle after reviewing the working of the protective scheme in force for the previous seven years. The Board noted the large share of the Indian market now supplied by Indian manufacturers. The share obtained by the Tata Company rose from 30 per cent. in 1927-28 to 72 per cent. in 1932-33. Imports were consequently reduced and foreign plants were working at a level much further below their capacity compared with Tatas.

The reduction in costs obtained by the Tata Company as a result of expansion and experience formed the subject of approving remarks, but the view that even the revenue duties were superfluous induced the Government to levy an excise duty of Rs. 4 per ton on steel ingots and countervailing duties on imports by the Iron and Steel Duties Bill of 1934. The Board's report was the subject of serious criticism, and the objection in principle to different duties, the introduction of the back door, and the practical termination of protection formed the main points of attack. In the succeeding year the industry passed through a period when the effects of the tariff changes made themselves felt. Imports increased and domestic production was affected to some extent by the levy of the excise duty. Prices too were lower and the Tata Company had to work for a reduction of costs in order to bear the excise duties which amounted to Rs. 35 lakhs and also the lower level of prices while freight rates also, especially, on the E.I.R., proved a source of disadvantage. But the Company increased the efficiency of the plant and raised the output thereby. Equipment was kept in first class condition and a second sheet mill was brought into production. Better results were obtained from the coke plant and a battery of coke ovens constructed.

The progress of the Tata Company in recent years does not form the principal feature. 1936 will be memorable for the reconstruction of the Indian Iron and Bengal Companies. After protracted negotiations to start a new steel company in conjunction with Tatas, the scheme was abandoned. While Tatas decided to carry out their own scheme of development independently, Indian Iron also decided to prosecute their scheme and sponsored the formation of a new plant at Hirapur to work with the hot iron provided from its furnaces and also to give facilities as regards land, water, lighting, etc. The Steel Corporation began operations in November, 1939.

The progress of the industry in recent years will be evident from the following figures. Production of steel ingots has increased from 5,90,600 tons in 1932-33 to 1,070,400 in 1939-40, nearly double the former figure. Monthly production has been well over 100,000 tons since the coming into operation of the Steel Corporation of Bengal. Production of finished steel during the same period has increased from 441,600 tons to 1,065,600 tons.

The important part played by the iron and steel industry in the country's war effort will be evident from the fact that nearly the whole of the production is taken up by government orders and it has been necessary to ration steel consumption. Apart from the sharp increase in the production of steel a very good opportunity has been afforded to the industry to manufacture new qualities of steel. The manufacture of alloy steels and acid steel has not been hitherto undertaken in India. The Tata Iron and Steel Company is now in a position to undertake the production of these qualities of steel. Only recently the plant for the production of axles and tyres was put into commission.

Even before the outbreak of war imports showed a tendency to decline with the European countries busy on rearmament. Till May 1940 imports of steel were coming in at a fairly satisfactory rate but since then there has been a sharp decline and at the present amount to only very small quantities of special steel. There are practically no imports of the protected qualities. Apart from the decline in imports and the increase in internal consumption, there is need for catering to export markets. Exports have increased from 84,600 tons to 106,500 tons in 1939-40.

The products of the Steel Corporation are sold through the extensive selling organization of the Tata Iron and Steel Company.

The part played by the Indian Iron and Steel Industry in the war period is very noteworthy, and it should be said that the intensified production with the extensions to plant came in very handy at a time when the United Nations were hard pressed for shipping space. It was thus that the production of the Tata Iron and Steel Works and the Steel Corporation of Bengal, two of the biggest units of the Iron and Steel Industry in this country, showed an increase month by month and year by year and the peak of production during the war, so far as the former was concerned, was reached in 1943.

As has been pointed out on a former occasions, the war period is notable for the great strides made by the industry in respect of both the volume and range of production and the improvement in technical experience. The advance made in research work also should result in an appreciable decrease in production costs and place the Indian Industry on a firm footing in the postwar period. What is to be borne in mind at the present moment is that efforts for improving efficiency and production and completing the range of production should be pursued with vigour and the country be made almost independent for its requirements. This is especially important at the present juncture as, with the possibility of a National Mercantile Marine coming into being and the plans for starting an automobile industry in this country, the Iron and Steel Industry should be able to supply the demand from these quarters and not be again dependent upon foreign producers. By this, it cannot be said that we can afford to ignore foreign production for, we have yet to make headway in regard to the manufacture of special alloy steels.

It has been proved in war time that American production is stupendous and can perhaps meet peacetime demand all the world over. But in the immediate postwar years with the main producers in the West engaged on reconstruction work, this country might perhaps be called upon to satisfy the requirements of consumers in the Middle East and the Far East. Building activity within the country also has been slowed down on account of the high construction costs. There is no fear, therefore, of an immediate slump in prices after the termination of hostilities But the time available should be utilised for a consolidation of the ground gained. The quarrel between re-rollers and the industry might crop up. Some comprehensive plan is therefore, necessary and details are to be worked out for the satisfactory conduct of affairs of the industry in the years that lie ahead.

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THE INDIAN COAL INDUSTRY

It was remarked in the last annual that the Coal industry had come into prominence since 1942, and that the large increase in consumption of coal on account of the higher rate of industrial activity promised a good future for the industry. Unfortunately, with the difficulties regarding labour and the floods in the Damodar in the middle of 1943, a very difficult situation arose. The flooding of mines and the scarcity of labour resulted in an appreciable decline in raisings and in the last quarter of 1943, alone there was a reduction in output by one million tons. The jute and glass industries were the first to be affected and output in these two industries was seriously curtailed. The steam-driven jute mills worked for only a small number of hours and the closed week system had to be introduced. Even for three weeks in the month the jute industry could not keep up full production and many loom hours were lost. The crisis in the cotton textile industry was temporarily averted by drawing in on reserve stocks and the substitution of coal by other fuel. The Government of India naturally took a serious view of the situation and it was decided that collieries should be helped to increase production to at least 25 million tons. For this purpose a labour pool was formed and welfare schemes were introduced. Dearness allowances also were increased. Consumption was restricted on the basis of despatches in the latter half of 1943. In spite of the best efforts there was no appreciable increase in production. Government had to suspend exports of coal completely, even to Ceylon. Movement of coal both by road and rail was under the supervision of the Central Government, but it was found that even the increase in prices and control over distribution did not help matters. The Coal Commissioner took over control of prices and production completely as from June, 1944 and Government were to provide the necessary transport and give instructions for distribution.

In order to give inducement to collieries to produce more, targets for production were fixed and on an increase in raisings to above this level bonus payments were made. Thanks to the introduction of women labour underground and the co-operation given by the Central Government the bigger collieries were able to increase raisings to their former levels, but production was still hampered by lack of mining equipment and the delay in the arrival of mining machinery. For open cut mining some help was given but even in this direction not much progress could be made. Towards the end of 1944, six collieries had been offered mining machinery but only three mines had installed the machinery and there was an increase in production by about 50,000 tons per month.

The industry's complaint, is that sufficient priority has not been accorded to the demand for machinery and in the absence of any mechanisation production on account of manual labour was naturally restricted. It is true that women labour has been very helpful but raisings have to be on a very much larger scale and it is expected that the Hydari Mission would be able to get the necessary equipment for the coal industry.

In order to encourage the smaller collieries further concessions have been announced, a ten per cent increase in raisings above the targets being given a bonus of 5 per cent of the sale price on all coal raised and a 20 per cent increase a bonus of 7½ per cent. As this additional bonus was intended mainly for the smaller collieries it was said that total bonus payments should not exceed Rs. 2 lakhs.

The claim of the industry for a liberal basis for E.P.T. has also been conceded though here again the concession is mainly intended to encourage small producers. The minimum profits for E.P.T. purposes has been fixed at Rs. 72,000 instead of Rs. 36,000. A liberal allowance has been given in respect of the various concessions it would be possible machinery installed in wartime so that with The industry, however, is still maintaining to bring about a large increase in raisings. that mining labour is not staying on the job as the moment they get their necessary wages they go back to their villages. Efforts are therefore being made to keep a large contented labour force by increasing amenities for labourers and looking to their welfare.

In importance, the coal industry in India can hardly compare with cotton, or jute or with the pure agricultural staples. In both raw cotton and cotton goods our production is a substantial portion of the world output; in jute we have a practical monopoly; and agricultural staples have a significance in the national economy a part from, and independent of, their relation to the output, and markets of the rest of the world. But in coal, our annual production is an average of 21 million tons, out of a world production of about 1,250 million tons. The industry in India has comparatively less capital invested in it; and the chief collieries are confined to the provinces of Bengal and Bihar and Orissa. Yet, it is one of the most important industries, one in which the public can never afford to take a mere lukewarm interest. First, the welfare of the local industry, though it fills a smaller place in the whole of India, is of vital importance to Bengal, Bihar and Orissa. Secondly, coal is by every criterion a key industry. A good supply of coal is one of the basic conditions in industrial progress. Our railway system would be unworkable without a well-worked coal industry.

Joint-stock coal companies have invested more than Rs. 12 crores in the industry; and there is besides a small knot of coal-fields owned by the railways for which details of capital are not available. Though Raneegunge and Jharia tower over all the rest of the coalfields in India the progress made by the latter is by no means insignificant.

The railways, which form the chief consumer of Indian coal have acquired and been working their own coal mines. Objection has been taken to this development on the ground that, as the railways are owned by the State, the establishment of railway collieries would mean an unjustifiable and unwarranted encroachment of the State into the sphere of private industry. It is, of course, contended in reply that as the railways are commercial enterprises, they must have freedom to develop their business interests and devise combination of a vertical nature, if they deem it profitable to do so. The railway collieries have been developed in the face of natural opposition.

The industry's economic position underwent a definite change for the better during 1936-37. Though the export trade, except to Ceylon, continued to shrink, internal consumption was on the upgrade and the industrial developments in progress led to enlarged use of coal. The price of coal improved in sympathy and after the beginning of 1938 there was a sharp reduction in stocks.

The amendments to the Indian Mines Act and the passage of the Sandstowing bill by the Central Legislature are obviously major events for the coal industry. The average trend in coal prices from the beginning of 1939 showed that the stability of the industry was not above question and only the urgency of reforms in extraction methods compelled the government to go ahead with its programme. The Statutory Board with an official chairman is working in Calcutta, and arrangements have been made for the collection of the cess from the industry. Opposition to the proposals has died down, and the improvement in the labour situation has induced the coal mining industry to accept the case for safer, albeit for expensive, mining.

Until the middle of 1939, the export trade was in an improved state, and the Sino-Japanese war brought about an increase in the volume of exports to the Far East. Total production in India recorded a rise from 23.47 million tons to 25.06 million tons during 1939-40. To judge from the output figures the coal industry must have had a good year, but few of the coal companies could report an increase in profits. The active demand for first class coal was advantageous to only a few companies but the increased consumption in industries did not alter the key position the railways still retain.

The coal industry, like the sugar industry, does not derive any advantage from the presence of war conditions. In fact the important coa companies have been finding it hard to maintain their earnings at the record level of 1937-39, for the post-war period. Prices remained more or less steady.

No attention was paid to the problems of the Indian Coal Industry in the first three years of the war. In fact, it was said that no problems existed for the coal industry from the point of view of war effort. There was a cry of chronic shortage of wagons but this shortage was never at any time, considered so serious as to effect production of the war industries. That is the reason why the Indian coal industry did not benefit in any way from the improved conditions in the industry in the early stages of the war period. Recently, however, it has come into the limelight. The drop in coal production to such a low level as to leave idle even a small number of wagons supplied to the industry for the conveyance of coal from the pits due to the acute shortage of labour, and the demand from the United Nations for export to the extent of 1¾ million tons from this country to the Middle East areas, were mainly responsible for the feverish activity that has been noticeable in the latter half of 1943. The industrial centres in Western India experienced a shortage of fuel while nearer the coalfields, the jute industry had to cut down production on account of lack of supplies of this essential fuel. In the earlier stages, the authorities were not inclined to be serious in their efforts. Only after repeated protests and the demand from the British Government immediate arrangements were made to rectify the position in the industry.

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PAPER MAKING IN INDIA

The Year 1944 has been a year of crises, the first crisis being in the coal industry. It was felt that difficulties in the cloth trade were overcome with the introduction of control over the affairs of the cotton textile industry but as the year progressed it was clear that things had not gone well and that the advantage of reduction in ceiling prices was derived mainly by the middlemen and not the consumer, the shortage in respect of supplies encouraging black market trading. Like the coal and cotton textile industries, the paper industry also had many difficulties. In the second quarter of 1944, it was found that there was a famine for paper and that unless consumption was curtailed drastically it would not be possible to avert a crisis in the printing and publishing trade. The shortage of paper in the fifth year of war was mainly due to the enormous increase in demand on account of Defence Services, the quantity used being nearly 70 per cent of the total Indian production. As has been said in earlier annuals, the paper industry was in the fortunate position of having expanded to a large extent in the years just preceding 1939. The boom in company flotations in 1937 led to the formation of many large paper companies in different parts of the country. As a result of the commencement of production by the new companies in 1939 and 1940 there was a substantial improvement in production, the total indigenous output being 1 lakh tons against approximately 60,000 tons in 1936-37. As there was a virtual cessation of imports from outside, with the increase in consumption on account of Defence Services, which was so great, there has naturally been a big shortage. If the authorities had anticipated an increase in consumption on their own account the supply position could have been eased by imports from elsewhere but as the position grew worse and there was no immediate possibility of imports from abroad, it was found necessary to promulgate the Paper Control Economy Order in the middle of 1944 by which all consumers were required to reduce their takings to 30 per cent of the basic period. Special concessions were allowed to certain classes of consumers but by far the greater proportion of printers and publishers were badly affected. The work of the authorities was made even more difficult by the poor allotment of coal supplies to the paper industry. For some time many paper machines were closed in the factories in Calcutta, there being a decline of over 20 per cent in the Titaghur Paper Mills alone. It is satisfactory to note that since September 1944 there has been a slight improvement in production though it is still well below capacity. Imports of foreign paper have also been received in the first two months of 1945 but the problem of storage presents a great difficulty and supplies have had to be spread over a period. It can be definitely said, however, that the crisis has been overcome and that it will be possible to allot more liberal quotas to consumers. Already, the authorities have made a gesture by increasing the allotment by 10 per cent to all consumers. The need for paper rationing and standardising production, however, is still there and the industry will have to make the best of a bad job.

Paper making in India is of some antiquity. At least one writer claims that a hand manufacture process had been known and practised from quite early times. But we are not now concerned with the evolution of craftsmanship so much as its establishment as a modern industry. This may be said to date from the year 1867 when the first paper mill subsequently absorbed into a larger concern, was established on the Hooghly. During fifteen years of solitary existence this mill made no very marked headway in either technical or commercial department. In 1879 a second paper mill in Upper India had come into production and in 1882 the third mill was registered as a public limited company. These three, with a couple of smaller concerns in Gwalior and Poona, were the early pioneers in an industry which in its early days does not appear to have made a very strong appeal to the industrial entrepreneur of last century. By 1925, the year in which the industry first made an organised appeal for protection by tariff, there were 9 mills in existence, whilst two more were projected. In the intervening years the number of mills in production has only been increased by two bringing the total to 11 in 1946. The relatively high capital outlay coupled with the admittedly difficult technical processes have tended to keep down the number of paper making concerns in India. For most of the time that paper has been made in India manufacturers have looked mainly to the domestic market for their sales, but the time has arrived when paper making in India may be ranked amongst the country's potential exporting industries.

In its early days the Indian industry considered the manufacture of high class white paper rather beyond its capacity, and this was to some extent due to its dependence upon rags and waste paper for its raw material. But this crude practice was soon to change. Routledge in 1860 proved the virtues of esparto—a semi-tropical grass—and in 1875 and 1879 reported upon the possibilities of Indian bamboo which served to draw attention to other Indian fibres. There are only incomplete records of the early experiments with Indian fibres, but it is known that two mills made use of Moonj (Saccharum Mooja) and Sabai (Ischoemum Angustifoilum) in their first years. Moonj seems to have held the field in the beginning, for it made a very good paper. Sabai, however, presented less difficulty as regards treatment, and, therefore, soon came into universal favour among Indian mills. Having found in Moonj and Sabai ample resources of plant fibre it was perhaps natural that the Indian mills then in operation should at that time have made no effort to follow up Routledge's researches in bamboo—a much more difficult problem. But it is an interesting speculation to think of the possibilities had the technique of bamboo pulp manufacture received simultaneously the attention given in other countries to the technique of wood pulp manufacture. Possibly, India might have come to the forefront as one of the world's most important producers of pulp and paper. What actually happened was that the industry based on Sabai grass, while relatively still in its infancy was almost put out of business by the competition of wood pulp. Nevertheless in bamboo it later found a new raw material of great value.

A few details about the homely indigenous fibre which provides the raw material for this great Indian industry may not be out of place at this point. But the Tarriff Board of 1925 and Tariff Board of 1931 found the supplies of bamboo in areas where the other conditions were favourable for exploitation and were sufficient to meet the needs of all the paper mills in India and to leave a surplus from which an export trade in pulp could be developed. Apart from Assam and Chittagong, seven areas were specified as having been subject to regular survey, one in Orissa, two in Madras and one in Bombay, from which the estimated yield of bamboo was 291,000 tons, and three in Burma from which the estimated yield was 1,661,000 tons. The quantity of bamboo available from surveyed areas in India, now exceeds 600,000 tons against an estimate of 291,000 tons in 1930-31. Additional supplies are obtainable from unsurveyed areas for which no estimates are available. Assuming that 2.38 tons of bamboo on an average are required to make a ton of paper, the quantity of bamboo at present required by mills is about 40,000 tons. There is, therefore, an ample margin of reserve supply available for an extension of bamboo pulp manufacture. In Burma, where supplies of bamboo are even more abundant, no paper mills have as yet been established.

The advantage of bamboo as a raw material in comparison with wood is that the cutting rotation is on an average 4 years as against 60 years for most species of wood. A disadvantage is that when bamboos seed, they die, and in any given area the supply may be curtailed for a period of 10 years. Bamboos seed 'gregariously' or 'sporadically' and the degree of sporadic seeding varies. Recent investigations indicate that the seeding of bamboos is more gradual than was at one time thought and does not extend to all species simultaneously. Further, the reed bamboo stems remain suitable for the manufacture of pulp for a considerable time, which tests have proved to be at least four years. The danger of a shortage of bamboo in any given area in consequence of seeding is not, therefore, considered serious.

After bamboo, grass is the second most indigenous material used in India. The species used for the making of pulp is "Sabai" grass which is grown mainly in the Punjab. Whilst bamboo is the principal material on which the future of the paper industry mainly depends, grass as a constituent of paper has a recognised value and will continue to be used in conjunction with other materials as a necessary ingredient in the manufacture of certain classes of paper for which special bulk or tensile strength is required, just as esparto grass is used by a particular class of mills in the United Kingdom. It is probable that, with improvement in the quality of bamboo pulp, mills, which can obtain supplies of both bamboo and grass, will to some extent substitute bamboo pulp for grass pulp on account of its relative cheapness. But in the United Provinces and the Punjab, where adequate supplies of bamboo are not available, grass must continue to be the chief raw material. Waste paper and cloth cuttings are also used as ingredients in the manufacture of cheaper class of paper to a small extent by bamboo and grass mills and to a greater extent by other mills. The quantity used was 5,908 tons in 1936-37. Supplies are obtained by mills through contractors mainly from large towns where sufficient quantities are avail-

able for the collection of different qualities. White paper and paper cuttings are in most requirement. Coloured papers are sorted out from the white and used for the manufacture of inferior papers such as badami and brown packing. In most countries that make pulp, wood of the coniferous variety is the principal material used. In India, forests of coniferous trees—pine, spruce and fir—are available in the Himalayas, but difficulty of extraction and lack of transport facilities, have hitherto stood in the way of the utilisation of wood for the manufacture of chemical pulp. It is doubtful if use can be made of spruce and fir on account of the inaccessibility of the areas in which they grow except in the Kashmir State. The possibilities of using pinewood are more promising. A number of auxiliary materials are used in the Indian industry. Some of them are indigenous; some have to be obtained from elsewhere. A limited quantity of wood pulp is imported either as bleached pulp ready for admixture with bleached indigenous pulp or as unbleached pulp which requires bleaching along with other material. The chief quantities imported are bleached sulphite pulp, and easy bleaching and unbleached strong sulphite. Small quantities of special kinds of pulp such as aspen and kraft pulp are imported for special lines of paper.

As the manufacture of pulp from bamboo is exclusive to India, a brief description of the process should find a place in any survey of the industry, however brief. Imported pulp is no longer essential, though for certain purposes it is sometimes added, but the best qualities of printing and writing papers can be made without its admixture. One of the main trends of research in recent years has been the increasing use of indigenous materials, which has in fact been an essential condition of the protection in certain categories of paper which the industry has enjoyed for some time past.

The initial stage in manufacture is the crushing or chipping of the raw bamboo into a form suitable for the subsequent processes. This mechanical treatment is necessary in order to disintegrate the fibre and render it accessible to the chemical re-agents employed in the process of digestion. The experience of mills which manufacture pulp from bamboo, is that crushing in a series of rollers is more satisfactory than chipping the bamboo in chipping machines. The next process is the digestion or cooking of the disintegrated fibre, which is the chemical process by which the various substances other than cellulose are dissolved. These substances consist mainly of pectins and lignins in several forms. Two processes are in use, which may be described as the acid process and the alkali process. In the acid or sulphite process the chemicals used in the preparation form magnesium-sulphite.

The acid liquor is pumped into the digesters loaded with the bamboo chips by the direct overhead method and the temperature slowly raised by the admission of steam under pressure. The digesters consist of a mild steel shell lined with acid resisting brick and are of different capacities. After cooking is completed the contents of the digester are blown off into a 'blow pit' from which the spent liquor carrying the non-cellulose material is drained leaving the bamboo pulp behind. The alkali process may be subdivided into two, the soda process in which the principal chemical used is caustic soda, and the sulphate process, in which sodium sulphate is mixed with a small proportion of caustic soda. The application of the chemicals used can be made in more than one way. The 'fractional' and the 'cascade' methods are those at present in use in India. The average total period of cooking is 14 to 15 hours including washing of the pulp. Those mills using the alkali process have special plants for the recovery of chemicals. After the digestion or cooking process is completed and the pulp drawn off from the digesters, the next stage is washing and straining to remove impurities. The pulp is then pumped into a concentrator where the water is extracted and the concentrated pulp passed to a storage chest ready for the process of bleaching.

Where grass is used it is first dusted and then loaded into digesters. The process of digestion or cooking of grass is carried out in one operation at a constant pressure with sodium hydroxide either by the direct overhead or by the 'fractional' system. The pulp after digestion is broken up, strained, washed and bleached. After completion of the process of bleaching the bleached pulp is passed to the bleaching house. If imported bleached pulp is used, it is added at this stage. The process of bleaching is of great importance since the quality of the paper made depends largely on the attainment of the correct degree of consistency in the pulp. The length of time required for bleaching depends on the nature of the material from which the pulp is made. After bleaching the pulp is passed through the paper machine to emerge finally as paper.

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THE NON-FERROUS METALS INDUSTRY IN INDIA

BY

Mr. G. K. KHEMKA, B.A., B.L.

Together with iron and steel, non-ferrous metals like copper, aluminium, lead, zinc, tin etc., constitute the basis of a group of Metallurgical industries around which Engineering industries grow and develop. At the outbreak of the present War, India's metallurgical industries were either non-existent or were in a very undeveloped state. In fact, India is highly deficient in regard to essential non-ferrous metals. In the past her requirements were largely met by imports from foreign countries. War has given an impetus to several industries; in the field of metallurgical industries the country has now fully realised the supreme need for developing the non-ferrous on a large scale and a well-organised basis. There is ample supply of bauxite for making aluminium. India's copper supplies are, however, meagre—the present supply of about 6,000 tons per annum of copper represents hardly a tenth of her requirements. Even this is not refined electrolytically and therefore is not suitable for many important purposes. The country has no tin; the size and nature of local deposits of antimony, lead and zinc has not been ascertained but it is admitted that there are several deposits of non-ferrous metals. Furthermore there is an abundance of scrap available but so far no proper use of this material has been made.

The argument that it is not possible to establish in India a non-ferrous metal smelting and refinery unit as long as there is lack of suitable raw material is both harmful and misleading to India's national economy. In Europe many countries have no ore basis Lack of their own supplies for virgin metal has not hampered success increating a refining industry based on scrap. In countries reporting a paucity of virgin metal, every effort has to be made to refine the available scrap. During World War I in Germany the process of refining scrap was certainly brought to a high state of perfection. India has not given sufficient attention to this important problem. Indeed the scrap of this country before the war was exported to Japan, Germany and other countries at nominal prices to be only re-imported in a refined condition at high prices.

After the outbreak of War and restriction of oversea imports, a serious situation in respect of essential supplies of non-ferrous metals and alloys arose. With the entry of Japan into war, the already difficult situation became critical owing to the loss of supplies of tin from Malaya and lead and zinc from Burma. No less difficult was the problem of profitable disposal of the scrap metal which lost its main export outlets. Under the circumstances created by the exigencies of war, India has made great strides in the production and processing of non-ferrous metal alloys; she could have made still greater progress had it been possible to import modern plant and technical personnel.

War demands have been responsible for the growth and development of these industries. With the termination of hostilities, the capacity will have to be switched over to peace-time requirements; fortunately, the transition from war to peace is not likely to be difficult because the existing plant and equipment are not of a highly specialised nature suited for war purposes only. The fact is that many concerns have come forward at a critical period and laid down plant and equipment—such plant as could be made in India—and rendered valuable service in the interests of the war effort. The non-ferrous metal industry is one of the key industries and will occupy a permanent place in the future economy of the country. The non-ferrous industry, if it is properly understood, includes in its category not only smelting concerns and fabrication workshops engaged in casting, rolling and extrusion, but also refineries which reclaim secondary metals such as copper, zinc, lead and tin from scrap and factories which produce the "primary" metals from ores.

There exist today a small number of concerns of the first type in cities like Bombay and Calcutta working more or less on upto-date lines but hundreds of smaller concerns spread over the country do similar work in the most crude and wasteful manner. India's contribution as a producer of primary and secondary metals is extremely disappointing. The main reasons that have been advanced so far for such a state of affairs are lack of developed ore bodies, difficulties in securing plants, tools and skilled personnel, want of knowledge of the uses of indigenous minerals and of manufacturing techniques and, last of all, uncertainty about financial returns. India's immediate task is to develop industries of primary metal from the abundant indigenous ore deposits and to put up refineries to use the available scrap.

It is interesting to note that metal refining on a smal scale is gradually being taken up by some industrial firms of this country. Electro-refining of silver is practised in Bombay; the question of electro-refining of copper from scrap is under active examination. The fact that electrolytic copper is essential for the electrical industry—it is largely used in the P. and T. and other Government Departments and also for Munitions purposes—makes it necessary that such an industry should assume a strategic importance. Electrolytic copper is the essential raw material for electrical industries like the manufacture of wires, cables, transformers, motors and generators etc.The pre-war requirements from Government Departments alone amounted to nearly 5,000 tons a year. A refinery on a modern scale yielding 10,000 to 20,000 tons of metal will more than pay for itself and, at the same time, serve an important national interest.

The recent decision of the Government of India to set up a Central Technical Power Board with a view to outline schemes for electrical development and thereby assist in the establishment of electrical industry in India is a right step in this direction. It is gratifying to note that the task of rolling electrolytic copper bars into copper rods to be used in the manufacture of wires and cables has already been undertaken for the first time in India by The National Rolling Mills Ltd., near Calcutta. Their factory is equipped with most up-to-date machinery and skilled personnel. In the future there will be no need to import electrolytic copper rods in India for the purpose of manufacturing electric wires and cables.

Although India had begun producing cables prior to this war the quantity manufactured was small as compared to the immense and increasing demands of the country. The task of manufacturing electric wires and cables in India on up-to-date lines and on a very extensive scale has been undertaken by the *National Insulated Cable Co. of India* Ltd.,—in about 6 months time there will be a well-equipped modern factory.

Brass rods hitherto manufactured by the rolling process will hereafter be produced on Extrusion Presses by *The National Pipe & Tubes Co., Ltd.*, who are putting up Extrusion Presses; theirs will be the first factory in India to extrude rods for the trade.

Development of the Non-Ferrous industry has also been undertaken in Jaipur State and Bombay where the ventures have been of invaluable assistance to the war effort of this country at a time when it was not possible to get foreign supplies to meet the most essential requirements of the Defence Departments; their contributions to India's war effort have been considerable.

The non-ferous industries established in the country rendered yeomen service at a most critical period and have definitely qualified for protection against foreign competition in the post-war period. Many sections of this industry owe their origin to the restrictions on imports. After the war if these restrictions are removed the new industries will be exposed to the full blast of foreign competition. It is high time that firms interested should form an association to safeguard the interest of the industry as a whole.

The need for protection for the newly started industries after the cessation of hostilities has been very well recognised for, it has been definitely proved that the newly started enterprises have performed a very useful function in the difficult war period. Government had given assurance of protection to the new industries in 1940, and it is well that they have reaffirmed their policy and stated that there will be suitable adjustments in tariffs and every help will be given to the new industries. It is hoped that planned industrial development will safeguard the country's interests. It was feared that the Hydari Mission would undo all the good work, but fortunately compensatory imports will not have any great adverse effect on Indian economy.

FOREIGN TRADE IN 1944

The pattern of India's seaborne trade in the war period has been changing with the fortunes of the Allies in the war and the increase in the importance of this country as a base of operations in the war against Japan. In the first four months of the war our foreign trade was true to type. There was the expected increase in activity and the principal raw materials were in great request. But the fall of France and the loss of Continental markets created new problems for the country and it was very much feared that the sharp shrinkage in the total volume of trade would result in a heavy adverse balance of trade and upset the country's economy. The outbreak of the Japanese war added to the general confusion. It was not until the latter half of 1942 that there was a turn for the better and since then it has been possible for this country to take advantage of the increasing tempo of the war effort. There has been an increase in the total of trade both in value and quantity; but the improvement has been patchy or rather it should be said it has been confined to a few items like tea, cotton manufactures and jute manufactures. With the easier shipping position and the progressive reconquest of lost territories it is true that the prospects for a resumption of foreign trade on the old lines, with the advantage of new contacts, are better. But the problem of reconstruction and the question of ability for payment of goods are obstacles which might not be satisfactorily got over for sometime.

The most salient feature of our foreign trade during the war period has been the expansion of business between Empire countries and those within the sterling area. India has been brought nearer Australia, Canada, Egypt Iraq and other Middle East countries. There has been interchange of commodities badly needed by one another and in almost all cases it has been possible for this country to build up a favourable balance. With the United States also it has been possible to have a larger export trade; but the benefit has been offset to a certain extent by the receipt of goods on lend-lease and the reciprocal lend-lease arrangement. The reopening of the Continental markets might give us back the peace time trade of Rs. 30 crores; but it is very doubtful whether the devastated countries would be able to absorb goods on anything like the prewar scale. Nevertheless there are signs that before long it would be possible to resume normal trading with one of our important customers on the Continent, France.

Apart from the generalisation of conditions relating to foreign trade in the war period, it is not possible to present a complete overall picture of the direction of trade in recent years, the development of new markets, the possibility of their retention in peacetime and the possible character of trade in the post-war period. All circumstances considered it is a great gain that the country's economy has not suffered to the extent anticipated on account of the loss of certain markets and that certain fortuitous circumstances and the lack of resources of other countries within the sterling area have compelled development on new lines. There has been an increase in trade in both raw materials and manufactured goods like cotton cloth and yarn and jute manufactures. Under Food and Drink, Tea exports have increased substantially. Tea, Oilseeds, Cotton and Jute manufactures account most for the expansion in trade. The maintenance of imports at a low level, mainly due to the inability of foreign countries to produce the much needed goods, has led to an increase in our favourable balance of trade.

A reversion to the old pattern of things is, however, visible in the figures for 1944 full details relating to which year are now available. Three tables are given below giving the figures regarding imports and exports month by month for the Calendar year for three years. It will be seen that till the end of 1943 imports have been below Rs. 10 crores and there is a definite increase after December, 1943. In the latter half of 1944, there has been such a large increase in imports that even with the improvement in exports by nearly Rs. 35 crores the balance of trade is lower at Rs. 50 73 crores against Rs. 75.75 crores.

It would appear that the peak of the export trade for the war period has been passed and that with the larger requirements at home it cannot be expected there will be any big rise, though the Continent might possibly take more oilseeds and jute. While larger exports of jute can be expected, the oilseeds trade will not regain its former proportions as with the development of the oil industry and an increase in internal consumption there might not be any large surplus left over. With the need for manure the export trade in oilcakes might be stopped. If the former rate of exports of Indian cotton can be obtained it would be very helpful in solving the problems of the Indian cotton grower but with a world surplus of cotton and the poor possiblity of any large Japanese consumption of short-staple cotton there is no hope of the former trade.

Coming to a detailed study of the figures for the last year exports aggregated in 1944 to Rs. 231.60 crores against Rs. 196.92 crores for the previous year. Imports in the same year increased to Rs 180.85 crores from Rs. 110.84 crores in 1943. Thus against the increase in exports by Rs. 34.68 crores imports were higher by Rs. 69.51 crores. The favourable balance of trade as a consequence declined by Rs. 25 crores to Rs. 50.75 crores. The favourable balance of trade in 1942 was as much as Rs. 101.18 crores, though in 1941 and 1940 they were only Rs. 53.18 crores and Rs. 5.81 crores respectively.

In the import trade the largest increase is noticeable under oils. The value was as much as Rs. 71.09 crores against Rs. 31.90 crores in 1943. Such a large increase in the import of oil must have been obviously due to the increased consumption on non-civilian account, as petrol rationing is still in force and it can not be expected that the whole of the increase would have been under heavy oils and other lubricants. Imports of foreign cotton have been larger at Rs. 22.14 crores against Rs. 19.93 crores. Food grains alone were Rs. 6.93 crores against only Rs. 1.43 lakhs in 1943. Imports of Chemicals show a big increase while machinary are moderately higher. There is a jump under diamonds.

As for export, the largest item is under jute manufactures at Rs. 60.59 crores against Rs. 44.43 crores. Cotton manufactures came next with the total at Rs. 40.57 crores against Rs. 42.72 crores. The decrease is due to the limitation of exports and the reduction in ceiling prices. Oilseeds were Rs. 11.24 crores against Rs. 10.26 crores, raw cotton Rs. 9.01 crores against Rs. 6.31 crores and raw jute Rs. 7. 95 crores, very nearly same. Hides and skins raw also were higher at Rs 4.57 crores against Rs. 3.40 crores through dressed skins and hides were lower at Rs. 4.36 crores against Rs. 4.91 crores.

EXPORTS OF INDIAN MERCHANDISE

Month	1942	1943	1944
	Rs.	Rs.	Rs.
January ..	20,63,85,967	12,36,53,484	16,53,01,535
February ..	20,77,99,687	13,74,10,611	23,10,23,759
March ..	19,39,44,471	16,59,38,077	16,04,10,638
April ..	17,75,60,406	15,62,93,153	16,21,76,694
May ..	13,14,49,648	16,38,71,084	15,97,35,755
June ..	13,11,14,088	18,00,56,669	18,93,63,732
July ..	15,07,40,225	12,66,17,434	21,34,96,502
August ..	14,87,49,878	16,76,94,102	18,21,47,003
September ..	18,24,22,428	13,98,25,523	18,53,35,997
October ..	14,01,99,989	18,35,99,326	18,26,12,045
November ..	20,08,70,077	19,97,17,605	17,09,81,725
December ..	18,62,27,605	11,85,33,640	18,54,64,309
Total ..	205,74,64,469	186,32,10,708	218,80,57,746

IMPORTS OF FOREIGN MERCHANDISE

Month	1942	1943	1944
	Rs.	Rs.	Rs.
January ..	11,51,74,581	9,44,31,382	11,84,57,393
February ..	9,50,92,022	9,03,36,020	11,72,12,314
March ..	9,91,19,374	9,19,86,242	12,37,47,734
April ..	8,75,39,929	9,36,92,228	12,58,59,233
May ..	8,50,63,771	8,04,99,716	17,05,73,153
June ..	8,63,08,251	8,67,67,548	14,35,47,722
July ..	9,67,87,371	7,61,88,310	19,23,52,607
August ..	10,73,17,963	9,57,91,993	17,25,95,488
September ..	10,48,03,532	8,92,96,559	13,36,68,995
October ..	9,85,44,320	8,36,15,384	16,84,20,258
November ..	8,00,69,292	9,77,24,019	18,52,08,869
December ..	8,12,68,947	12,80,17,645	15,70,08,564
Total ..	113,70,89,353	110,83,47,040	180,86,52,830

EXPORTS OF FOREIGN MERCHANDISE

Month	1942	1943	1944
	Rs.	Rs.	Rs.
January ..	1,17,65,415	38,84,620	52,82,144
February ..	68,76,286	24,31,035	56,12,008
March ..	1,51,64,231	63,52,695	54,16,762
April ..	1,15,78,371	50,84,713	76,49,641
May ..	1,09,34,024	36,67,558	27,38,984
June ..	63,61,323	27,62,856	28,56,349
July ..	60,80,290	1,15,72,076	55,63,950
August ..	99,22,988	50,21,061	46,59,072
September ..	29,75,506	48,96,282	2,74,73,293
October ..	34,13,572	2,64,53,616	3,03,32,429
November ..	21,90,379	3,02,53,573	75,44,334
December ..	45,65,566	34,57,309	2,17,47,760
Total ..	**9,18,27,951**	**10,58,37,394**	**12,68,76,726**

RAILWAYS IN POST-WAR INDIA

The Railway Board has drawn up a post-war development plan for Indian railways details of which have been made known by Sir Lakshmipati Misra recently. The basic plan envisages provision for the rehabilitation, repair and replacement of workshops, machinery, locomotives, wagons, coaches, tracks and other equipment which have been subjected to abnormal wear and tear. A programme of construction of new lines as well as the replacement of lines dismantled during the war has been evolved. 14,000 miles of railway are proposed for construction. 5,000 miles would be achieved within the next few years. The plan at present provides for an annual programme of 500 miles spread over a period of 10 years, the total cost estimated comes to Rs. 100 crores. Provision has also been made for improvement of tracks, stations and yards in signalling and interlocking. Extension of control wires, roads over bridges, water softening to improve engine outturns, repair of weak bridges, water facilities, "sick" sidings etc., have also been provided for. Civilians who have been suffering for want of facilities in railway travel all these years, will find to their comfort that the railway plan promises elaborate conveniences and better amenities for third-class passengers both in trains and at the stations. The public are assured that the requirements of a passenger from the time he enters a railway station to the time he leaves it have been closely studied and a programme of facilities drawn up. The proposed amenities include raised platforms, overhead bridges, sanitary latrines, additional waiting sheds, improved water supply, waiting rooms for women passengers, plenty of shady trees, improved cooking arrangements, increased area for each city etc. Welfare measures for the staff have also been drawn up to improve their efficiency and meet social needs of all the railway employees. Ample supply of drinking water, adequate expansion of railway hospitals, more dispensaries, training schools for the staff are also to be provided. The Basic plan also contains schemes for the absorption of demobilised Army personnel in railway service. The railway network will be regrouped and proposals for extending the activities of the railways through transport service like roads, air, etc., are also under consideration. It is also promised that the Railway Rate Structure, till now so unsatisfactory from every angle, will be overhauled so as to serve the requirements of postwar India. The plan involves an expenditure of Rs. 319 crores in the first 7 years of the postwar period, details being as below:

1. Rehabilitation of Rs. 125 crores.
2. Operative improvements Rs. 45 crores.
3. Staff welfare Rs 48 crores
4. Provision of third-class amenities Rs. 45 crores.
5. Construction of new lines Rs. 56 crores.

Explaining the Railway Development Plan now put before the public Sir Lakshmipati pointed out that if the December target for the railways is realised the cost would come up to Rs. 1,220 crores in the first 17 years of the postwar period, Rs. 320 crores in the first 7 years, Rs. 400 crores between the 7th and 12th year and Rs. 500 crores in the last five years. While the December plan recommends 21,000 miles of new railways, the Government plan is content with 2,800 miles of new construction in the first 7 years. Explaining the special reason for planning such a small mileage in the first 7 years it is pointed out that transport in these days has to be conceived with a coordination of service involving several agencies. It would not be prudent to assess the utility of the railway plan proposed just by the mileage of the new railway's programme because the chief consideration should be how India as a whole is to be well served by the combined efforts of the road plan, railway plan, aviation plan and the plan for water transport. The case of Soviet Russia has been cited as an instance where during the period 1918 to 1936 only 9,000 miles of new lines or an average of 500 miles per year have been constructed. If 500 miles can be sufficient for Russia to develop its backward areas, an equal mileage plan for India in the first quinquennium has to be taken as satisfactory. The proposed 5,000 miles of new railways will be so constructed that no place of importance will be more than 25 miles from a railway except in a desert or a hilly country. The mileage has been fixed with a view to avoiding wastage or duplication of effort by the different transports and with a view to avoiding waste of limited resources available. Unlike the planning for medical relief, education, agriculture, etc., the needs of postwar Indian railways cannot be estimated with anything like accuracy because the demand for the carrying capacity of the railway is largely connected with the actual materialisation of the other postwar schemes. In fact, if those schemes are actually pushed through, the railway plan will easily expand even during initial years so as to keep pace with the increasing national needs.

Regarding the financing of the plan Sir Lakshmipati said that about Rs. 120 crores of the Rs. 320 crores will be drawn from the Depreciation Fund which the railways have been building up for utilisation in the post-war period. The remaining Rs. 200 crores will have to be financed out of loans at the rate of Rs. 35 crores per year. Since the railways form the largest employer of industrial labour, and a vital factor in the development of national industries, the demand for Rs. 35 crores per year for the development of this agency is not considered an excess.

With regard to the manufacture of locomotives it is revealed that preparations are being made to manufacture boilers at Kanchrapara and that the Government of India are conducting negotiations with a private firm for the manufacture of locomotives, and boilers immediately as a war measure and engines just after the cessation of hostilities. We are told that machinery for boilers has been ordered and will be arriving in the near future. Regarding production of wagons, the building capacity of India is being developed for 4,800 wagons per month and this, it is believed, will be sufficient for the requirements in the earlier years of the post-war period. Passenger coaches are already manufactured in India and there will not be any difficulty in this line.

The public have been fed on promises of locomotive manufacture since 1923 and Sir Lakshmipati's latest assurances may not make any differences in the widespread pessimism in commercial circles regarding the development of this vital key industry. It is reported that India has concluded an agreement with Canada and that about 2,100 locomotives will be imported from that country in the course of 1945. This is an eloquent comment on the practicability of the locomotive manufacture scheme involved in the Railways Development Plan.

Sir Edward Benthall, War Transport Member, stated in the course of a speech in the Assembly that nineteen meter-gauge locomotives had been manufactured at Ajmer since the commencement of the war and fifteen light broad-gauge engines were expected in the coming year. Indents had been submitted for the machinery, necessary for the locomotive boiler building project at Singhbhum. An order for 100 boilers had been placed on heavy machine works and arrangements were completed for the supply of materials required for their manufacture. Wheels and axles, Sir Edward pointed out, were being built by Tatas in India, who had almost completed their negotiations for the purchase of the Singhbhum workshops. About 40 per cent of the cost of the extension to Tata's wheel, tyre and axle plant would be borne by Government. He further pointed out that negotiations with Tatas were practically completed in regard to the building of locomotive boilers as a war measure and complete locomotives after the war. Although some passenger locomotives might be ordered from overseas, the policy of the Government, as Sir Edward stated, was to encourage the manufacturing capacity of India and thus to make the country self-sufficient.

Any plan for railway development must take into account the question of road-rail-co-ordination. It is obvious that there is no use in constructing a railway if a road can do the work with equal efficiency. Sir Edward Benthall, War Transport Member pointed out in opening the meeting of the Post-war Transport Policy Committee that the Central Government was considering a scheme to regulate competition between road and rail by control of fares, routes, and traffic. Sir Benthall incidentally referred to the Nagpur report which recommends a road development plan of 400,000 miles for the whole of India and said that even though a portion of the target is aimed at, the volume of motor transport must inevitably be increased. New railway is to be constructed only where a road is unable to take care of the traffic adequately. It should come into existence where heavy traffic is to be developed; and will prove useful by bringing in industrial and general development of the country. The branch line projects which were looked upon as justifiable when bullock cart was commonly used, must yield to new transport system, characterised by motor lory and bus. Sir Edward Benthall further made it clear that the Centre and Provinces were agreed that co-ordination was necessary for public interest and that Provinces would regulate motor transport on the basis, defined by the Central Government with the agreement of the Provincial Governments. Sir Benthall is of the opinion that the construction of new main and branch railway lines will be comparatively slow—the Railway Board is working on a programme of about 500 miles of new lines per year. The principal objective of railway, it was indicated, would be the intensive development of traffic on the existing lines, so that it could provide for faster, better and, if possible, cheaper service to the people.

POST-WAR STABILISATION OF AGRICULTURAL PRICES

Agriculture in India has for several decades past been the Cinderella of our national economy, although the Government and the politicians alike have been lavish in verbal tributes to its importance. Committees and commissions, there have been galore; but for various reasons little has till now been done to give a helping hand to the helpless cultivator. Thanks to the war, certain factors have already begun to operate in favour of post-war prosperity for our agriculturists. Indian industrialists have now clearly understood that, if they should prosper and if their prosperity is to be maintained in the long run, the prosperity of the villagers must be assured. Agriculturists form a big market for the industrial manufactures. The British Government and foreign interests in India also agree that, if India is to be developed as a lucrative market, the problem of augmenting the purchasing power of the millions of villagers in India is of supreme importance. That is why we find to-day British interests, Indian interests which is to some extent a separate entity, the Government of India, all of them agree on the supreme necessity of rehabilitating Indian agriculture. The post-war agricultural plan placed before the country assures us that the days of laissez-faire with regard to agriculture shall be over and the Centre will take a more active part in directing provinces and States to keep agriculture on a safe and steady level. If the industrialist and urban interests can make much of their part in the war effort, the agriculturists' claim is not less but more than that. It is well-known that a huge majority of the Indian military personnel come from the villages. The raw materials and labour population to sustain the factories working for the war effort have come from our villages. As a result of the strain on Indian economy caused by wartime controls and administrative inefficiency, the villagers have suffered more than the urban interests. The galloping inflation, initiated a few years ago to keep wartime economy at a high tempo, have impinged upon the lives of the poorer classes; and the famine conditions in Bengal, South India and Rajputana are clear testimony to the sacrifice made by the rural and agricultural classes during these years of the present war.

Many are the reforms needed to pull the ryot out of his present plight. Land tenure has to be modernised, villagers have to be educated, their indebtedness reduced, more credit facilities given and improved methods of agriculture introduced. But in a capitalistic economy, price is a cardinal factor to bring in prosperity to the families of the cultivators; and if the Government can assure them of a fair and comparatively attractive prices for their produce, it can be safely asserted that this reform would redound to the advantage of other sectors of Indian economy as well. Five years of price control have revealed that the piecemeal and halfhearted measures of the Government of India have not really benefited the lower ranks of the village communities. During this war very often, and in almost every place, the prices of manufactures needed for comfortable living have gone far ahead of the price of foodgrains. Rural indebtedness might have been reduced, but the smaller cultivators have in several areas been uprooted and there has been a concentration of land into fewer and fewer hands. The war and all its consequences, therefore, have shaken Indian agriculture to its roots. The Policy Committee on Agriculture decided, in June 1944, that the question of helping Indian agriculture should be thoroughly investigated and suitable steps taken if post-war development plans are to take root and fructify.

The Government of India, therefore, deserves congratulations on the appointment of a sub-committee under Sir V. T. Krishnamachari which is charged with the task of going into the question of stabilisation of agricultural prices in post-war years. This committee is to consider (a) the principles on which producers' prices of agricultural produce, whether crops grown for industrial purposes or for food or the produce of animal husbandry of all descriptions, should be fixed and (b) the methods by which the fixed prices could be made effective and an assured market provided. The Committee would make recommendations in relation to the conditions expected to prevail in post-war India, (1) in which the Government control over the procurement, distribution and prices of commodities exist in a substantial measure and (2) in which such control has been released or abolished and normal trade channels restored. A fair price to the cultivator is an excellent desideratum no doubt, but the difficulties in the way of achieving the end are so many. Any scheme of stabilisation of agricultural prices shall be based on a thorough study of the cost of articles entering into the cultivator's cost of production and also the cost of commodities whose cost enter into his standard of living. This involves careful collection of data over wide and representative areas. Recently, Mr. Hudson made an announcement in the House of Commons that the policy of guaranteed prices and markets would be continued and that prices would be determined every February after an examination of farmers' costs. Fortunately, farming costs have been studied for many years past by the several advisory centres in the United Kingdom. In fact, recently, the collection of statistics extended further and covered numerous new items too. The British Government to-day have figures regarded as sufficient, comprehensive and representative to serve as a safe basis for an official price policy. Though, the considerations that will decide the prices to be fixed have not yet been decided, there is no doubt that the U. K. has enough data on which to go ahead with a programme of stabilisation of agricultural prices. But in India we know only too well that the farmer rarely keeps accounts, if at all. In this country agriculture is more a way of living than a business and the agricultural produce enters the market for sale only after meeting the requirements of the village cultivator and his family. In other words, it is generally the surplus that comes into the market and the ryot does not produce for the market as his sole object and the extreme fragmentation of agricultural holdings has made the position worse.

Another consideration to be borne in mind when agricultural prices are sought to be stabilised is the impact of international trade on Indian economy. Many agricultural commodities like oilseeds are governed by international prices and this intimate link with outside prices has its repercussions on Indian agriculture as well as non-agricultural prices. Wheat, rubber and tea are governed by international agreements. There cannot be a national and a local fixing of prices for items like these. Further, we have to be clear on another point: are we going to stabilise agricultural prices during a period of comparative prosperity or will there be the necessity to stabilise prices during a period of declining price level? It is wellknown that price stabilisation is easier during a period of rising prices than during periods of slump. Whether after this war India will be faced with a sharp decline in prices or whether the Government of India will do their best to increase production and keep prices at a stable level is still unknown.

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PROGRESS IN THE CHEMICAL INDUSTRIES

For the Chemical industry the principal event of the past year was the arrival of the Technical Mission connected with the Government's proposal to start a fertiliser plant. The Gowing Mission's findings and proposals have been examined, and a decision as to site has been reached. The Indian Chemical Manufacturer's separate problems arising from an increase in imports, coal and transport difficulties may be described as wholly familiar, but the branch of industry in which Control has worked well can also point to progress. The reports of some chemical manufacturing companies may be viewed as discouraging, but in other cases, profits have been substantial and the issue of bonus shares by the Bengal Chemical Co., last year marked the climax of achievements in one case.

The present situation in regard to soda ash, caustic soda, bleaching powder, etc., may suggest that locally much progress has been made. For war purposes particularly the production of sulphuric acid has increased and when fertiliser production begins on a large scale a very large increase is likely. India's production of sulphuric acid in 1943, amounted to 735,000 tons of which 19,720 tons went into fertiliser factories. Sulphuric acid requires sulphur and the main problem so far has been the shortage of sulphur imports for essential purposes. Though Sicily has been freed over a year ago, there has as yet been no recovery in imports. Baluchistan sulphur did not prove the stand-by, it was expected to be. India's requirements of sulphuric acid continue to exceed production because many auxiliary chemicals have to be obtained. Available capacity, even in out-of-date plants has been fully employed as acid cannot be carried easily. Additional plant is to be imported to raise present output to 105,000 tons per annum as against the prewar output of 26,000 tons.

The supply of an essential basic chemical has supported the development of the bichromates factories. But general shortage is still feared, and fertiliser production is made dependent upon gypsum rather than sulphuric acid in the future. Deposits of gypsum in Northern India are reckoned ample in relation to the needs. Fertiliser manufacture's by-products have received lately much notice and coke is now regarded as the pillar of the potential industry.

Sulphuric acid also finds its way into the textile and other industries which are likely to expand after the war. Increased use of acid for producing auxiliaries like nitric acid and hydrochloric acid is a feature of the industry; but some part of the acid, viz., 17 per cent, is consumed directly by the iron and steel industry which produces it.

While imports of caustic soda from Britain have only been obtained by special arrangement, the local manufacture has not stood still. In many industries, e.g., soap, paper and paint, caustic soda is referred to as a vital raw material and the branch of alkali manufacture also has made headway in India. The present output is estimated at 7,500 tons only and imports have supplemented the home production of three companies which got the benefit of high prices. Shortage of soda has held up the development of several industries and optimum consumption (put at 50,000 tons) would necessitate the setting up of several new plants. Though some paper mills produce their own chemicals as before, their difficulties regarding the essential chemicals account for the drop in paper production even under Control. Associated with the manufacture of caustic soda is the production of chlorine and bleaching powder. These are taken by the paper mills and public authorities. In this case the initial shortage was dealt with but imports remain essential. Home output is placed at 8,250 tons plus the 3,000 tons available from a new Government factory. Encouragement of production in this case coincided with the increase in caustic soda production. Chlorine is the basis of manufacture of fine chemicals and a surplus in the future may prove advantageous to India.

The ammonia-soda process is used for producing soda ash by three concerns in India. The output, however, will be below estimates of consumption. There is demand for 80,000 tons and the rebate on soda ash imported for glass-making is therefore retained. As salt and limestone are available further development is recommended in the case of soda ash particularly as ammonia sulphate may be available in a generous measure. Soda bicarbonte to the quantity of 4,800 tons is being produced, but in this case also imports have to be procured. Alum compounds manufactured in India have been insufficient in quantity though manufacturers of sulphuric acid have turned to the production of certain auxiliaries.

The difficulties of match factories have made generally known the uses of potassium chlorate. The fall in imports led to a scheme for independent local production (put at 1,500 tons per annum) under the auspices of the match industry. Though costs are high, and the postwar prospects are obscure, India now produces potassium chlorate and has the potassium nitrate which is refined to yield the former. Indian production of sodium sulphide so far has been regulated by the requirements of tanners and the cotton textile industry. Small factories have met only part of the demand though the raw material for the manufacture is obtainable from Rajputana. The salt lake and other deposits have been examined as future sources of materials for the chemical industry by the Geological Survey which is anxious to link up minerals with chemicals. Though India's exports of nitre fluctuate widely, the importance of potassium nitrate increases. India's output of 11,000 tons of saltpetre enjoys a regular market at home but its growth depends upon the success in refining and winning potassium chloride. Increased use for fertiliser-making is desired in India for many reasons.

On the outbreak of war bichromates appeared to be crucial and new factories sprang up for making sodium bichromate. The Indian manufacturer received protection in 1941 because the textile and tanning industries look upon the new chemical as vital. There are 12 factories with an estimated output of 250 tons per month but their production is equal to only half the total consumption. As chrome ore is at present available in Mysore and Baluchistan, the chemicals alone are important for new factories which can raise production and lower prices accordingly. The entire trade is controlled and zoning of supplies is the rule. After the war, export markets will be essential for the maintenance of the present output. At present, the U. P. produces more than any other province and the chief customer is the textile industry.

The production of fine chemicals and drugs in India has been regulated by the scale of imports as much as war needs. It is relatively undeveloped because coal-tar distillation is yet to begin. Beginning in regard to toluene, phenol etc., has been reported three years ago as the Supply Department regarded these as absolutely necessary. Derivatives like acetone are wanted for ordnance factories and some new factories have been set up. Glycerine manufacture by four soap-factories has been encouraged for war purposes. Estimated output of 1,500 tons is said to cover Indian requirements.

The iron and steel plants have produced besides sulphate of ammonia, certain chemicals from their own coking plants. The output of tar and cresote has risen steadily and research on dyestuff possibilities has begun on a commercial scale.

Increased use of Indian-made drugs and medicines is a direct consequence of the war. Apart from vegetable drugs and compounds, synthetics have been produced. The Director-General of the Indian Medical Service has been the chief agent in the development that has raised purchases in India from Rs. 15.8 lakhs to Rs. 3.48 crores in four years while the shortage of quinine is known the increase in Indian supplies is not equally known. Apart from shark liver oil, other sources of vitamins have been examined with success. About 70 percent of medical stores now used in India including anaesthetics are of local manufacture though sulfa drugs are not made and India has not attempted anything in regard to penicillin.

While private manufacture has not looked favourably upon the vast expansion of the Government's own stores department, the latter has become a big manufacturer of drugs and dressings. Private manufacturers have difficulties owing to excise regulations but the alcohol output has steadily risen. Apart from the beginning made in regard to power alcohol by some sugar mills, the Government has encouraged distilleries to produce alcohol. The response of private enterprise in this field has led to the formulation of demands concerned with the volume of imports which have risen this year owing to Government's desire to increase India's industrial production for civilian consumption. Enlargement of imports has led to the application of price control with success and the passing of the black market in medicines was an extraordinary event of the year attributable to the Ordinance designed to prevent hoarding and profiteering in regard to both indigenous and imported articles.

SECONDARY INDUSTRIES' SUCCESS

The rise of secondary, unprotected industries before the war demonstrated as much the potentialities of the Indian market in relation to consumer goods generally as the possibilities of encouraging local enterprise by a stores policy adapted to the requirements of industrial development. Since Germany and Japan have ceased to compete today it is possible that secondary industries which have been helped by specific duties in the past have found in wartime unusual opportunities though handicapped by lack of essential imports in some cases. The industries to which reference may be made are all older than the war, and not all of them have benefited to the same extent from the war. But the impression of prosperity through progress will remain since India's imports of soaps, paints, leather, glass and pottery have fallen during the war years and in regard to chemicals at least home production has acquired exceptional importance. In the field of smaller industries the usual comparison of profits by years cannot be made. The actual proportion of excess profits to standard earnings cannot be ascertained from the published company reports, and all that can be said about the quality and marketability of Indian-made goods must be found in the Trade Commissioners' advice as to foreign openings for Indian manufacture.

Secondary industries found a chance to develop when specific duties on Japanese goods were added to the tariff. The present emergency surcharge may have been as efficacious as import control in raising the proportion of Indian goods to foreign goods sold in India. For such industries as pottery, paint and glass, the availability of raw materials and the existence of the large home market have been long the decisive factors. What has been accomplished in regard to soap or paint may suggest that a revival of imports after the war cannot make much real difference to established Indian manufacturers. Though the disappearance of war orders will make much difference to the leather industries, it is apparent that foreign imports cannot reappear all at once, and the present controlled prices may stabilise both production and profit. In the Indian leather industry orders for millions of Army boots have expanded employment. Indeed it is believed that footwear will rank after textiles as a major industry. As the world's biggest producer of hides and skins, India can hope for a substantial export trade in addition to ample supplies for the leather industry. The assistance of the industry under control has been enlisted early and the regulation begins from the distribution of tanning materials. Though statistics cannot be cited the rise in Defence services' taking from 3.6 million pairs in 1941 to 6.6 million pairs in 1943 proves that production has risen. In the case of Cooper Allen day and night shift working (for 20 hours a day) has raised the output from 3,000 pairs to 19,000 pairs per diem. Another big company, the Bata Shoe Company is known to have doubled its prewar production. Exports are unnecessary for a shortage of footwear, and even of repairing materials, has been noticed and only a reduction in Defence purchases in 1944 has helped the civilian market. A vast increase in grindery follows the development of boot and shoe production. But survival of the ancillary industry in the absence of regular plant is uncertain. Harness and saddlery output also has increased in consequence of the war. In this case, too, Cawnpore is the focus and small manufacturers have been brought within the scope of war supplies. Postwar prospects must be related in this case to the apprehended shortage of leather in the world. A steady demand for footwear is anticipated but small manufacturers may experience difficulty when bigger factories cater for the civilian market again.

Prewar production of heavy chemicals including fertilisers (put at 30,000 tons per annum) reflected the industrial backwardness of India. Though natural protection was available for sulphuric acid, and important factories were planned before the war, India was sadly deficient in respect of chemicals. Since sulphuric acid production has risen as a result of the war, and the number of factories has increased, India is nearly self-sufficient. Auxiliary chemicals made from sulphuric acid have increased in number and quantity, though sulphur has had to be imported. Many industries have benefited greatly from the expansion of chemical output and the rise in sulphuric acid consumption from 16,690 tons to 73,500 tons in 1943 testifies to unusual progress. There is another branch in which production has risen. Caustic soda supplied may have to be supplemented by imports needed for an estimated consumption of 50,000 tons in India. The soap industry alone takes half the quantity and new factories for producing caustic soda are still needed. Serious difficulty in respect of bleaching powder and chlorine disappeared. It is presumed that a surplus for export will be available after the war in the case of chlorine. India is expected to produce more than half of the soda ash she may want as three major plants will provide 56,000 tons of soda ash per annum. If imports of soda bicarbonate are still wanted in India, there has been real success in regard to potassium chlorate. The match industry has set up its own source of supply and at present there are two factories producing potassimnum chlorate. A short fall in regard to alum compounds and sodium sulphide is a reason for control. Raw materials for manufacture in the case of both exist in India. The possibilities of refining saltpetre also have been canvassed. The manufacture of bichromates has received a great impetus from the war and twelve factories provide about half the quantity required. This branch of chemical manufacture is well distributed at present. Limited progress in regard to fine chemicals has been frequently described but the departure in production has been frequently referred to as also the beginning made in regard to coaltar distillation. Without receiving the protection originally recommended by the Tariff Board, heavy chemicals today are firmly established. Some products may lose a market after the war ends but the majority of essential chemicals will be available locally.

Though soap manufacture has suffered through shortage of rationed caustic soda four factories producing glycerine are favoured and India produces 130,000 tons as against the prewar estimate of 70,000 tons of soap. Before the war the soap industry was well set as it had at call vegetable oils and fats. Scap imports have fallen and consumption within the country has risen while the range of production has extended. Between the wars it rose by 250 per cent. According to one estimate a decrease has taken place owing to producers' difficulties, especially in 1942 and 1943. Be that as it may, the elimination of Japanese competition will assist the industry after the war as it has no special problems and can get its trained technical personnel from India.

The prewar production of paints and varnishes in India was put at 500,000 cwt, approximately equal to two-thirds of Indian consumption. As linseed oil is the chief requirement progress was unusual and only some requirements had to be imported. The present situation under Control reflects war demand. The first paint factory was started in 1902 and local production advanced steadily. Bombay and Calcutta are the centres of industry and the availability of barytes has led to the setting up of two new factories in South India. Camouflage paints have been made during the war and only essential articles for the manufacture of special types have been imported. Nevertheless, production in 1942 totalled 30,000 tons of which 80 per cent went for war purposes. Diversion of capacity for civil requirements will not represent a difficulty. India is believed to be capable of producing house paints, ship paints etc., as well as paints from synthetic resins.

India's glass industry is old but it failed to convince the Government that it had to be saved from competition. Dependent upon imported soda ash, it did not hold its own against imports though production rose by 250 per cent between the wars. The present war has changed all that and the range of products has greatly increased though the U. P. is still the chief producer of glass. Sheet glass is now made as well as hollow-ware Technical progress has been substantial and the cottage bangle industry has recovered vitality. Bottle factories have been kept busy and scientific glassware is being made along with bulbs for electric lamps. The fall in imports has stimulated production greatly, and postwar prospects have been assessed favourably though a limit to internal competition is imposed by conditions within the industry.

Though Indian clay found an application in the pottery industry only the common kinds of porcelain and electric insulators were made in India before the war. Japanese competition was very keen despite the growing efficiency of the Indian industry. While refractories, stoneware etc., were not challenged, the manufacturer of crockery had to withstand strenuous competition. When imports ceased, and military orders increased, the Indian manufacturer found his opportunity. In Bengal, Gwalior and Mysore production rose apace, and many new factories were established. Though quality has been missed, the manufacture of crockery has increased and if Japanese goods do not return it is possible that increased demand will be satisfied by Indian manufacture.

Much of the industrial progress rests undoubtedly upon technical and scientific research but the foregoing review is meant to illustrate merely the essential position of the smaller industries which have met the imperative needs of the Government successfully. Before the war they received no assistance from Government and during the war, they have encountered Control and adjusted themselves to the shortage of essential imports. Their part in the war effort must claim notice in relation to their apprehended difficulties.

POST-WAR DEVELOPMENT OF COMMERCE
BETWEEN INDIA AND THE UNITED STATES

By VERNON LEE WHITNEY
(Director, Standard Vacuum Oil Company)

It is my belief that that great collection of nations of nearly 400 millions of people, which we know as India, will have some form of completely autonomous, national government within a very few years after this war is ended. The measures by which this evolution will come about are wholly within the powers of the leaders of Indian political thought to develop by concerted action. Britain has declared her intention to put into effect any constitution framed by the Indians, even one including the right of secession from the British Commonwealth and Empire.

Most of the people of the United States will welcome the day on which the question of India's future Government is settled. In that we shall be no different from the great majority of our British allies, who want to see India governed by Indians just as Canada is governed by Canadians and Australia by Australians. This same majority of Britons is equally determined that this should come about by evolution and agreement among Indians, as I have indicated, and not by revolution and civil war. There is an historic background for this British attitude. Among the outstanding facts on the credit side of Britain's ledger for India—and, make no mistake about it, there are indeed many pages of these credits—is the establishment of internal peace out of centuries of chaotic racial and religious wars. There has been also the simultaneous planting and fostering of the ideals of human freedom and political liberty in India which have enabled her to grow to take her place among the free nations of the world.

As an American, speaking now from a purely selfish national standpoint, I trust that we shall see our ally of today—India—elect to remain within the orbit of the free, democratic nations, a free partner of the others of the British Commonwealth. A fact which the New York Times effectively pointed out in a recent editorial is that "Americans are just beginning to realize fully that national defense is something more than armaments. National defense is friends; national defense is loyal allies willing to fight against aggression in the face of tremendous odds if necessary." We want and need India as a friend. Likewise, India will need us and our other friends, the free nations of the British Commonwealth, as her close friends. In making this observation, I am none the less a confirmed believer that Indians should have the absolute right at the war's end to form their own national Government by agreement among themselves, either within or outside the British Comonwealth.

An optimist about the future political outlook for India, I am also one about the potential stability of the forthcoming national Indian Government. It is axiomatic that the greatest stimulus to development of ability is responsibility. The radical politician not infrequently turns into the moderate or even the conservative statesman once he has to carry the responsibility of Government on his own shoulders. That is what we may expect to see in India. Also, there are many thousands of Indians today who have had years of training for self-government while serving in scores of different official capacities in present district, provincial and central governments of the great sub-continent.

Another reason why we may expect to see a stable national government of India is that the vast majority of India's millions are a people who live in her 750,000 small towns and villages. Over many centuries the religious teachings of the majority of Indians have been on the side of non-aggression. Whatever views may be held about the practical statesmanship of Mr. Gandhi, there can be no question that his spiritual influence over the whole country has been very great indeed. His principles of non-violence have made a great and lasting impression upon the people as a whole.

If this has seemed an over-long preface to substantiate a belief that the post-war years offer opportunity for development of expanded trade between the United States and India, it is because it is important to stress that, without political stability, there cannot be trade with, or economic growth in, India. My reasons for believing that there will be post-war expansion of India's foreign trade and all-round economic growth—that there must be both—are based on the planning in India today by the Government and businessmen alike.

The present Government of India has organized a department for post-war planning which has set itself the task of working out the details for tremendous expansion in industry, agriculture, transportation facilities, and in schools and hospitals. The Viceroy, Lord Wavell, in a speech on February 17, 1944, to the Central Legislature at Delhi, made the following declaration of policy: "We must lift the poor man of India from poverty to security, from ill-health to vigour, from ignorance to understanding, and our rate of progress must no longer be at the bullock-cart standard, but at least at the pace of the handy and serviceable jeep."

Early this year a group of Indian industrialists also outlined their views in what has come to be known as the Bombay Plan. It drafts the agricultural and industrial development of India over a 15-year period following the end of the war. This plan carries an estimable program for improving the standard of living of the Indian people along the lines of the Viceroy's declaration. A specific aim is to ensure a daily ration for the individual adult which will have a caloric value of 2800. Although India is today essentially an agricultural country, where 11/12ths of the population live on the land, the food production under current methods is not sufficient to feed the population to anything like that extent. The Bombay plan proposes a substantial increase in Indian food production by enlarging the irrigated acreage, at a cost of about 1.5 billion dollars for canals, reservoirs, dams, wells and equipment. The Plan also envisages a scheme of co-operative farming, probably based on Russian methods. The statement reads: "In order that co-operative farming should come into vogue as early as possible, some measure of compulsion appears desirable."

Eventually the irrigation developments may offer scope for sale of American excavating and allied machinery; at present the Plan shows that the greater opportunities for American export would be in electrical appliances, machinery of all kinds, machine tools, in particular, plastics, and in the first years, motor cars and trucks. As the Plan calls for an increase of 20,000 miles of railways and 300,000 miles of roads (the Government Plan calls for 400,000 miles), there should be opportunity for considerable sales of American locomotives, other railway equipment, parts, and road-making equipment.

Capital expenditure anticipated for the first of the three five-year periods is $1.5 billions for basic industries and $900 million for consumer goods industries. The Bombay Plan says: "A substantial part of this capital will have to be spent in foreign countries for importing the necessary equipment which will not be available in India."

Expenditure contemplated for basic industries is $3.5 billions for the second period and $5.5 billions for the third five-year period. In both these periods it is expected that the outlay on consumer goods industries will be $1 billion. However, the planners expect that the equipment needed for the production of consumer goods in these latter two periods will be provided in a large part by India's own newly developed and growing basic industries.

Even were I competent to do so, it is not possible in the time at my disposal to analyze the ways and means suggested by the planners for financing their proposals. To delve very much further into details of the seemingly astronomical figures of the Bombay Plan would only complicate my presentation. The total expenditure in 15 years contemplated by the Bombay Plan is $30 billions, of which only $7 billions would be borrowed from foreign sources. By some standards of thinking, with which we are only too familiar, that total amount would scarcely be reckoned as anything very startling. But, in relative terms, it is a stupendous sum. In 1931, the last year for which comparative figures are available, the *per capita* annual national income in the United States was 22 times that of India. If the Bombay Plan is sound, proportionately, the United States could plan on an expenditure for economic development of $44 billions per annum over the next 15 years! Setting out the relatively huge sums planned for spending by India and making the above comparisons does not imply that the Plan will be unworkable although it may not be possible to carry it out in full. The figures seem to me to emphasize the vision of the planners and to bring out what the potential trade developments with India might be.

In all fairness to the authors of the Bombay Plan, it should be pointed out that they make no claims to infallibility or prescience. They modestly indicate that they are discussing broad aims and the fundamental aspects of planning only in order to stimulate criticism of their proposals and to aid in making detailed plans. They deserve well of their country for in this they have succeeded.

One of the Bombay Plan's authors, Sir Ardeshir Dalal, of the famous Indian firm of Tatas, has been appointed by the Viceroy as the Minister in Charge of the Indian Government's Department of Post-War Planning. This is most significant in that he will be responsible for developing the details to be fitted into the broad outlines of the planning for India's economic future. It demonstrates that most of the responsible

thinking in India about the country's future is along parallel lines. It is a hopeful augury for the future of India that the British Viceroy and the Government of India of today on one hand, and a group of Indian industrial leaders on the other hand, some of whom are reported to have been financial backers of the Indian Congress Party over many years, should be found planning so nearly alike to improve the lot of the common man of India. Their efforts prove that at least he is not to become the forgotten man.

The success of what all these men develop during the rest of the war and in the period immediately following, will depend most upon stability in the exchanges of world currencies. So also will depend, of course, the potential expansion of two-way trade between the United States and India. Although very much a layman in financial matters, I consider it imperative that the United Nations reach an agreement on this relatively simple fundamental point. Certainly the stabilization is necessary as between us and our British Empire allies, or else Bombay or other economic plans, expansion of Indian and American trade, or even the establishment of the future world peace, must go overboard. If the peoples and governments of the United Nations cannot work out successful plans about the exchange to which trade is completely tied aren't we ineffectively expending our time and energy in making plans about the infinitely greater problem of world peace?

Involved in this problem of monetary exchange and in the development of American trade with India, is this question: What use will India be able to make of the sterling balances which have been built up in London by Britain's assumption of the full amount of India's war expenditures outside the country? Britain will have neither goods nor cash at the war's end to liquidate this obligation in full. Therefore, this tremendous sum (now standing at the equivalent of $4 billions) could not be used to carry out either the Bombay or the Indian Government Post-War Plan.

Indian statesmen, industrialists, and officials of the present government are substantially in accord in demanding India's right to spend her sterling credits where she will.

This whole question must eventually become another matter for compromise and multilateral agreement in the settlement of the fundamental problem of exchange. The London Economist has endeavoured to make the point that the United Nations, of which India is to be reckoned as one, have prevented the overrunning of India by the Japanese; therefore, India must not expect to get off financially scot-free and she should not expect to be paid in the full amount of her sterling credits. Whatever one's views might be on that argument, India's exchequer has profited to some considerable extent from income and excess profits taxes from Indian industries engaged in war production simultaneously with the building up of her sterling credits in London.

As an important step in this direction, I suggest that the National Foreign Trade Council set up a committee on India to aid in the exchange of factual information with similar Indian and British commercial organizations in India.

I would like also to see the National Foreign Trade Council put itself on record as favoring the passage of the bills before Congress to put immigration from India to this country on the same basis as was recently done for the Chinese.

This is a simple act of justice due to the Indian people on ethical grounds and entirely apart from the reason advanced in some quarters that we ought to do it on account of the magnificent achievements of the gallant Indian Army or of those millions of Indian civilians who have toiled in the production of great quantities of war materials and in the building of hundreds of air fields for the American and other Allied Forces. Fundamentally, there is, I repeat, the injustice of treating Indians on any basis different from that accorded other peoples. We Americans go to India, live there, leave when we are ready, and return when we feel like it. Let's permit them to enjoy the same treatment.

On the other side of the picture, I make a plea to Indian statesmen and business leaders to consider the pitfalls inherent in any system carrying too great control of their country's economy by the state. It is suggested also that they should refrain from creating any further growth of distrust of the people of the western world because of past grievances, real or imagined, about "economic bondage" and "exploitation". It has never been any part of broad American business policy to carry on trade with India or any other part of the world except on mutually advantageous terms.

If we are going to go forward together into a peaceful world, it is time, I think, for us all Indians, Russians, British, Chinese and Americans to dwell in our thoughts and speech upon the tremendous advantages which we have all had from our mutual relationships over recent years, rather than on past misunderstandings. The value of doing so will be infinitely easier for all of us to comprehend and appreciate once the Nazi and Japanese beasts have been finally struck down by our common efforts. Then we shall have time to contemplate the horror we have escaped through co-operation and understanding.

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A PLAN OF ECONOMIC DEVELOPMENT FOR INDIA

PART II*

INTRODUCTORY

Our first memorandum dealt chiefly with the problem of production. Both logically and as a matter of practical necessity, the question of production must come before that of distribution in a plan of economic development. This is because in a country of comparatively low production such as India, no system of distribution, however meticulously framed, will help to raise the standard of living unless production is vastly increased. But it does not follow that increased production will necessarily remedy the problem of poverty if it is not based on a proper system of distribution. The present memorandum sets out our views regarding distribution and also the allied question of the part to be assigned to the State in a planned economy.

2. Our approach to these problems is two-fold. On the one hand, we recognize that the existing economic organization, based on private enterprise and ownership, has failed to bring about a satisfactory distribution of the national income. On the other hand, we feel that, in spite of its admitted shortcomings, it possesses certain features which have stood the test of time and have enduring achievements to their credit. While it would be unwise to blind ourselves to the obvious weaknesses of the present system, we think it would be equally a mistake to uproot an organization which has worked with a fair measure of success in several directions.

3. Briefly, we plan for change but we also plan for stability and orderly development. It is our firm belief that if the future economic structure of the country is to function effectively, it must be based on these twin foundations. It must provide for free enterprise but enterprise which is truly enterprising and not a mere cloak for sluggish acquisitiveness. It must ensure at the same time that the fruits of enterprise and labour are fairly apportioned among all who contribute to them and not unjustly withheld by a few from the many.

II

DISTRIBUTION OF THE NATIONAL INCOME

4. The primary object of the plan of economic development outlined in the previous memorandum is to improve the standard of living of the masses. In fact, increased production will be meaningless unless it is directed towards the eradication of poverty. An improvement in the general standard of living involves both increased production and equitable distribution and although we have dealt with them separately, they are closely interrelated and react on each other.

5. At present our production is very small and it is not equitably distributed. The average *per capita* income of Rs. 65 in 1931-32, to which we have referred in our first memorandum, is an arithmetical average which bears little relation to the income realized by the majority of the population, which must be considerably below this figure. The *per capita* average itself varies from Rs. 51 to Rs. 166 in rural and urban areas respectively. In 1931-32, one half of the total urban income was in the hands of less than 10 per cent of urban workers and "even among the comparatively well-to-do class, whose annual incomes exceed Rs. 2,000 a year, 38 per cent of their number could claim only 17 per cent of their total income, while a little more than 1 per cent were in possession of as much as 10 per cent of their total income . In rural areas, the income of the majority of the people must have been less than the average of 51 rupees. This is because farmers holding less than 2 acres of land form a large proportion of the cultivating class. Moreover, the agricultural labourer, whose wage is sometimes as low as 2 to 3 annas a day, and the cultivator are generally without any work for 3 to 6 months in the year. The increase in population since 1931 must have considerably increased the pressure on this class.

6. In so far as the volume and nature of production are ultimately determined by the consumer demand, gross inequalities in income tend to retard the development of a country's economic resources. They prevent the needs of the vast majority of the population from exercising any influence on the volume of production, which has naturally to be restricted, and lead to social cleavages and disharmony. Productive resources under these conditions tend to be devoted to satisfying the demands of the well-to-do classes while large numbers of people remain inadequately fed, clothed, housed, educated and medically cared for. The large increase in production which is postulated in the plan will be difficult to achieve if the present disparities in income are allowed to persist. To this extent, therefore, equitable distribution is necessarily implied in a plan for increased production. A policy which specifically aims at securing this object should have a double purpose: (i) to secure to every person a minimum income essential for a reasonable standard of living and (ii) to prevent gross inequalities in the incomes of different classes and individuals.

7. Concentration of the means of production in the hands of a small group of people has been considered one of the potent causes of the inequalities of income which prevail in the world at present, as it is also to some extent an incidental result of such inequalities. In the U. K. for example, it is estimated that 1 per cent of the persons above 25 derive from their property rights about 20 per cent of the total income of the country. "Unequal distribution of incomes from property makes for unequal distribution of incomes as a whole, not only directly through its existence, but also indirectly through its effect on other incomes". To secure an equitable distribution of income, it is therefore necessary gradually to reduce the existing inequalities of wealth and property and to decentralize the ownership of the means of production. Imposition of death duties and other similar levies, if undertaken, in pursuance of well defined social objectives, by a government fully responsible to the people, would contribute towards achieving the first object. Reform of the system of land tenures which we suggest would further help progress in the same direction. In the sphere of industry, we have already indicated in our previous memorandum that the fullest possible scope should be provided for small scale and cottage industries, particularly in the production of consumption goods. The process of decentralization would be further advanced by encouraging the widespread distribution of shares in joint stock companies, by regional distribution of industries and through the development of co-operative enterprises. Control by the State, accompanied in appropriate cases by State ownership or management of public utilities, basic industries, etc, will also tend to diminish inequalities of income.

8. It is necessary, however, to make clear that although gross inequalities are undesirable, total abolition of inequalities, even if feasible, would not be in the interest of the country. Subject to the provision of a basic minimum, it is desirable to leave enough scope for variations in income according to ability and productivity. This will provide the necessary incentive for improvement in efficiency which is an important factor in the progress of a planned economy. Even in Soviet Russia, after the first flush of enthusiasm for the equalitarian ideal had passed, variations in industrial incomes have been allowed as an important motivating factor making for efficiency. The encouragement given to *Stakhanovism* is an indication of the change that is rapidly coming about. There is much force in what Lord Keynes says on the point: "I believe that there is social and psychological justification for significant inequalities of incomes and wealth, but not for such large disparities as exist to-day. There are valuable human activities which require the motive of money making and the environment of private wealth ownership for their full fruition. Moreover, dangerous human proclivities can be canalised into comparatively harmless channels by the existence of opportunities for money making and private wealth, which, if they cannot be satisfied in this way, may find their outlet in cruelty, the reckless pursuit of personal power and authority, and other forms of self-aggrandisement".†

9. Side by side with the decentralization of production, and control, ownership or management of public utilities and basic industries by the State, it is also necessary to adjust the rewards of the various factors of production so as to further the reduction of gross inequalities. As a general rule, these rewards, *viz.*, wages, interest and profits, should continue to be determined on the basis of demand and efficiency as at present, subject to the overriding consideration that wages should not fall below a certain minimum and that interest rates should be controlled with a view to maintaining full employment. Profits should be kept within limits through fixation of prices, restriction of dividends, taxation, etc.

*By Sir Purshotamdas Thakurdas, J. R. D. Tata, G. D. Birla, Sir Shri Ram, Kasturbhai Lalbhai, A. D. Shroff and John Matthai.

†The General Theory of Employment, Interest and Money, p. 374.

Part I, appeared in *Indian Finance Annual*, 1943.

But care should be taken to leave sufficient incentive for improvement in efficiency and expansion of production.

10. To secure a minimum standard of living we propose two classes of measures: (i) those that would raise the general level of income and (ii) those that would reduce the burden of individual expenditure on consumption goods and services, i.e., the cost of living.

11. The measures which we have in view for increasing the general level of income and which we explain in more detail in the paragraphs that follow are:

(i) provision of full employment,

(ii) increase in efficiency,

(iii) improvement in urban and rural wages,

(iv) security of agricultural prices and development of multi-purpose co-operative societies, and

(v) reform of the land system.

FULL EMPLOYMENT

12. Of all the measures that we suggest for raising the general level of income in India, provision of fuller scope for employment is the most important. Although no reliable information regarding the extent of unemployment or under-employment in this country is available, it is recognized that lack of employment is one of the major causes of the poverty of our people. Provision of full employment for the working part of the population would no doubt present formidable difficulties but without it the establishment of a decent standard of living would remain merely a pious hope. "If the giant Idleness can be destroyed, all the other aims of reconstruction come within reach. If not, they are out of reach in any serious sense and their formal achievement is futile".* In general terms, provision of full employment means ensuring for every grown up person suitable opportunities for earning his or her livelihood, that is, a recognition of the individual's right to work, increased mobility of labour being an essential condition for achieving this object.

EMPLOYMENT IN INDUSTRY

13. We expect that the industrial expansion which we have suggested in our previous memorandum will absorb a considerable part of the working population when the plan is completed. In order that the new industries which would be established in the country should provide the maximum volume of employment, we have suggested a comparatively low ratio of capital intensification, i.e., a smaller proportion of capital per worker than is usually met with in industrialized countries, and the fullest possible development of small scale and cottage industries. In this respect India will do well to take a leaf from the experience of Japan, where, as in India, labour is comparatively plentiful and capital scarce. Statistical investigations show that about one half of the persons employed in the manufacturing industry of Japan in 1930 were in workplaces employing under 5 persons each and about 70 per cent were in workplaces employing under 50 persons. According to information compiled by the Ministry of Commerce and Industry, workplaces employing between 5 and 30 workers accounted for 29 per cent of the employment and 19 per cent of the output in manufacturing industry. The industrial co-operatives which have been recently developed in China might also prove a useful guide to India in this respect. Besides employment in industries, a large part of the population will be absorbed in trade and other services, which will necessarily increase in the wake of increased production and rising standards of living. And yet this will barely touch the problem of 'disguised unemployment' in agriculture which is the crux of the situation.

SEASONAL UNEMPLOYMENT IN AGRICULTURE

14. The agriculturist and the agricultural labourer are generally without work for periods extending from 3 to 6 months in the year at present. This unemployment occurs at intervals and is of a seasonal character. Provision of work during these periods of seasonal unemployment is of paramount importance if a policy of full employment is to be successful. The steps which we contemplate for achieving this object are: (i) introduction of mixed farming, i.e., cultivation accompanied by dairy farming, market gardening, etc, (ii) cultivation of more than one crop in a year with the help of better irrigation facilities and increased use of manures, and (iii) provision of subsidiary industries which the cultivator can take up when he has no work on the farm. Among such subsidiary industries may be mentioned the following: spinning and weaving, shoe making, paper making, tanning, gur making, soap making, oil crushing, fruit preserving, basket weaving, flour and starch making, etc.

OCCUPATIONAL DISTRIBUTION

15. The pattern of occupational distribution when the plan is completed would naturally be different from what it is to-day. Even where complete statistical data regarding existing occupational distribution and future demographic trends are available, it is difficult to forecast, with reasonable accuracy, the nature of the occupational pattern that might develop after a period of fifteen to twenty years. For India this is specially difficult because the occupational tables for the 1941 census are not yet published. Some indication, however, of the occupational pattern that will result when the plan is completed may be attempted on certain broad assumptions. We assume that the proportion of population engaged in different occupations when the plan begins to operate will be the same as in 1931 and that our population may continue to increase at the rate of five million per annum, which is the average rate of increase for the decade covered by the 1941 census. The volume of employment in industry, which the investment programme envisaged in the plan would provide, is calculated on the basis of a capital equipment of Rs. 1,500 per worker and is added to the number of persons employed in industry in 1947 when the plan might come into operation. This ratio of capital equipment per worker seems reasonable if allowance is made for the fact that small scale industries would have an important scope in the economic development of the country and that adoption of shift working would be necessary with a view to economizing capital and providing as much employment as possible. According to the 1931 census, the number of persons employed in services such as public administration, trade, transport, professions, etc., was 80 per cent of that in industry. The development of social services like education and public health on the scale suggested in the plan and the needs of general administration and defence would, on the completion of the plan, absorb a much larger number of people in services than at present. The general economic development of the country would also lead to a substantial increase in trade and transport. However, since the development in services which we have postulated in our previous memorandum is proportionately much less than in industries, it is reasonable to assume that the total employment in services when the plan is completed would be about 60 per cent of that in industry. The rest of the population would be dependent on agriculture. On these assumptions, the distribution of working population according to the principal occupations in 1962, that is, in the year following the completion of the plan, would be somewhat as follows as compared with that in 1931.

Occupational Distribution in 1931 & 1962

	millions	per cent	millions	per cent
Agriculture	106.3	72	129.7	58
Industry	22.1	15	57.9	26
Services†	19.2	13	34.7	16
Total working population ..	147.6	100	222.3	100
Total population ..	338.1	..	494.0	..

GAPS IN EMPLOYMENT POLICY

16. It should not be forgotten that a policy of full employment, even if successfully carried out, does not necessarily imply in practice that every person willing to work is always employed. In the first place, due to the inherent imperfections in the working of a social policy, which has to take into account a number of incalculable factors, a small percentage of population will always be without work. Secondly, certain trades like the building trade, being seasonal in character, give rise to seasonal unemployment. Finally, due to changes in the technique of production and to variations in demand, large numbers of employed workers are constantly being displaced. The number of persons who would be without work at any particular time owing to these causes could, however, be reduced to manageable dimensions if a well thought out policy of employment was in existence. When the plan is sufficiently advanced and economic conditions are to a certain extent stabilized, it ought to be possible to devise schemes of relief like unemployment insurance for workers subject to unexpected and prolonged periods of unemployment. The government's public works programme, in respect of both new construction and repairs, should be regulated with a view to reducing the volume of seasonal and temporary unemployment. For those who are unemployed because of technological changes, suitable courses of training to fit them for new jobs should be framed. We believe that during the progress of the plan the amount of construction work, which

*Sir William Beveridge: Pillars of Security Page 43.

†This category includes trade, transport, government administration, professions and domestic service. Persons living on their own income or engaged in unproductive occupations, whose number was 18 lacs in 1931, are also added to this category for the sake of convenience.

the investment programme would involve, would itself provide a very substantial increase in the scope for employment.

17. As a result of the spread of general and technical education among workers, better organization of industries, especially small scale and cottage industries, better organization of agriculture and trade, fuller use of cattle power, provision of cheap electricity, improved tools and appliances and fertilizers, etc., the general efficiency of production is bound to record a marked improvement at the end of the planning period. Under a system of decentralized production, the benefits of higher efficiency will be increasingly available to the smaller producer and the worker in the form of a corresponding increase in their incomes. Since a higher standard of living arises largely from increased productivity of labour, improvement in efficiency of production is a material factor in raising the general level of well being.

URBAN AND RURAL WAGES

18. If every person is to be assured a minimum standard of living, it automatically follows that the general level of wages must increase and that the wage rates of industrial and agricultural labour must be gradually adjusted so that the present disparity between them is reduced. The process of improvement must necessarily begin with the wages of agricultural labourers whose number was 30 million in 1931. It must be borne in mind that industrial wages and with them the living standards of industrial workers cannot be advanced beyond a certain limit unless at the same time the standard of living of the rural population is also substantially improved. Generally speaking, the daily wages of agricultural labour under pre-war conditions may be said to range from 2 to 5 annas a day for men, 1½ to 4 annas for women and 1 to 2 annas for children. The average wage of unskilled agricultural labour in 1939 was 5 annas per day in the Bombay province and 2 annas 9 pies per day in the U. P. Even at these low rates the agricultural labourer hardly found employment all the year round. Obviously, a number of these workers exist below the subsistence level, always an easy prey to epidemics and famines. When the developments in agriculture which we have broadly indicated in our previous memorandum have taken place and the reforms in the land system which we suggest elsewhere in this memorandum have been carried out, it will be necessary to fix minimum rates of wages for agricultural labour on a regional or local basis. With the development of co-operative farming, the enforcement of minimum agricultural wages, which otherwise might present formidable obstacles, would become less difficult.

MINIMUM WAGE

19. Although the establishment of a basic minimum wage for all occupations cannot be considered at this stage, a beginning may be made in certain well established industries like cotton, textile, sugar, cement, engineering, jute, mining, etc. In the initial stages, the minimum below which wages should not be allowed to fall should be related to the normal wage level prevailing in each industry. The minimum should be revised from time to time till it corresponds with a reasonable standard of living. The fixation of a minimum wage and its subsequent revision should be entrusted to a standing committee constituted for each industry consisting of representatives of employers and workers and a few independent persons.

AGRICULTURAL PRICES

20. Large fluctuations in the prices of agricultural commodities have been among the most important factors which have prevented agriculturists from making more sustained efforts to improve the yield of the land. To check these fluctuations in future and to assure to the cultivator a measure of security in respect of the prices of his crop, we suggest that, for the principal agricultural crops, the government should adopt a policy of fixing fair prices. In fixing a fair price, account should be taken of the cost of living in the area concerned as well as the cost of production. It would be necessary for enforcing these prices to build up adequate commodity reserves which could be utilized to check violent fluctuations. To prevent a depression in the prices of specific agricultural commodities as a result of foreign imports, the volume of imports should be regulated by means of tariffs or by fixing quotas. It is possible that a large variety of agricultural crops may in future be subject to international agreements. Such agreements, provided, in respect of them, India is accorded representation on an independent footing, may be expected to lead to a fair measure of stability at a reasonable level in the prices of some of our staple crops.

CO-OPERATIVE SOCIETIES

21. Another factor which prevents the cultivator from improving his output and consequently his income is that, because of the handicaps which he suffers in respect of the marketing of his crop, his realisations fall considerably short of the prices which he might otherwise secure. There are several reasons for the large differences observed in respect of most of our agricultural crops between the price paid by the consumer or exporter and the price realised by the cultivator. As the holding power of the cultivator is generally small, he has to part with his crop almost immediately it is harvested and it is well known that prices during harvest time are at their lowest, except, of course, in times of abnormal demand. Very often, the purchaser is the money lender himself to whom the crop is sold under a tacit understanding, previously entered into, at what is generally an uneconomic rate for the cultivator. Only a small proportion of the cultivators take their produce to the marketing centres for sale. In most cases, for lack of adequate facilities for storage and finance, it is sold in the village itself, which prevents the cultivator from securing a better price. If multi-purpose co-operative societies are established, the difficulties which the cultivator is experiencing at present in marketing his crop, particularly in the matter of adequate finance and storage facilities, would be removed and his share in the price paid by the final consumer increased. Special attention should therefore be devoted to this type of society which so far appears to have found little encouragement in the Indian co-operative movement. Development of communications, standardisation of weights and measures, regulation of markets, spread of commercial intelligence, etc., would further help the primary producer to realise his due share of the price.

LAND TENURES

22. Along with the development of co-operative farming and irrigation, prevention of soil erosion and of water logging, afforestation, etc., a fundamental reform which is necessary if the target for agricultural production which we have laid down is to be reached and if the income of the cultivator is to be raised is the reform of the land system. Ownership of the land and its taxation, that is, land tenure and land revenue, are the two principal problems which require to be tackled in this connection. As regards ownership, the systems of land tenure which prevail in India to-day can be roughly classified under three categories, *viz.*, (i) the *ryotwari* system under which land is held directly under the government by individual cultivators who are responsible for the payment of land revenue, (ii) the *mahalwari* or joint village system under which village estates are held by co-sharing bodies, the members of which are treated as jointly and severally liable for the land revenue and (iii) the *zamindari* system under which one person or a few joint owners hold the land and are responsible for the payment of land revenue on the whole estate. The last two categories are essentially similar in character. According to whether the revenue is fixed permanently or is amenable to periodic revisions, the land tenure system is also classified as permanent and temporary, but that is not relevant from our point of view. The area under the ryotwari and the zamindari and mahalwari systems in British India is shown below:

	Thousand acres	Per cent
Zamindari and Mahalwari ..	326,998	64
Ryotwari	183,034	36
Total ..	510,032	100

Farming in India is predominantly tenancy farming. Most of the cultivators are tenant farmers who acquire land on lease from the zamindars or bigger ryots on payment of rent. In this connection it is necessary to realise that all the land held under the zamindari system is not, as is sometimes contended, let out for cultivation to tenant farmers, nor is all the land held under the ryotwari system cultivated by peasant proprietors. In the United Provinces for instance, which is a zamindari province, as much as one-fifth of the total cultivated area of 35 million acres is cultivated by the landowners themselves. On the other hand, in the Punjab, which is mainly a land of peasant proprietors, the western part of the province is the stronghold of the landlord and the landlord is too often an absentee. Contrary to the common belief, the actual cultivator under the zamindari system, who in the large majority of cases is the occupancy tenant, is for all practical purposes the proprietor of the land he cultivates. His rent is fixed save to the very limited extent to which enhancement is possible under certain conditions: his holding is both heritable and transferable. The various tenancy acts have in effect deprived the zamindar of a considerable part of his proprietary right over the soil and rendered him to that extent a mere collector of rent. Similarly, the incidence of rent under the zamindari system often compares favourably with rents prevailing in the ryotwari areas.

RYOTWARI SYSTEM

23. As a general proposition it is nevertheless true that under the zamindari system the landlord has largely become a mere rentier and that the system as such has ceased to serve any national interest. Nowhere in India has the system created, as was expected of it, a class of landlords willing to supply capital for the improvement

of the land and the extension of cultivation. Although the ryotwari system is not altogether free from the evils commonly associated with the zamindari system, it has the great advantage of bringing the actual cultivator directly in contact with the State. This gives to the cultivator a better status and awakens the State to its responsibilities in the matter of co-operative farming, irrigation, prevention of soil erosion, etc., without which even under a ryotwari system no agricultural improvement would be possible. The Floud Commission which recently reported on the land revenue system of Bengal has after a thorough examination of the question recommended the introduction of the ryotwari system in the place of the existing zamindari tenures. We suggest the gradual application of this recommendation to the zamindari areas in the whole of India, where the landlord is not directly interested in the cultivation of the land he owns. As a first step, "the State should take over the landlord's functions and pay the landlord a fair rent for the land, deducting therefrom the expenses incidental to the discharge of these duties. Later on, when the State is in a better position, this may be commuted into a lump sum payment and the landlord's claim thus finally extinguished. For the immediate present, 'the link between the landlord and the tenant should be broken'". Side by side, it would also be necessary to check the transfer of land from cultivators to non-cultivators and to control rents with a view to reducing the attractiveness of land to speculative investors.

LAND REVENUE

24. Along with the establishment of a class of peasant proprietors, an urgent reform of the system of land revenue is also called for. At present the assessment of land revenue is not based on a uniform system. In certain areas the basis of assessment is rent while in others it is the net produce. There is also no provision for introducing variations in assessment according to price changes, while at the same time the settlement officers who assess the revenue have the discretion to modify the basic principles by introducing a number of miscellaneous considerations. As a result, the incidence of land revenue shows marked variations in different areas. It is also fairly heavy. The reform of the present system would therefore lie mainly in the direction of making the basis of assessment uniform all over the country, so as to secure equality in the incidence of revenue, while retaining a certain measure of elasticity by a provision to vary the assessment from time to time in accordance with the trend of prices. The pitch of assessment should also be lowered. The general trend in other countries is to treat agricultural incomes in the same fashion as other incomes and to apply to them the principles of income tax—an exemption limit and a graduated scale of taxation. It is hardly possible at the present stage to determine how far it would be practicable, in the exigencies of public finance, to fix an exemption limit for agricultural income. But we consider that agricultural income above a certain level must be subject to income tax like other incomes. This has already been done in Bihar and Bengal.

INCOME DISTRIBUTION IN 1962

25. As a result of the measures indicated above, the lower incomes would record a steady improvement and consequently the income structure of the country would be more broad-based. For individual earners this improvement would arise from increased output as well as better prices. The cumulative effect of the measures proposed on the incomes of the different occupational classes is roughly indicated in the table given below. The table is based on the occupational pattern given in paragraph 15 and on the estimated income from agriculture, industry and services at the end of the plan. It is assumed that persons following agriculture as their principal occupation would also secure, through subsidiary occupations, 5 per cent of the income from industry and services.

AVERAGE INCOME PER OCCUPIED PERSON

	1931	1962	Increase per cent
Agriculture ..	114	220	93
Industry ..	161	368	129
Services ..	264	397	50

26. The suggestions made so far are calculated to increase the incomes of those who are at present below the subsistence level. The measures which we propose for reducing the cost of living fall into two categories:

(i) provision of free social services, *e.g.*, primary and middle school education, adult education and medical treatment; and

(ii) provision of essential utility services, *e.g.*, electricity and transport at low costs.

FREE SOCIAL SERVICES

27. In our previous memorandum we have proposed a comprehensive scheme of education and medical relief. In order that every person, whatever his means, should be able to secure the benefits of education and medical relief, we have suggested that primary, middle school and adult education and medical treatment, both in rural dispensaries and in hospitals, should be provided free of charge. This would mean a considerable relief in the cost of living.

UTILITY SERVICES

28. At present essential utility services such as electricity, gas, transport, etc, are suplied on a comparatively limited scale and for the majority of people at a cost which they cannot afford. We have proposed a large increase in the supply of these services and it is an essential part of our plan that their cost to the consumer, both for domestic use and for cottage and rural industries, should be as low as possible and within the means of the bulk of the population. In order to achive this object, we propose that these services should be subsidized by the State to such extent as may be necessary and that the margin of profit in such services should be subjected to control.

NATIONAL RELIEF FUND

29. It is possible that in spite of these measures, due to unforeseen causes such as a failure of the monsoon or any other natural calamity, conditions of living for large sections of the population may suffer a serious setback. To meet such emergencies, we suggest the creation of a *national relief fund* on the lines of the present famine relief fund, but larger in resources and in scope, to be utilized as and when the need arises. A part of this fund should be held in the form of consumption goods which could be mobilized for instantaneous relief in times of emergency.

SOCIAL SECURITY

30. We are aware that our proposals do not constitute a complete scheme for providing security of income or freedom from want, which must be the ultimate objective of economic planning. There are several contingencies such as sickness, old age, technological unemployment, etc, which are not specifically covered by these proposals. These contingencies cannot be met except by a comprehensive scheme of social insurance. Although the need for such a scheme is urgently felt in India, we do not think that it will be possible to introduce it until (*i*) a policy of full employment has had time to work itself out and some approximation is made to a position of stable employment for the greater part of the population, i.e., until the risks insurable are reduced to manageable proportions, and until (*ii*) the average individual income has risen sufficiently to meet the contributions necessary under a scheme of insurance. We, however, suggest that as in the case of fixing a minimum wage, a beginning in the direction of social insurance may be made by introducing sickness insurance and holidays with pay for workers in organized industries. The scope of the existing legislation in respect of maternity benefits should also be widened by making it applicable to all industrial establishments coming under the Factories' Act in the whole of India.

TAXATION OF INCOMES

31. The policy we have outlined so far is mainly intended to secure the first objective of an equitable distribution of national income, *viz.*, to assure to every person a minimum standard of living. To a considerable extent it will also help to reduce gross inequalities of income, which is the second objective. The most direct taxation, which in effect transfers income from the comparatively richer classes of society to the poorer. A steeply graduated income-tax, which would keep personal incomes within limits, would obviously be the most important weapon for this purpose in the fiscal armoury of the country. But in any such scheme of taxation, consistently with the development programme envisaged in the plan, it is necessary to emphasize that adequate remission should be granted in respect of the depreciation of the assets employed in production and that incomes ploughed back for increasing industrial or agricultural production should also be granted similar remission. Further, in the taxation of personal incomes, distinction should be made between earned and unearned income, so as to make the latter taxable at a higher rate. As a means of correcting the existing inequalities of wealth, the device of death duties, which has been successfuly utilized in other countries, might also be adopted. The advisability of taxing inherited estates more severely at the second and later transfers than at the first would be a further step in the same direction. It is obvious that India's fiscal system will have to place more and more reliance on direct taxation in future if the increase in the cost of administration, which planning will involve, is to be met and if provision is to be made for free social services like education, medical treatment, etc. and subsidies for essential utility services.

REGIONAL DEVELOPMENT

32. Throughout our investigations we have assumed that a programme of economic development of the kind we envisage should include the whole of India—the States as well as British India—in its scope. A territorially unbalanced economy will result in an imperfect utilization of the country's resources and also prevent its purchasing power from developing *pari passu* with the estimated increase in production. Not merely in the matter of industrialization, but in almost every other line of development covered by our plan, the States, with certain notable exceptions, have tended to lag behind most parts of British India. We consider it a matter of the greatest importance for the future of India that economic progress should be so planned that, as far as circumstances permit, the targets as well as the pace fixed for the plan should have uniform application to British India and to the States. The objectives we have outlined are of equal importance to both and, further the development of each is to a large extent conditioned by that of the other. It follows therefore that if a plan of economic development for India is to achieve its aim to any tangible extent, it should proceed on the principle that, in the results it seeks to achieve and consequently in the sacrifices it demands, British India and the States should share alike. Although the States represent two-fifths of the territory and one-fourth of the population of India, it must be recognized that industrial investment in the States, as also in backward areas in British India, remains disproportionately low. It is clear therefore that there is much lee-way to be made up. Unless this disparity is remedied, a proper regional distribution of economic development will be difficult to secure. Meanwhile, any unequal distribution of financial burdens between manufacturing concerns in British India and the States will operate to prevent a healthy all-round industrial development, since natural advantages under such circumstances will be swamped by the adventitious benefits resulting from differences in local measures of taxation.

CONDITIONS FOR HEAVY TAXATION

33. Taxation on the scale we have proposed will place a very heavy burden on the country and will be justified only if its utilization for the purposes for which it is intended is fully guaranteed by a national government responsible to the people of the country. It is necessary to emphasize this fact because, as experience has often shown in the past, it is a dangerous thing to vest large powers of taxation in a foreign government bred in traditions of imperialistic exploitation. Both our plan of development and our proposals for meeting its cost imply the existence of a responsible national government as an essential condition. Unless this condition is satisfied, there can be no assurance that planning will be directed either along right lines or towards right ends, nor that the resources released for the purpose will be wisely and fruitfully expended.

III

THE STATE AND ECONOMIC ORGANIZATION

CHOICE OF ECONOMIC ORGANIZATION

34. The nature and scope of the measures necessary to secure an equitable distribution of the national income depend to a large extent on the lines on which production is organized. This in its turn is influenced by the principles on which the economic system of the country as a whole is based. It is therefore necessary to indicate the type of economic organization which, having regard to the circumstances of India, would be appropriate to the plan we have outlined. This is a subject on which it is possible to hold widely different opinions and which in the past has lent itself to acute controversy. In considering it, we should therefore eschew preconceived notions and approach the question from a detached point of view. Since planning is primarily a matter of organizing the human and material resources of a country, our aim should be to devise a system which would help to utilize them to the maximum advantage. The plan must fit in with the general outlook and traditions of our people and the cost of efficiency in terms of human suffering and loss of individual freedom must not be unduly heavy.

STATE INTERVENTION INHERENT IN PLANNING

35. It is a rather widely held assumption that a planned economy can only function within the political framework of a totalitarian government. This assumption is natural since in the two countries which have witnessed the most impressive experiments in economic planning undertaken in recent years, namely Soviet Russia and Germany, the State has exerted over the activities of its citizens in every sphere of life a degree of authority which provides little scope for the exercise of individual freedom. It is inevitable that in executing a comprehensive plan of economic development, especially in a country where the beginnings of such development have yet to be laid, the State should exercise in the interests of the community a considerable measure of intervention and control. That this would be an indispensable feature of planning was recognized by us in our first memorandum. We have for instance indicated in that memorandum that no economic development of the kind proposed by us would be feasible except on the basis of a central directing authority and further that, in the initial stages of the plan, rigorous measures of State control would be required to prevent an inequitable distribution of the financial burdens involved in it. An enlargement of the positive as well as preventive functions of the State is essential to any large scale economic planning. This is inherent in the idea of planning and its implications must be fully admitted.

PLANNING AND DEMOCRACY

36. This, however, is not to concede that no society can undertake a comprehensive and integrated plan of economic development except by discarding the fundamental postulates of democratic government. There is no warrant in logic or history for such an assumption. If democracies can successfully plan and organize their resources for waging wars, it stands to reason that they can do so equally for fighting social evils such as poverty, disease and ignorance. Democracy rests on the belief that the freedom of the individual to give full expression to his personality is one of the supreme values of life and among its basic needs; the State cannot demand a surrender of that freedom except for well defined ends and except with the assent of the community freely expressed through constitutional channels and with opportunities for the free functioning of parties holding divergent views. If a planned economy involves, as it necessarily must, the restriction of individual freedom in varying degrees, such restriction under a democratic government will be of limited duration and confined to specific purposes. Whereas in a totalitarian society the individual is merged in the State and belongs to it, having no rights except those which the State chooses to confer, in a democracy the State belongs to the people and is but a means of securing the fulfilment of the individual's rights and therefore any restriction which it imposes on his freedom must be justified by that test. We believe that planning is not inconsistent with a democratic organization of society. On the contrary, we consider that its objects will be served more effectively if the controls inherent in it are voluntarily accepted by the community and only enforced with its consent.

37. In discussing different types of economic organization from the point of view of planning, it is perhaps worth while pointing out that the distinction which is generally drawn between capitalism and socialism is somewhat overdone. The principle of *laissez faire*, which is regarded as the dominant note of capitalism, has during the last hundred years been so largely modified in the direction of State intervention in various spheres of economic activity that in many of its characteristic aspects capitalism has been transformed almost beyond recognition. Similarly, countries which in recent years set out to organize their economic life on orthodox socialist lines have found it necessary in several important respects to accept capitalistic ideas in their effort to evolve a workable form of society. As a result of these developments, the distinction between capitalism and socialism has lost much of its significance from a practical standpoint. In many respects there is now a large ground common to both and the gulf between the two is being steadily narrowed further as each shows signs of modifying itself in the direction of the other. In our view, no economic organization can function effectively or possess lasting qualities unless it accepts as its basis a judicious combination of the principle associated with each school of thought. These principles may be summed up as follows: first, that there should be sufficient scope for the play of individual initiative and enterprise; secondly, that the interests of the community should be safeguarded by the institution of adequate sanctions against the abuse of individual freedom; and thirdly, that the State should play a positive role in the direction of economic policy and the development of economic resources. It is from this angle that we approach the problem of determining the place of the State in a planned economy in India. We believe that capitalism, in so far as it affords scope for individual enterprise and the exercise of individual initiative, has a very important contribution to make to the economic development of India. We believe at the same time that unless the community is endowed with powers for restraining the activities of individuals seeking their own aggrandizement regardless of public welfare and for promoting the main objectives of economic progress, no plan of economic development will succeed in raising the general standard of living or promoting the common good. "The problem of this century is to find the most fruitful

*Sir Manilal B. Nanavati and J. J. Anjaria: *The Indian Rural Problem*, p. 349.

method of combining planning the right kind and degree of planning with freedom. Competition and central direction may, indeed, be so applied that they spend all their energies merely in frustrating each other. But if, they are sorted out and each applied by itself to the problems for which it is appropriate, there is no inherent reason to doubt that an economy based on both planning and free enterprise would be superior to either of the extremes".*

ROLE OF STATE

38. In dealing with the relation of the State to economic activity, it is necessary to make a distinction between the role which the State may generally be expected to play in future, when a planned economy has come into normal operation, and its part during the interim period when the plan is in process of being carried out. As the role to be assigned to the State in normal times is of more fundamental importance, we deal with it first.

METHODS OF INTERVENTION

39. Co-ordination of general economic activity, management of currency and public finance, collection of statistical and other information, and adoption of legislation to safeguard the interests of economically weak classes are some of the more important functions which have now been universally recognized as legitimate duties of the State in the economic sphere. We have, however, to deal here with another and a more specific set of functions which are being advocated by important sections of enlightened opinion both in this country and outside. These functions centre round (*i*) ownership, (*ii*) control and (*iii*) management of economic enterprises. A widening of the economic functions of the State in these directions is advocated on the ground that unrestricted private enterprise, under the capitalistic system of production, has not served the interests of consumers and of the community generally as satisfactorily as it should have. We have, therefore, to determine the nature and scope of State activity in terms of these three factors in the economy which we visualize.

CONTROL MORE IMPORTANT

40. Of the three factors mentioned above, from the point of view of maximum social welfare, State control appears to be more important than ownership or management. Mobilization of all the available means of production and their direction towards socially desirable ends is essential for achieving the maximum amount of social welfare. Over a wide field it is not necessary for the State to secure ownership or management of economic activity for this purpose. Well directed and effective State control should be fully adequate. State control of this character is, however, bound to put important limitations on the freedom of private enterprise as it is understood at present. Legal ownership would lose some of the essential attributes which are attached to it at present, especially in respect of the use and disposal of economic resources. Monopolies, for example, would not be allowed to limit their output with a view to increasing their profits by raising prices. Scarce natural resources would not be allowed to be exploited without consideration for the future requirements of the country. The rights attaching to private property would naturally be greatly circumscribed. In the light of these considerations, we indicate below in general terms the sectors of economic activity which should be owned, controlled and managed by the State.

STATE OWNERSHIP

41. State ownership is necessarily involved in all cases where the State finances an enterprise which is important to public welfare or security. State ownership will also arise where in the public interest it is necessary for the State to control an industry but the circumstances of the industry are such that control is ineffective unless it is based on State ownership. As regards the former class, industries falling within this category may be either entirely new industries or industries new to particular areas, and in both cases many require financial assistance from the State in the initial stages. If later on private finance is prepared to take over these industries, State ownership may be replaced by private ownership, but it is essential in the public interest that the State should retain effective control over them. In the other group of industries in which State ownership exists because it is a necessary means of enforcing State control, ownership by the State will be a more or less permanent feature. In these cases where ordinary methods of State control have to be supplemented by State ownership, it will be necessary as a rule to place management also in the hands of the State. The manufacture of materials exclusively required for war purposes and the organization of vital communications such as posts and telegraphs are illustrations of this class of industries.

STATE CONTROL

42. Enterprises owned wholly or partially by the State, public utilities, basic industries, monopolies, industries using or producing scarce natural resources and industries receiving State aid should normally be subject to State control. The nature of the control to be exercised will vary from industry to industry and from unit to unit in the same industry according to the specific requirements of each case. The institution of adequate controls which would achieve the object in view, without unduly hampering the initiative of the management, and the proper enforcement of such controls will present difficult problems. The following are illustrations of the form which control may assume: fixation of prices, limitation of dividends, prescription of conditions of work and wages for labour, nomination of government directors on the board of management, licensing and 'efficiency auditing'—a development of cost accounting which will be the watchdog of public interest rather than of financial interests in the limited sense.

STATE MANAGEMENT

43. Where an enterprise is owned by the State, there is a *prima facie* case for its management by the State. But it does not invariably follow that all enterprises owned by the State should also be managed by it. There are three alternative methods of management open in such cases; by the State, by private enterprise and by *ad hoc* public corporations. To some extent the deciding factor which determines which of these alternative methods should be adopted in any particular case is how far the necessary personnel will be forthcoming under each method. But since State ownership generally arises because the industries concerned are of public importance, considerations of efficient management alone cannot be allowed to settle the question. It is necessary to take into account also the wider and more fundamental question of the extent to which public welfare and security will be safe-guarded and promoted under each system. It is not possible to lay down a general rule as regards this aspect of the question and each case must be decided on its merits. In the ultimate decision, the governing issue will be whether State control is not sufficient to safeguard the public interest but in addition to it State management should also be provided.

COMPROMISE FORMULA

44. We have set out some of the leading considerations by which the question whether an industry should be left to private enterprise or should be owned and managed by the State is to be determined. The application of these considerations in particular cases is bound to present difficulties and there will necessarily be a wide field in which decision will involve a nice balancing of various factors. It will probably be found in these cases that the arrangement which will best meet the situation is a compromise between the two principles so that while some units of the industry are owned and managed by the State, others are left to private enterprise. Where considerations of efficiency on the one hand or public welfare on the other would not permit of a clear out decision, it is in the direction of a compromise on these lines between State and private enterprise that a practical solution may be sought. Public utilities of a monopolistic character and industries for the products of which the government are the principal customer would among others be the main industries which would fall within this category. Experience of working the same industry partly by State and partly by private enterprise will incidentally afford valuable guidance in shaping public policy in the matter. Moreover, the simultaneous operation of both systems in the same industry will provide a useful incentive and corrective to each system, resulting in all probability in a maximum contribution to the well being of the community by the industry as a whole. "There is no need to socialise at once all the forms of production it may prove desirable to socialise some time; nor is there any reason why a form of production, socialised at first, should not be handed back, under proper safeguards, to private enterprise if socialisation does not yield good results. Within a single branch of production there may be some parts which it is desirable to socialise, and others which are best left under private ownership and control. The less rigidly the line is drawn, the more room will there be both for diverse experiment and for suiting different types of men and women with jobs in which they have a decent chance of being happy".†

CONTROL DURING PLANNING PERIOD

45. The general propositions regarding State activity in the economic sphere which we have enunciated above will hold good even during the planning period. But during this period, in addition to the controls embodied in these propositions, the State will have to adopt a number of other controls of a temporary character. Without them a planned economic development will be hardly possible. To a large extent the controls to be instituted during the planning period will be similar to those which are in force at present under war conditions and to which the country has become more or less

*The Economist, May 13, 1944, p. 639.

†G. D. H. Cole: *Great Britain in the Post-war World*, p. 81.

accustomed; but they will be better co-ordinated and more systematically administered.

46. These controls will operate mainly in the following spheres:

(*i*) production,

(*ii*) distribution,

(*iii*) consumption,

(*iv*) investment,

(*v*) foreign trade & exchange, and

(*vi*) wages and working conditions.

CONTROLS ILLUSTRATED

Control of production will aim at a proper allocation of resources so as to secure better regional distribution of economic enterprises and to reach the targets set for the different branches of industry. The control for establishing new units and for extending existing ones. Distribution will be controlled primarily with the object of determining priorities for the release of raw materials, semi-finished materials and capital goods. In the early stages of planning, control will also include rationing and distribution of consumers' goods. The objectives to be kept in view in controlling consumption will be to enforce fair selling prices for essential goods and for goods manufactured by industries receiving State assistance and also to prevent inflation. As regards investment, control will imply that new capital issues should be approved by the State so as to secure a proper distribution of available resources, to prevent inflation, to provide for the orderly development of new enterprises and generally to maintain and promote the interests of Indian nationals. Trade and exchange will be subjected to control to such extent as may be required for conserving foreign exchange and for protecting Indian industries. The control of wages and working conditions will aim at ensuring, not merely fair conditions for labour, but also efficiency of management, particularly in public utility concerns and protected industries.

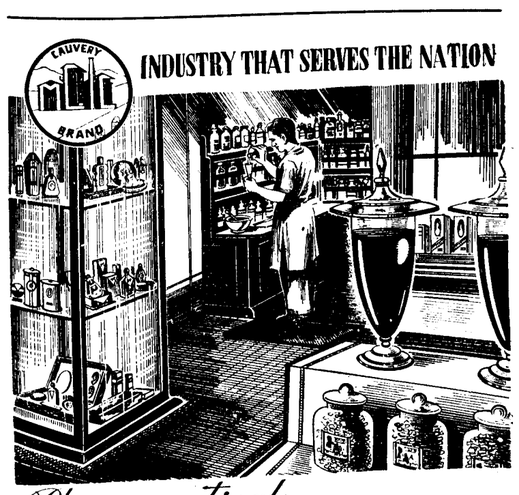
NATIONAL GOVERNMENT

47. The wide powers of direction and control, with which the State would be invested for the successful execution of the plan, would be exercised through a national government responsible to the people. "The strength of State Authority, not in the physical sense, but in the moral sense of a genuine submission on the part of the great majority of the population, is an important factor in the success of planning".* To achieve this moral strength and to ensure harmonious and uninterrupted working during the planning period, the personnel of government should be adequately representative of every considerable body of political thought and sentiment in the country. It is also necessary that while sufficient powers of co-ordination are vested in the central government, the administration of economic policy should be delegated to provincial and local governments on a basis of wide decentralization. The various controls, both permanent and temporary, which have been indicated will not be effective unless the State has at its disposal a specialized agency possessing the necessary knowledge and experience for handling economic matters. For this purpose a new service—an *economic civil service*—should be established in the country composed of persons with the special education, training and experience appropriate to the economic functions of the State.

FUTURE ECONOMIC ORGANISATION

48. The general shape of the economic organization which will emerge if our proposals are carried out is not unlike the type of society which Professor Pigou foreshadows in his book, *Socialism versus Capitalism*. We quote the following passage from it which, *mutatis mutandis*, is applicable to the society we have in view and the role which the State will play in it: "If, then, it were in the writer's power to direct his country's destiny, he would accept, for the time being, the general structure of capitalism; but he would modify it gradually. He would use the weapon of graduated death duties and graduated income tax, not merely as instruments of revenue, but with the deliberate purpose of diminishing the glaring inequalities of fortune and opportunity which deface our present civilisation. He would take a leaf from the book of Soviet Russia and remember that the most important investment of all is investment in the health, intelligence and character of the people. To advocate 'economy' in this field would, under his government, be a criminal offence. All industries affected with a public interest, or capable of wielding monopoly power, he would subject at least to public supervision and control. Some of them, certainly the manufacture of armaments, probably the coal industry, possibly the railways, he would nationalise, not, of course, on the pattern of the Post Office, but through public boards or commissions. The Bank of England he would make in name—what it is already in effect—a public institution; with instructions to use its power to mitigate, so far as may be, violent fluctuations in industry and and employment. If all went well, further steps towards nationalisation of important industries would be taken by degrees. In controlling and developing these nationalised industries, the central government would inevitably need to 'plan' an appropriate allocation for a large part of the country's annual investment in new capital. When these things had been accomplished, the writer would consider his period of office at an end, and would surrender the reins of government. In his political testament he would recommend his successor also to follow the path of gradualness—to mould and transform, not violently to uproot; but he would add, in large capitals, a final sentence, that gradualness implies action, and is not a polite name for standing still".

*Zweig: The Planning of Free Societies, p. 255.



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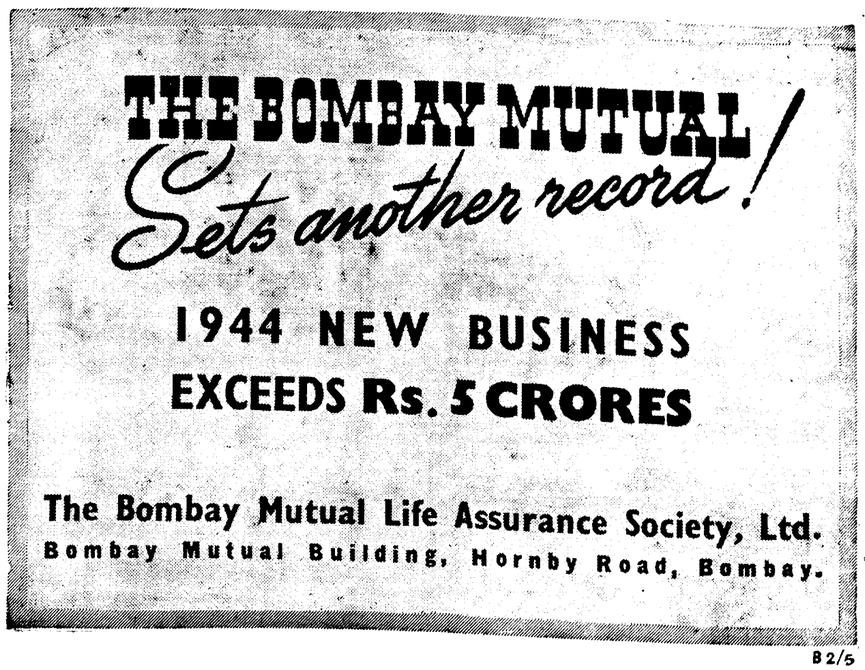
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CONSERVE MICA

By Prof. S. K. ROY, Ph.D., F.N.I.

The mining industry of India consists of coal mines and metalliferous mines. There are about 600 coal mines and 1,200 metalliferous mines in British India. The number of men employed in metalliferous mines is perhaps half of the total number employed in the coal mines. Many of the metalliferous mines are worked as quarries or by open-cast method. But there are many metalliferous mines which employ men underground. Thus many thousands of men work underground in the metalliferous mines.

Although mica is not a metal, it is not a substance which can be refined, and has to be used as it is obtained from the mines. Yet mica falls under the category of metalliferous mines. Many of the mica mines are very deep and there are at least a score of mica mines, each of which employs several hundred miners underground.

The Central Government have, so far, only looked after the safety of the mines. Only in recent years have they started to take an interest in the welfare of the mine workers engaged in the coal mines alone. Very wisely, the Central Government insists that all coal mines should be managed by highly qualified (scientifically trained) managers who are capable of taking full control of the safety of coal mines and of the miners underground and of managing the mines according to the Indian Mines Act by means of modern scientific aids. The examinations, both theoretical and practical, that these colliery managers have to pass to get their Managers' Certificates are of as high a standard as are required by the responsibilities of the post. But it is most unfortunate for our country that there are no examinations which the managers of metalliferous mines have to pass, even though the life and safety of thousands of workers working underground may be under the care of such managers. There was once a Degree Course in Metalliferous Mining Engineering in the Indian School of Mines of the Government of India. But in recent years the College has begun to discourage students taking up that course by refusing the metal mining Certificate holders the privilege of the Degree. This state of affairs is especially unfortunate for the mica mining industry where the mining operations underground are so very complicated that, if the manager is not properly trained on modern scientific lines—that is, if he does not possess full knowledge of the geology of mica and all the modern mining principles—the mining operations in the deep mines may be disastrously expensive or even ruinous.

The oil wells of Assam and the Punjab also deal with a mineral. It is petroleum. New petroleum wells are likely to be established in India in the Indo-Gangetic plain as well as in Sind, Baluchistan and Bhawalpur and Mandi States. But as far as I know the State does not exert any control over the Petroleum Industry of India though a certain amount of state control over the petroleum resources of the country, whose petroleum reserve is unknown and uncertain, is certainly necessary. However, even though the State exerts no control over the oil wells of India, yet when asked by a veteran member of the Assembly as to how the oil wells of Assam were controlled, the then Hon'ble Member in charge of Industries and Labour, who is the member in charge of minerals of India, replied to the effect that the oil mines are looked after by the Department of Mines. I am sorry the Hon'ble Member was misinformed. But the Member of the Assembly who was satisfied with such an answer was unfortunately ignorant. He should have known that oil is not mined, and that there had never been one in the Department of Mines whose duties included the supervision of the oil wells of India. It is an instance of the ignorance that prevails all round. The knowledge possessed by our legislators regarding most of the other minerals of our country, perhaps excepting that of coal, is equally imperfect. Moreover, there are no seats to represent the interests of the mineral industry of our country in the Central as well as Provincial Assemblies. Though the dumb millions in the mines are most useful fellow countrymen of ours, they have many legitimate grievances which require urgent redress. They require looking after and require to be heard about their difficulties. The Provinces are satisfied with the fat royalty they receive from the mines and the Central Government is happy with the amount of benevolent charity they exert through their Department of Labour. But certainly the favours so far shown to our miners are not enough. Seats must be provided for the mining and mineral industry in every Assembly.

Ignorance about the conditions of many minerals like coking coal and petroleum, (whose reserves are acknowledgedly inadequate, compared to the country's needs) is disastrous. Other minerals, like iron ores and manganese ores, though plenty in our country, still require to be scientifically worked by trained mining engineers. But of all the valuable minerals of India which are being ruined by the ignorance of the country-fathers and by the unscientific methods of working at present in vogue, Mica heads the list. Others are chromite, kyanite, fireclay, beryl, etc. Neglect and ignorance have already caused the closing down of the famous diamond mines of Golcunda Province (the Kurnool and Cudapah districts of Madras). Diamond mining has become legendary to present day India, although all the diamonds the world saw before 1858 originated from India. The same ignorance is the cause of the extinction of the zinc-lead-silver mining industry of Jawar; cobalt-nickel-copper mining industry of Nepal; and copper-nickel industry of Jaipur.

Due to their ignorance of modern mining practices, and paucity of capital, the small owners in the mica industry of Bihar are slowly but surely leading the mica industry to a total collapse. For want of capital they cannot usually employ, or under that excuse, neglect to employ, proper mining Engineers, or purchase machines to work these mines after they go below the sub-soil water level. Consequently they abandon the mines after they have gone down to a depth of 60 to 70 ft. In this way they are ruining the future reserves of mica by picking out the eyes of potential mica mines in their ruthless search for cheap profits.

Those geologists who like Niggli, Smith, Bowen, Landes, Lindgren and others, have, thanks to the facilities granted to them by the Carnegie Institute, solved many intricate geological problems by the application of modern physical chemical principles, mainly the Phase rule, in geological matters, are definitely of the opinion that mica is a mineral of igneous origin; that mica crystallised out of a very hot mineral solution which was given out by a gradually cooling rock-melt, the magma of igneous origin. Magma has direct access to the hot interior of the earth. Every rock-melt according to Niggli and others is a non-varient binary system consisting of (a) the volatile components and (b) the non-volatile components. When the non-volatile components crystallise and solidify, they separate the rock-phase, and the volatile components are responsible for the origin of all pneumatolytic pegmatitic, as well as hydrothermal, derivatives of magma.

Mica occurs in pegmatite. The granite which occurs close to every mica deposit all over the world is the non-volatile rock phase of a system whose volatile phase is pegmatite. This has been very clearly explained by Niggii in his famous book called "Das Magma und Seine Produkte" as well as in "Leichtfluetigen Bestandteile im Magma". The genetic relation between mica and granite can be always established at every place where mica occurs. Along with the large commercially workable crystals (books) of mica and lumps of biotite there occur, in the pegmatite veins, minerals like quartz, felspar, tourmaline, beryl and apatite, which are also the minerals that occur in granite (dome gneiss). Muscovite mica, however, unlike other minerals of the pegmatite vein did not crystallise out of pegmatite straight away as a primarily separated mineral of pegmatite, like quartz and felspar. In the case of muscovite a good lot of chemical reaction accompanied by replacement phenomena took place between the earlier formed orthoclase crystals and the acid plagioclase juices, which came up subsequent to the orthoclase crystallisation. (Niggli, Lebrbuch der Minerologie fig. 538). We have actually seen this phenomenon in the Kodarma area. And that this actually takes place during experiments in a binary melt, consisting of volatile and non-volatile components, has been proved by Niggli and Smith in the Carnegie Institute at Washington. The melt diagram explaining this can be found in the "Leichtfluetigen Bestandteiie im Magma", in Fig. 538) of Lehbruch der Mineralogie, Berlin, 1920, p. 511 as well as in "Das Magma" p. 247. The result of interaction between orthoclase and acid plagioclase is the separation of muscovite, kazra quartz and jogni. This replacement phenomenon has been fully explained in a paper called "Mica Pegmatite of Kodarma Area" published by me jointly with my assistants—Sharma and Chatterjee—in the Geological Magazine of London (1939 Vol. LXXVI). I showed this reaction phenomena to the international group of geologists consisting of Prof. H. H. Read, F.R.S., Prof. W. G. Fearnsides F.R.S., Prof. F. K. Morris Wisconsin, Dr. Du Toit, S. Africa and others who visited the Kodarma area under the auspices of the Indian Science Congress in 1939. Thus contrary to the belief of the mica experts of India who consider mica to be merely shallow deposits having originated from surface water circulating along fault planes, it should be clearly understood that all mica mines go very deep. They are not such shallow deposits that they can be fully worked out by surface scratchers.

Unfortunately, some of our mica experts have based their deductions on their shallow personal knowledge which is as faulty as fanciful. I have not yet seen any of these mica experts take into account the modern physical chemical conception about mica pegmatites, such as has emanated from the Carnegie Institute at Washington. Even refere-

ences to "Leichtfluetigen Bestandteile im Magma", or to "Das Magma und Seine Produkte" the most important contributions in the case on binary melts, like pegmatite, and to many other important papers written in plain English and published in well known British journals, cannot be found in their "Bibliography".

It is not that all pegmatite veins occuring close to granite (dome gneiss) and possessing genetic (mineralogical) relation with granite, contain workable books of mica. Observed facts and physical chemical explanations regarding the origin of pegmatite agree that it is only in those pegmatite veins in which reaction between the first formed orthoclase and the subsequent acid plagioclase (that is, plagioclase of the fluidal phase) has taken place, that muscovite crystals (books) of commercially workable sizes are obtained. The other product of the reaction is quartz. Quartz is also one of the primary minerals of pegmatite itself. Therefore, it is common knowledge to all those who have become interested in mica mining in Bihar that those pegmatite veins which should be mined with the object of obtaining a commercially workable quality and quantity of mica must show a considerable development of quartz at the outcrop. That is, such pegmatite veins must show a "backbone" of quartz.

Pegmatites consisting of red feldspar (orthoclase) do not provide an indication for muscovite. It is an indication for biotite, or black mica. Further, it is only at certain particular places of a pegmatite vein that the necessary reaction for the separation of mica has taken place. The reaction can take place anywhere near the place where the vein is at present exposed to the surface, as well as throughout the length and breadth of the deeper regions of the vein. It is this very occasional nature of the origin of mica that makes mica mining the most uncertain of all the metalliferous mining with which man has, so far, interested himself. Usually, in their ruthless search for mica, the small owners,as explained above, work only near about these surface indications of mica and, not being provided with adequate machinery, especially boilers and pumps, they leave the mica deposits to their fate after picking out, so to say, the eyes of the mica mines. Thus devoid of their most important characteristics, i.e., a backbone of quartz with felspar in the sides—which alone determines whether a pegmatite vein should be dug into or not for getting commercially workable mica—the pegmatite deposit loses all its attractions for any future prospectors.

The present mining rules do not require the metalliferous mine-owners to engage a mining graduate or to leave a plan or log of these shallow abandoned mica mines. After the surface scratchers have filled their pockets with money obtained by the sale of mica won from near the surface, the outcrops of these mica mines are left buried and uncharted under their own debris inside the deep tropical forests, with all traces of mica very soon to be obliterated by the growth of vegetation over the debris. Millions of rupees worth of mica may still be remaining untouched in the deeper parts of these mines, but even if some time later these old surface scratchings were located, no future mica industrialists equipped with greater capital, greater technical skill and scientific knowledge would be tempted to risk any money to obtain further mica from such deposits, devoid of any plan, log or surface indications.

What is the greatest depth to which a mica mine can go is not yet known. But some of the Kodarma mines have gone to more than 500 feet from the surface. By the premature end of this mining, the mica miner and mica cutter and splitter all lose a lot of money in wages, the Government loses its revenue in mica, and the country a very large amount of national wealth. Is this fair? Is this to be tolerated? Just because somehow or other someone has possessed a mica mine or, as a matter of fact, any mineral deposit, will it be fair to the country that the surface scratcher should be allowed to waste the nation's wealth as he likes? It has been pointed out over and over again that private ownership (of mineral) is in reality public trust and that the owner's right to do as he pleases, even to squander national resources cannot and will not be tolerated indefinitely by society (Lane, F. K., Conservation through Engineering, U.S.A. Geol. Survey, Bulletin 705, p. 35, 1920).

The best remedy is nationalisation of mica. To save the mica industry from the hands of such ruthless surface scratchers, the State would be well advised to buy out the mica mines from all such small owners as are unable to invest capital and engage qualified managers, and to lease them out again to parties who possess sufficient capital and are capable of working the mines thoroughly in modern scientific lines.

The other danger to the Bihar mica industry and trade is the mica "dealer". His position in the mica industry is like that of a counterfeiter of a State currency.

Mica is a semi-precious mineral. It is not usually realised by our average countrymen, or even by the majority of the intellectuals, that this rather humble non-metallic mineral common in Bihar, Western Bengal, Mewar and Madras, is often valued at even more than silver. During the first World War when the prices of silver never went higher than Rs. 30/- a pound, some varieties of mica were sold at Rs. 112/- per pound. And, during the present war, I know that even a certain small size mica, cut 1"×1" approximately, is priced at 62 shillings per pound, while there are many sizes of flawless quality valued at even higher than the present inflated price of silver. Thus, a head load of mica of good quality and size is worth quite a fortune to the poor mica miners of Bihar. Therefore, the temptation to steal mica is very great indeed. And the propensity to steal becomes specially strong if the poor man is assured of a ready market for the mica stolen from the "mine store" of a mica mine owner (whose mine is situated close by) with a dealer not very far away. Therefore, an everyday occurrence in the micafield is that the miner, when he locates a promising book of mica in the course of his usual work in a mine, somehow or other tries to keep this information to himself and then waits for an opportunity stealthily to take it out of the mine. As there are no police guards in the forests, the thief is often successful in his enterprise and sells the mica to a neighbouring dealer or small owner against ready cash without much trouble. But neither the thief gets the real value of the mica, nor does the receiver of the stolen property ever care to pay the proper price. The receiver, usually a "small owner" or a "dealer", however, can and does put the ill-gotten mica on the market at a price much lower than the market price which the real owner in its usual course would have demanded. To the real owner, mica of such special sizes and qualities is rare. Therefore, the honest owner who has had to invest a large quantity of money in such a gamble as mica mining can ill-afford to market any "special" mica as cheap as the "dealer" who gets it without facing practically any risk. In this way, mica which is really worth, say Rs. 1,000/- changes hands, say, for Rs. 500/-. Usually the "small owner" and "dealer" are closely related to each other. The licensed dealer has to show in his books the sources from which he received the mica. This work becomes easier for him if he has one or two small mica mines, really diggings, somewhere in the vicinity. It becomes more convenient and advantageous for him if he possesses a small square inside the forest in the midst of larger properties containing many large mines, owned by the dozen or so large mica mine-owners of our country who control about 90 per cent. of the mica industry. At night, in such a place inside the forests, infested with tigers and bears, mica thieves can slip out with their ill-gotten mica easily and hand it over to a receiver, the owner of a digging who, in his turn, transports the mica to his factory at Kodarma or Giridih as mica produced in his own mines. Thus, usually the dealers are directly responsible for encouraging theft and spoiling the mica market and, therefore, they should be wiped out altogether. Dealing in mica should be forbidden even to the owners of large mines, the so-called big 10. They also should not be permitted to purchase mica from each other, nor from any other individual.

The war has afforded us a wonderful opportunity for the nationalisation of mica, which is the ultimate salvation of this as well as other strategic minerals, including fuel minerals—coal and petroleum—of our country. For the present, circumstances have compelled the Governments of the Allies to become the sole buyers of mica. For the salvation of the mica industry this arrangement should be continued forever. There should be in the trade in India only the mica mine owner and one mica purchser—the Government. It should be the duty of the Government Department concerned not only to assure an equitable distribution of mica but also to obtain the best price for this commodity for which we hold the world monopoly. The increased earnings will be well utilised to purchase machinery to modernise mica mines.

It is well known that one of the causes of the early collapse of Germany during the World War No. 1 was her inadequate reserves of mica. Even when the Allies come out victorious after this war it is not going to mean the end of war altogether. Therefore, another important duty of the Department should be to see that unusually large quantities of mica, especially that of strategic quality, do not fall into the hands of undesirables.

Usually no two micas are exactly alike regarding their physical properties, e.g., regarding their colour, warpings, nature of air inclusions, cleavage and optical properties. So it is possible for geologists with special training in mica to trace definitely the source of any mica. That is, it is possible for such geologists to say from which mine a certain mica came. If the State employs such geologists, they will help to control the sources of mica and thus they will check mica theft. Then any sort of illicit trade in mica will be eliminated. This is imperative as the mica price level (currency) is always threatened with depreciation by unjust competition from possessors of illicit mica. But if theft is checked, the mica mine owner will always receive the proper price for mica and the mica trade will improve to the benefit of all concerned.

I should not leave the subject without sounding a note of warning. If mica mining and trading are not controlled immediately, then within another fifty years the mica mining industry of Bihar will be a thing of the past. Just think that half a million poor Bihari villagers who make their honest living in the mica industry will be threatened with starvation, if the mica industry is gone. On the other hand, if treated fair and square, the mica industry of Bihar has still a very prosperous future indeed, Therefore my earnest request is "SAVE MICA".

OILSEEDS AND THEIR FUTURE

In any scheme of economic reconstruction for India in the post-war period, oilseeds are bound to enjoy great importance. The reason is to be found in the unique position of oilseeds, as an agricultural product, as an export staple, a raw material for a wide variety of manufactures, and an article of food for men and cattle. As raw material for industry, they are bound to figure in the post-war plans for international regulation of supply of raw materials. For the same reason, and even more, because of the instability of their fortunes as an export staple, post-war planning in India will aim at a closer integration of oilseeds production in the internal economic structure. The forced marches in research caused by the war have opened up wide scope for the utilisation of oilseeds in industrial and other consumption at home. Historically, India's export trade in oilseeds is not more than a few decades old. During this period, it grew to great importance. But it was not long before India's exports met with serious competition. Indian linseed was one of the items that figured prominently in Indo-British trade agreements. The element of insecurity, which was noticeable in the post depression period, developed during the war into a cessation of exports. Special measures had to be undertaken for the relief of groundnut growers. But as mentioned already, the war, if it began with a threat to oilseeds, has also held out great promise. In this article, an attempt will be made to indicate these potentialities and to appraise the place of seeds in our national economy in the post-war period and the relation which they will bear to the producers and consumers of oilseeds in the rest of the world.

PLACE IN INDIAN ECONOMY

Not only in Indian but also world economy, oilseeds have come to enjoy a high degree of importance. They form a respectable item in world trade and the scope for their consumption has been rapidly widening. Oilseeds form the raw material for vegetable oil, a vital basis for key industries; and the demand for them is bound to grow. Every country with industrial ambitions has realised the need to exploit its oilseed resources to the maximum extent possible. Effective steps are being taken by every country to make itself self-sufficient in the matter of vegetable oils and to extend the internal production and consumption of oilseeds. In fact, in most of the manufacturing countries, the production of oilseeds has not yet been able to keep pace with the growing demand for them. The importance of oilseeds does not stop with the yield of the much needed lubricants for machinery. In recent times, the demand for edible fats has grown up as a result of shortage of cattle, increase in population and rise in the standard of living. As methods are successfully devised for manufacturing edible fats from oilseeds like linseed, rapeseed, etc., there has arisen a powerful fillip for the cultivation of oilseeds. Manufacture of soaps, vegetable ghee, paints, varnishes, etc., has also offered wide scope for oilseeds. They form an excellent fertiliser of the soil and nutritious cattle feed.

Among the oilseeds-producing countries of the world, India holds a dominant place. She produces a wider variety of oilseeds than any other country. The chief oilseed crops of India are groundnut, linseed, cotton seed, sesame, castor, mowra, niger and kardi. Over 16 million acres were under oilseeds in 1939-40 and the total production was estimated to be not less than 8 million tons. The absence of soyabeans and palm kernal in the Indian oilseeds group is, however, to be noted.

INDUSTRIAL USES OF OILSEEDS

The industrial uses of oilseeds are many. The more important of them are the manufacture of soaps, paints, varnishes, compound lubricants, oilcloth, candles, substitute for tallow, glycerine, stearine, biscuits, substitutes for butter and ghee, hair oils and medicated oils. In 1939 there were 19 soap factories in British India, 11 of which were located in Bengal and 5 in Bombay. To a large extent, the output from Godrej Soap Factory of Bombay, the Tata Oil Mills Limited, the Bengal Chemical Works of Calcutta, the Kerala Soap Factory at Calicut and the Government Soap Factory at Mysore could meet the rapidly rising demands of the public. But it is felt on all hands that, while the scope for expansion is promising, the number of factories in India falls far short of our requirements. On an average nearly one crore worth of soaps were imported annually before the war, and the ample resources of oilseeds have recently revealed that, if facilities are afforded for establishing an up-to-date Oil Industry, India can not only become self-sufficient in this matter on the basis of the present level of consumption, but be able to meet a steadily increasing demand. While India possesses large supplies of linseed oil and other materials necessary for the manufacture of paints, she was importing foreign oils and paints every year. In 1939 she had hardly 16 factories engaged in producing paints. A wide variety of varnishes and paints can be manufactured in India and, if the resources of the soil are efficiently utilised, self-sufficiency and an expanding internal consumption may be within our reach. The manufacture of candles, which is still in its infancy, can grow bigger if industrialists pay attention to indigenous oils, particularly mowra and cocoanut oil. The great textile interests in India, whose future is by no means dark, can interest themselves in the manufacture of vegetable fat from groundnut and coconut oils so that, the imported tallow may be gradually dispensed with and Rs. 22 lakhs saved for the country annually. The enormous importance of glycerine, a by-product in the making of soaps, is recognised as valuable for the production of dynamite and other war materials. Most of our oilseeds can yield lots of glycerine and, particularly, during war-time, the manufacture of glycerine must be profitable and urgent. Not much progress has been witnessed in this direction, and every effort should be made to extract the greatest possible quantity of glycerine from our resources and stop importing foreign glycerine to the tune of four to five lakhs per year. Producers of Ayurvedic medicine have been handicapped to some extent by the absence of oil refining. The dwindling of imports of foreign drugs during war-time has already given a fillip to indigenous drugs production. But if an oilseed industry is established, medicine would open a valuable outlet for oilseed products. Vast masses of men are awaiting post-war plans to raise their pitiably low level of living. With the beginning of prosperity for India's agricultural population, a large demand will develop for hair oils, biscuits and substitutes for the high-priced ghee and butter. Oil is widely used in India for smearing on the body, for cooking purposes and for illuminating lights. The poor cottages which go without the above necessities now, may well renew their demands for oil if economic prosperity should set in. The value of oilcakes as fertilisers of soil has not yet been fully realised. In the past, an agitation was carried on against the export of oilseeds mainly on the ground that valuable manures are lost to the agriculturist. As an admirably suitable cattle feed, oilcakes are bound to be indispensable for the development of the dairy industry. It has also been found out that some oilcakes, like the cake of the mowra seed, are excellent vermicides capable of protecting tea and sugarcane plantations from the ravages of insects. The agricultural population, therefore, stand to gain enormously by the establishment of an efficient oil industry and the utilisation of all its by-products.

WAR-TIME FACTORS.

War has changed the prospects for oilseeds trade. Though the volume and value of oils and oilseeds that enter into international trade are great, the shortage of transport has created acute difficulties since the consuming areas are often widely scattered and far away from producing regions. Since this war is global in dimensions, transport creates bottlenecks on a world-wide scale. When the Japanese overran China, Malaya, the Philippines and the Dutch East Indies which formed rich sources of cocoanut oil, copra, palm oil, groundnut oil and tung oil, every producing country was obliged either to restrict the production of oilseeds or find new uses for them. Both methods were adopted for coping with the critical situation. Confining our attention to India, we find that oilseeds had to face the disappearance of export markets, the persistence of shipping difficulties, the apathy of the Government in devising effective ways of establishing an oil industry and a disproportionate rise in prices. The absence of imported oils opened a great chance for building a strong vegetable oil industry which can be a basis for numerous by-products besides filling up the gap created by the lack of imported articles. The persistent inflation kept up the rise in prices and a flight into commodities was the natural result. Financiers did not hesitate to invest large amounts in oilseeds like linseed as a hedge against inflation. But while the prices of oilseeds rose high, the prices of foodgrains were higher still. This acted as a check on the extension of cultivation of oilseed crops. The recent Allied victories may ease shipping difficulties and bring back to us one or two of our foreign markets; but the problem of utilising India's oilseeds resources internally will still remain.

War is the most effective of trade barrier and we must make the best of the war to lay the foundations of a vegetable oil industry which can feed numerous other minor industries, besides serving the major ones. The food value of oilseeds is now brought to light and its value as fertiliser is also recognised. Scarcity of kerosene oil has compelled the poor villages to look to vegetable oils for lighting purposes; and the high prices of ghee and butter drive them to vegetable oils more than ever before. If war has resulted in an unprecedented slaughter of cattle, that is precisely the reason why the oilseeds should be conserved and increased to enrich the stamina of our cattle now and in the post-war years.

Coming to the industrial uses of oilseeds, we find that the cessation of imports of foreign soaps should whip up our attempts to make India self-sufficient in this line. Our factories, old and new, require excellent lubricants suited to various kinds of machinery generating different temperatures. Experiments on our oilseeds have shown that we have ample raw material for producing all kinds of lubricants for automobile, locomotive and aircraft factories. The scope for making oilcloth, candles, hair oils, stearnine, margarine, paints, varnishes and indigenous drugs etc., is also vast. Research conducted by the Imperial Chemicals Ltd., have shown that artificial wool can be produced from groundnut. Before peace restores the currents of exports and imports, India should become self-sufficient in all these lines of manufacture. India is a vast country of nearly 38 million souls most of them leading a very low standard of living at present. The promises of prosperity are not entirely absent and hence the potential demands for the products of oilseeds are immense. The developments particularly in engineering and transport industries offer great scope for oil production. We can reduce excessive dependence on foreign markets, if active steps are taken for absorbing oilseeds internally. Modern oil presses and manufactures must be set up in India without any more delay. In 1939, there were only 293 oil mills in India. They are absolutely insufficient for our needs. If the Government affords facilities for the import of necessary machinery and chemicals, private industrialists and financiers should do the work of starting factories, and the market is wide enough to absorb the products. Attempts must also be made to organise research to increase the variety and yield of oil-seeds in the country. Improved marketing facilities, standardisation of weights and measures, good roads, warehousing, publicity and favourable railway rates would act as powerful aids to the growth of the oil industry.

THE FUTURE.

With regard to the future the question arises whether there should be an increase in the output of oilseeds or not. Are we justified in merely maintaining the present level or is there scope for expansion? These questions can be satisfactorily answered only in relation to the postwar export prospects and internal consumption. Since oilseeds are mostly cultivated as mixed crops and in dry areas, the capacity for increasing production is always there. During the decade preceding this world war nearly 8% of the net area sown in British India was under oilseeds. In 1939-40 out of 209,960,000 acres cultivated, no less than 16,294,000 acres were devoted to raising oilseeds. On an average, India's production exceeded five million tons a year. The figures for 1939-40 relating to the production and exports of some important oilseeds are as follows:—

Seed	*Production* (In tons)	*Export*
Castor ..	44,000	40,437
Groundnuts ..	2,327,000	548,564
Linseed ..	403,000	219,212
Rapeseed ..	1,104,000	21,705
Cakes		
Groundnut		132,095
Linseed		29,555
Rape & Sesamum		14,213

Enough has been produced to meet the prevailing internal demand and a good margin was left for exports. India could boast of enjoying the following percentages in world trade (in 1934-35); mowra seed 100%; cotton seed 1%; sesame 3%; castor 98%; rapeseed 36%; groundnuts 29% linseed 12%; poppy seed 75%; niger seed 100%. Though the opening of European markets during the latter half of the 19th century gave a powerful impetus to the cultivation of several oilseeds, the growing competition in the world markets and the steadily rising demand within India resulted in a gradual downward trend in exports. During the decade before 1939 nearly 80% of India's castor, 25% of groundnuts, 65% of linseed, 5% of rapeseed and only 1% of sesamum featured on the export schedule. The Ottawa Preference promised temporary prosperity but new competitors have been growing very fast. War, being a powerful decentraliser, has crippled international trade and has encouraged home production in the erstwhile consumers of oilseeds. Centres of production as well as the total output of oilseeds are bound to progress rapidly in the postwar years. But all indications are clear that the demand for oilseeds will also take long strides and if the quality of Indian seeds is improved, the chances of obtaining a decent share in foreign markets are not remote. But one cannot be sure of restoring the pre-war or pre-Depression levels. But it is safe to proceed on the assumption that under proper guidance and active planning, we can hope to regain 60% of the pre-war market in oilseeds.

The internal demand for oilseeds, on the other hand, is most promising. In fact, the decline in India's oilseeds exports during the period of 1929-30 to 1939-40 is to a great extent explained by the growing requirements of our vast increases in population and cattle wealth.

(Exports in tons).

Seeds	1929-30	1930-31	1935-36	1939-40
Castor	121,711	90,022	59,968	40,437
Groundnuts	613,360	601,204	412,567	548,564
Linseed	222,507	256,799	164,743	219,212
Rapeseed	66,259	32,843	19,021	21,705

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Cakes				
Groundnuts	147,471	181,771	194,238	132,095
Linseed	68,351	24,059	71,774	29,555
Rape & Sesamum	48,388	30,753	20,638	14,213

If it is decided that the present output can and should be safely increased, the target to be attained will depend on the extent of internal absorption of oilseeds during the post-war years. The 15% increase in our population and cattle and the absolute lack of chemical fertilisers in India extend good scope for increased production. If any post-war agricultural plan for India is drafted, the needs of dairy farming and the manurial requirements of our arable lands cannot be overlooked. This would reveal the enormous importance of oilseeds for a quick recovery in our agriculture. If the industrial expansion of India is planned and speeded up in all provinces of this country, the pressure for oils and oilseed products would indeed be very heavy. We are not in a position to know the possible increase in the industrial demand for oilseeds, soaps, lubricants, biscuits, cattlefeed etc., separately but that the chances are very bright is unquestionable. On the whole, we will not be hitting too much if we begin to plan for doubling the present outturn of our oilseeds.

This doubling of our oilseed resources can be achieved either by extending the area under cultivation or by organising methods of intensive cultivation. As long as internal avenues are undeveloped the agriculturist generally paid attention to oilseeds only with reference to the trends in export markets. Special attention towards increasing the outturn can be a reality only if better prices are offered and a steady demand guaranteed. The Government can achieve the target only by extending all facilities for starting a vegetable oil industry, and organising researches into the soil, manurial and other requirements of the oilseeds. Experiments conducted in Hyderabad, Baroda and Indore go to show that the yield can be greatly increased and improved if research is organised and established on a satisfactory basis. Better prices and greater facilities for marketing, storing and distribution of seeds would give the initial impulse for a nation-wide move for greater attention to the production and conservation of oilseed resources.

The immediate task before the oilseeds interests as well as the Government is therefore to form a Central Seeds Committee to look after the special needs of all those directly interested in the production, trade and utilisation of oilseeds. It may be recalled that the oil crushing industry Committee of the Imperial Council of Agricultural Research favoured the establishment of a central organisation as early as 1931. The Bombay Seeds Traders' Association has been persistently clamouring for it for over a decade, in vain. The Federation of Indian Chambers of Commerce and Industry, in spite of repeated disappointments in the past, continues to press for a Committee. The Hon'ble Sir Jogendra Singh, Member for Education, Health and Lands has given an assurance (at a conference held in Bombay in August) that every assistance would be given to enable the primary producers of oilseeds to get remunerative price for their produce. Those who have watched the activities of the Central Jute Committee, the Central Cotton Committee and the Central Cocoanut Committee would easily appreciate how a central organisation is badly needed to serve the oilseeds which are grown in an area bigger than the area under cotton and equal to that under jute. War time developments could have been excellently handled to everybody's satisfaction if there had been a Committee working in 1939. The vagaries in prices, the disorganisation of export markets, the need to formulate a manure policy for our agriculture have to be tackled and solved at an early date. The purchase policy of the British Ministry of Agriculture has not been favourable, and the recent restrictions on the inter-provincial movement of oilseeds and cakes have left many things to be desired. Under the stress of controlling speculation the Government have totally prohibited the hedge market in oilseeds and this has contributed to depress the prices. There is a strong opinion that control of speculation is actually utilised not so much to help the indigenous producer but to reduce the prices of oilseeds now purchased for the manufacture of lubricants and paints for the military. Actually, instead of fighting the middlemen official control results in lower receipts for the primary producer. Had there been a Central Seeds Committee the undesirable features of the market as well as the administration, could have been checked. A central committee therefore, is urgently needed to protect the oilseeds interests, to organise research into the better utilisation of oils, to plan the disposal of oilcakes, and to secure machinery etc., for starting an oil-crushing industry. In view of the fact that part of the profits from the sale of groundnuts to Ministry of Agriculture has been earmarked for the benefit of the cultivator and the oil industry, we have already the fund necessary to make a good start in financing a Central Seeds Committee. It is to be hoped that the Government would set up the committee without any more delay so that oilseeds may prepare to face the problem of peace.

There is one aspect of the question which needs to be emphasised. While the problem of proper utilisation of oilseeds may be viewed from the point of view of the capitalists or the exporter the real need to evolve a scheme of conserving oilseeds for rural development has not received adequate attention.

This is an age of mills, and mass production; and while price factor and the dividends attract the attention of the enterpreneurs the national and social aspect of economic enterprises are often neglected. While it can be easily conceded that no one can possibly arrest the sweep of industrialisation with all its paraphernalia of factories, mass production and labour saving devices there is no reason why a systematic attempt should not be made to resuscitate the small industries and village handicrafts, if they are found efficient in production and specially suited to local needs which cannot be met by large scale factory production. In his book on "Oil Extraction" Mr. Jhaveribhai Patel presents a convincing case for Government aid to the lakhs of village ghanis. He has studied the technical, economic and social aspects of this village oil pressing industry in all details in several parts of India and demonstrates that the village industries generally, and oil crushing in particular, have been languishing not because they are not efficient compared to the mills but because they lack systematic research, direction and organisation. The handicaps of the ghani industry are (1) lack of capital for stocking oilseeds, (2) difficulty in disposal of oil-cake. (3) inefficiency of the present ghanis, (4) lack of side industries and (5) loss of oilman's prestige for genuine oil. All of these are avoidable. Mr. Patel has given full particulars regarding the different provinces, points out the merits and defects of each type of ghani used and suggests improvement. The use of vegetable oil for illumination is now engaging the attention of many who are denied free supply of kerosene. The reconstruction of "Magan Dipti", a lamp which burns on vegetable oil, deserves to be encouraged and the author claims that if vegetable oils are properly utilised for illumination India can save crores of rupees now spent over imported mineral oils, give employment to 1,00,000 ghanis, families and bullocks. The establishment of an Association of Oilmen of India is recommended as co-ordinating agency to tackle the problems of village ghanis. The Co-operative Department whose aim is to eliminate profit motive in society may do well to give attention to the immediate requirements of this vital rural industry. The dying village industry is not economically inefficient and should be restored to its proper place.

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HB. 62.

IRRIGATION IN INDIA

It should be remembered that the pace of irrigational progress in India was not always determined by considerations of finance. The very nature of Indian soil has been setting limits on the possibilities of expansion. The Irrigation Commissions have classified Indian soil into (1) "alluvial", covering the Indo-Gangetic plain, (2) "Crystalline" comprising Madras Presidency, Mysore, Orissa and Chota Nagpur, and (3) "Deccan Trap" consisting of the Deccan proper. They pointed out that 25 per cent of the alluvial tract, 15.5 per cent of the crystalline and only 3.2 per cent of the Deccan Trap were irrigated. The big rivers of India flowed through the alluvial and the crystalline areas while in the Deccan Trap rivers were few and canal construction difficult and costly. This fixed a definite limit to the uniform development of irrigational facilities to all parts of India. The formation of the earth prevented canal irrigation in the Deccan which had to depend more on well construction. Since subsoil water is very deep in this area, boring of wells proved very costly and the field embankments for retention of rainwater in the field and prevention of soil erosion were found to be necessary.

Indian Rainfall

One has to study the nature of Indian rainfall in order to understand the extent and importance of irrigational development in India. Rainfall is not well distributed over the different parts of this vast country or over the different seasons. It is also liable to frequent failures or serious deficiencies. While there are large areas in this country which suffer from drought, there are also vast stretches of land which are devastated by excessive rains. While the Assam Hills have a downpour of 460 inches of rainfall in a year, Upper Sind has to be content with barely 3 inches. The south-east monsoon between June and October causes the greater portion of the rainfall, while during the winter months, the precipitation is very small. During the hot months from March to June, lack of rain is remarkable. South-east peninsula alone experiences heavy rains during the months from October to December. It happens, therefore, that during one season large areas are flooded with rain, while during the rest of the year the same tracts remain dry and waste. The average annual rainfall in India comes to about 45 inches and the year which records a deficiency of 25 per cent is classified as a "dry year", and the year with a deficiency of 40 per cent is classified as one of "severe drought". The experience of agriculturists points out that one year in five turns out to be a dry year and one in ten happens to be a year of severe drought in large tracts of certain provinces. In Madras, the Punjab, N.W.F.P., Sind and in large portions of Bihar, U. P., and Bombay the rainfall has often been uncertain and untimely. Another defect of Indian rainfall lies in its concentration during a period when growing of rabi crops is impossible. This has resulted in a low yield of cereal crops in India.

Advantages of Irrigation

Irrigation has, therefore, been the only instrument for correcting the vagaries of rainfall during the seasons and enabling agricultural yield to increase to the fullest possible extent. There are certain valuable crops like sugarcane which can be grown only with supplementary watering and irrigation therefore serves not only to increase the output of cereals, but it enables the cultivation of new varieties of cash crops. Certainty of water supply ensures security to cultivation, reduces the effects of vagaries of seasons and rainfall. Historically, irrigation provided a weapon to ward off famines and caused the extension of cultivated and cultivable areas. The yield has invariably increased beyond expectations. The cultivator who is enabled to shake off his fear of famines is prepared to sink more capital on land and improve his methods of cultivation. One has only to study the methods of cultivation adopted before and after the completion of an irrigational canal to see how irrigation makes for intensive cultivation. Better methods of cultivation are adopted, more attention is paid to fertilisers and more remunerative crops are grown. Often irrigation led to the expansion of non-food crops at the expense of food crops because they were more paying. The necessity to pay water rates and the extra rent in irrigated areas naturally induce the cultivators to prefer cash crops to crops needed for his own consumption. Everywhere, the major irrigational works have directly helped the commercialisation of agriculture and encouraged the tendency to grow high priced crops for the market instead of producing for the immediate needs of the agriculturist's family. Irrigation brings agriculture more closely within the network of internal trade and international commerce. In as much as provincial revenues in India depend on agricultural resources, the relation between irrigation and provincial finances is indeed very close. Irrigation helps the ryot to avoid debt and keeps him busy over land throughout the year. State revenues are increased with agricultural progress and national taxable capacity increases indirectly. Lack of irrigation increases the weight of famine relief expenditure, lowers the purchasing power of the masses and hence reduces imports and receipts from customs duties and income-tax. Extension of irrigation reduces the frequent migration of destitutes and relieves the pressure of population in favoured spots.

Irrigation is not entirely devoid of dangers. Any extension of irrigation without good drainage system during and after the construction of works, would lead to several diseases which result from water-logging. When big irrigational works were constructed in U. P. and the Punjab, a kind of saline efflorescence called "reh" rose to the surface of lands and reduced the fertility of the area. A good system of drainage has, therefore, to go hand in hand with irrigational works.

Progress of Irrigation in recent times:

There has been a rapid extension of irrigation in India during the past sixty years. The increase in the total area under irrigation in India during the last half century is as below:

1880	..	29 million acres
1903	..	44 " "
1913-14	..	46.8 " "
1929-30	..	51.01 " "

The figure rose to 51.64 million in 1936-37 and stood at 54.95 million acres in 1939-40. In 1929-30 nearly 19.5 percent of the total area sown in British India was under irrigation and in 1939-40 the percentage rose to 22.4 per cent.

There are three forms of irrigation in India, namely, canals, tanks, wells. The progress in respect of the three methods of water supply is indicated below:

Acres irrigated	(000 omitted)	
	1929-30	1939-40
1. *Canals*		
Government ..	23,663	25,125
Private ..	3,387	3,686
2. Tanks ..	6,100	5,666
3. Wells ..	12,680	13,492
4. Other sources ..	4,943	6,575

It can be seen from the above table that there has been a progress in canal irrigation and well construction; but tanks recorded a decline during the decade before the war.

India possesses the largest canal system in the world. In 1939-40 nearly 55 million acres were under irrigation in British India and of this 29 million acres were irrigated by canals, 13.5 million acres by wells and 5.9 acres by tanks. In the same year the total mileage of canals and distributaries under productive irrigation works was 58,281 and under unproductive works 15,054, irrigating only 40 million acres. The Indian canal system consists of perennial and inundation canals. Progress lies in gradually decreasing the latter and replacing them by the former. The perennial canals of Northern India which derive their supply from the snowy mountains are more reliable than the inundation canals which follow the monsoon.

30 percent of the irrigated area in India are served by the numerous wells dotted all over the country. In 1938-39 there were 2.6 million wells in use; while Bengal has practically no well irrigation, the U. P., Madras and the Punjab have extensive use for them. Out of the 13 million acres irrigated by wells, 5.5 millions were accounted for by the U.P. 4.3 millions by the Punjab and 1.4 millions by Madras. Generally, well water is utilised for raising high-grade crops because the cost of lifting water is high. It is also noted that lands irrigated by wells produce at least one-third more than the areas served by canals. Extension of canals decreases the importance of wells to some extent, but the spread of canals increases the store of sub-soil water and thereby raises the capacity of wells for irrigation purposes.

Tank irrigation is most widely prevalent in Madras. In 1939-40, 5.9 million acres in British India were served by tanks. Of this, 3.0 millions are accounted for by Madras while the shares of Bengal and Bihar are 1.4 and 1.0 millions respectively. Generally, tanks have not been a satisfactory source of irrigation. Often when the rainfall falls short of expectations, the tank storage also fails with the result that during the years of famine, agriculturists cannot turn to them for relief.

India possesses some of the largest irrigation schemes in the world. The most important amongst them are the Llyod Barrage works of Sind, the Sutlej Valley works in the Punjab and the Cauvery—Mettur project of Madras. The Llyod Barrage near Sukkur consists of a barrage across the Indus extending to a mile feeding three canals on the right bank of the river and four on the left. The works were completed in 1932 at a cost of Rs. 24 crores and irrigates nearly 5½ million acres. The Sutlej Works involved an expenditure of Rs. 33.31 crores and irrigates 5,108,000 acres. Of this, over 1,942,000 are in British India and 2,825,000 are in Bahawalpur and 341,009 are in Bikaner.

The Cauvery-Mettur system completed in 1934 is known to be the biggest in the British Empire and the largest single block masonry reservoir in the world. It has a storage capacity of 93,500 million cubic feet. It has improved water supply over a million acres and brought 301,000 acres into the range of irrigation. The Cauvery system and the Kanniambadi dam have succeeded in utilising as much as 80 percent of the flow of the Cauvery for productive purposes.

The value of the crops raised by Government irrigational works and the degree of importance of irrigation to different areas are shown in the following table:—

	Area sown 000 acres	area irrigated by Govt. works 000 acres	% of area irrigated to total area sown	Capital cost of Govt. irrig & navign works to end of 1938-39 (in lakhs of Rs.)	Estimated value of crops raised in 1938-39 on areas receiving State irrgn. (in lakhs of Rs.)
Madras ..	35,961	7296	20.29	20,35	20,42
Bombay ..	27,920	439	1.57	10,78	318.3
Bengal ..	30,022	113	0.37	5,32	
U. P. ..	35,462	5307	14.96	29,62	29.34
Punjab ..	28,845	12354	42.82	37,98	39,00
Bihar	17,978	700	3.5	3,56	2,93
C. P. ..	20,900	325	1.6	679	84
N. W. F. P. ..	2,453	478	19.48	315	186
Orissa ..	3,297	401	12.2	330	126
Sind	5,486	4743	86.45	30.20	873.7
Rajputana ..	313	14	4.54	30	3.4
Baluchistan ..	478	145	30.2	145	16.7
Total ..	209,119	32,314	15.45	1,52,80	10,865.1

While the average for British India is as low as 15.45 percent, the percentage of irrigated area to total area sown comes to 86.45 for Sind, 42.8 for the Punjab and 30.2 for Baluchistan and 20.20 for Madras. The Punjab leads from the point of view of the area irrigated by Government works, the value of crops raised from State irrigated lands and the amount of money sunk in Government capital works. The Government have spent enormous sums in the Punjab, U. P., and Madras while Bengal's place is very insignificant. Hardly 1 percent of the area sown is irrigated in Bengal. Her chief problem is one of floods and schemes of regulating floods are the prime requisites of this province.

Irrigation Finance

The development of irrigation became a provincial responsibility since the introduction of the Montford Reforms. Works costing less than Rs. 50 lakhs could be undertaken by the Provincial Government, but those exceeding that limit have to be approved by the Government of India, and the Secretary of State. The old classification of canals into "productive", "protective" and "minor works" was abandoned in favour of a new division "productive" and "unproductive". All irrigational works which are expected to yield, within ten years after their completion, sufficient revenue to cover their working expenses and interest on capital outlay, came under the first category and the rest come under the second. In the matter of raising loans for works, the old restrictions were abolished and since 1920 all works could be financed by loans.

Even from the point of view of provincial finances, the value of irrigation works does not rest on the direct revenues accruing from them. Great importance is attached to the indirect value of irrigation which, during the years of drought, saves agricultural population and cattle and obviates expenditure on relief measures and remissions. In normal years, irrigation increases the productivity of the soil, adds security to agricultural operations and increases national income by more than the cost of irrigation works. In as much as it raises national income, it tends to increase the yield from other government taxes besides the land tax and water cess. If the purchasing power of the ryots is increased, it will indirectly lead to greater imports, larger receipts from customs duties and income tax and the transport system of the country would also reap their own share of the prosperity. Agriculture is the foundation of national prosperity and its depression or improvement generally affects the different facets of national life. There has been a controversy whether the charges for irrigation water are not in the nature of a tax. An analysis of the irrigation finance from the point of view of productive and protective works reveals that the charges for water under protective works are in the nature of a subsidy to agriculture while the rates under the protective works contain an element of taxation. It should be remembered that on the whole, irrigation water is offered on terms which are very favourable for the cultivators. The charges for water represent only a very small part of the extra profit which accrues to the agriculturist. Recently, the basis of fixing water rates have come in for some criticism and suggestions have been put forward for improvement. Firstly, since water is an important element in the cost of cultivation, the rates for water should be directly related to the changes in the prices of crops raised. Secondly, since the general taxpayer, the landholders and the cultivators are likely benefitted they must all share the expenses of irrigation. Thirdly, the charges for water should be revised more frequently so as to make the rates conform to the changing prices of the crops.

Recent Developments

Though the area under irrigation has been rapidly extending since the beginning of the century, the fact remains that today 76 percent of the cultivated area is devoid of irrigational facilities. It has been estimated that more than 95 percent of the cultivated land in C.P. Berar, Bombay. Coorg and Baroda are not protected by irrigation. While on the one hand, the excessive dependence on rainfall still remains, the problems of drainage, soil erosion and waterlogging offer great scope for improvement. The planless destruction of Indian forests during the earlier part of the last century, has brought the evils of soil erosion particularly in riverine areas of North India. With regard to the U.P. Dr. Mukherjee remarks as follows: "In these Provinces alone, the amount of ravine lands, formed as a result of soil erosion and excessive drainage has been estimated at about 8 million acres. Usar lands formed as a result of waterlogging, shallow tillage and defective soil aeration represent another 5 million acres in the United Provinces alone. On the other hand, waterlogged miasmatic wasters expanding in North Bihar and Bengal are shallowing up what were once prosperous agricultural areas, threatening about two-fifths of the latter province with decay and ruin." Those and other problems are yet to be tackled effectively on an all-India basis.

The war has, however, given a fillip to irrigational progress in India. With the loss of foreign sources of foodgrains and with the soaring prices, the importance of agricultural improvement has been widely recognised. The grow-more-food campaign was inaugurated in 1941 and all the provinces and the States are now straining every nerve to improve irrigation so as to ward off the evils of impending country-wide famine.

Post-war Irrigation

A few of the salient features of the Post-war Irrigation Plan can be gathered from some of the recent statements of Sir William Stampe, the Irrigation Adviser to the Government of India. Addressing the Institution of Engineers (India) at New Delhi in November last, the Irrigation Advisor had many interesting things to say regarding the problem of irrigation and food supplies in India. The population of India is increasing at the rate of five million per year and more than 150 million people require additional ration of 4 ounces per head per day. The need for foodgrains is great, and Sir William estimated that the combined effect of swelling population and deterioration in nutrition can be tackled only by increasing the supply of foodgrains by one million tons on the first account and seven million tons on the second, the target to be aimed at being eight million tons. He expressed the opinion that about two million tons of this target figure should be obtained by increase in yields secured from adequate chemical fertilisation and other methods of improving agriculture, while five million tons should be secured as a direct result of improvement of irrigation. He lays down that 20 million acres have to be brought under irrigation if this target is to be hit. An increase of about two million acres within three years is envisaged by the adoption of tube-well irrigation.

The tube-well system of the United Provinces, he pointed out, worked satisfactorily and the U. P. Government are vigorously extending it with the aid of grants from central funds. There were in 1935-36 400 tube-wells working in the U. P. serving 50,000 acres Kharif and 12,000 Rabi; but in 1942-43 the figure of tube-wells rose to 1,700 covering 200,000 acres of Kharif and 440 000 Rabi. The remarkable success achieved by the tube-well system in the U.P. has to be adopted in other parts of the country wherever possible. It is also interesting to note Sir William referring to the Saraswati river "as the basic source of all the deep well water required for cultivation in the plains above." The cross sectional area of the Saraswati appears to be about 148 million square feet, while its "underground discharge may well be of the order of 125,000 cusecs as against 5,000 cusecs, the minimum surface flow of the Ganges at Hardwar". The possibilities of this river, therefore, are undoubtedly great for serving postwar Indian agriculture. Sir William also emphasised the need for using hydro-electric power for tackling water-logging and pointed out that large-scale aerial reconnaissance schemes should be undertaken on the model of the measures taken by the Tennessee Valley Authority in the U.S.A.

Speaking at a press conference at Delhi recently Irrigation Adviser revealed that the Government of India had undertaken emergency irrigation schemes calculated to increase the area under food crops by about 3.3 million acres. These schemes would be put into operation only at the end of 1946 owing to the shortage of equipment and skilled personnel. The Provinces and States are known to be evolving their own irrigational plans to be submitted to the Government of India for proper co-ordination and action; but, excepting some meagre information about the irrigation projects of Madras, Sind and the U.P., the public are not aware of any details regarding the schemes that would be put through just after the war in different parts of the country. Sir William stated that projects covering 5,72,000 acres are under construction while projects covering 5,72,000 acres are under construction, while projects covering 12,24,000 acres are under examination. The emergency irrigation schemes would cost Rs. 588 lakhs but nearly 4 lakhs tons of additional crop would be raised for the public benefit. The Centre, it appears, has agreed to subsidise to the extent of Rs. 44 lakhs.

Perhaps the most notable contribution of Sir William Stampe to post-war planning in India is the definite emphasis he places on regional planning, as against the planning conducted by the administrative units of Provinces and States. The enormous advantage of planning on a regional basis have been brought out in the actual working of the Tennessee Valley programme in the U.S.A. As in agriculture and industry, in irrigation too, the best method of exploiting the water resources of India would be one based on regional planning. The vast potentialities of the power resources of the Sone Valley in helping irrigation, drainage and industries in the U. P., Western Bihar, North Central Bihar and North Central Provinces have been emphasised by Sir Ardeshir Dalal recently; and it appears that United Provinces Government are now contemplating the institution of a Sone Valley Authority modelled on the T.V.A. The Government of India have not yet evinced keen interest in planning agriculture and industries on the basis of the great river valleys in different parts of India; but as an expert who knows the best way of tapping the natural resources the Irrigation Adviser does not hesitate to favour such an approach. Soil erosion in India has gone on unchecked as in different parts of the world. It has been stated by the Irrigation Department Committee that deterioration of land in India has already reached a dangerous stage and several tracts are doomed to become swamps and jungles. There are eight million acres of ravine land in the U. P.; and the desert regions between Rajputana and the U. P. are, it is believed, the result of man's negligence. Soil erosion has been at the root of the partial filling of reservoirs and choking of irrigation canals in the Punjab. Sir William himself estimates that every year nearly 50,000 acres of precious land are forced out of cultivation in India. In the Rawalpindi district, for instance, three lakhs acres of alluvial soil are now under the menace of soil erosion, while the Jhelum district has lost 50,000 acres of cultivable land during the past two or three decades. Nature has been in a violent mood towards Assam and part of Bengal where excessive floods resulted in wasteful run-off. The short-sighted forest policy followed by the Government of India for many decades has decreased the forest areas to dangerously low levels and thereby exposed several tracts to the ravages of soil erosion. Thus, while the menace of erosion covers big slices of regions cutting across Provincial and State borders, it can be tackled only by close and co-ordinated effort on the part of the Provinces and States.

It is well-known that our experience of inter-provincial and inter-State co-operation in the matter of irrigational development has been anything but encouraging. For instance, the Tungabadra Project in South India was postponed for long just because adjacent administrative units found it convenient to argue again and again but not co-operate with a view to serving the common requirements. Till recently, such an important development subject like irrigation—like roads and industries— has been relegated to the impoverished Provinces while the Centre kept quiet doing nothing. As a result of famine and its aftermath a situation has now risen when the Government of India felt the necessity of taking a direct interest in the irrigation development of India, as in evolving the transport plans. At present, the Provinces and states are planning as independent entities. If the findings of Sir William Stampe are to be translated into practice for India's welfare, the Central Government should examine these provincial and State plans and weld them into well-defined regional schemes. There may be a clear necessity to persuade some of the provinces and States to modify their projects and agree to the regional schemes, as that is the best way of exploiting India's resources for the abiding interests of all parts of the country. In this respect it is gratifying to note that the Second Report on Reconstruction Planning proposes the reorganisation of the Central Board of Irrigation so as to make it not only "a clearing house of ideas" but also as a Board of Referees on all matters relating to irrigation, drainage and allied subjects. The Government has also assured in public that the schemes would not be shelved on the score of their being unproductive or marginal projects. The urgency for increasing food supplies is so great that marginal schemes of irrigation should not be neglected because of too rigid criteria of productivity.

While it will be agreed on all hands that irrigation would speed up agricultural production, we should not forget that it often leads to increase of population in favoured localities. As a result of irrigational development in the Punjab and Sind, it has been observed, there has been a remarkable growth of population in these areas. Irrigation tends to increase the fertility of the soil and thus offers a stimulus to demographic forces resulting in rapid multiplication and also attracts population from the neighbouring areas, congested or otherwise. But a well-planned irrigational drive in different regions of this sub-continent would surely go a long way in reducing the frequent migration of destitutes and in relieving the excessive pressure of population in a few areas. Better distribution of poulation would be the result and this would facilitate a better distribution of the country's industries and improve the general conditions of living.

Irrigation is the handmaid of agriculture, since it corrects the vagaries of rainfall, helps in the fullest utilisation of the water resources, adds security to cultivation, increases the yield, particularly of the cash crops, and serves as an insurance against famines. It brings agriculture closer within the orbit of internal trade and rescues the agriculturists from their state of indebtedness. The provincial revenues, as is well-known, are well tied up to the fortunes of the soil and irrigational improvement would naturally swell the Provincial exchequer and inaugurate an era of financial prosperity in the provinces. The public are not yet aware of how far the Government of India's irrigation plan necessitates the import of machinery and other goods from the U. K. but they would be surprised that even emergency schemes are to begin only late in 1946 by which time, it appears, the war is expected to be over.

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TECHNOLOGICAL POSSIBILITIES OF INDIAN AGRICULTURE

Though planning and post-war reconstruction have been before the Government and the public for a long time, preparation for a Plan have not yet reached the stage of technological study of specific problems. Impatience in this matter is no help; and in those directly concerned with the formulation of the Plan, it may even be a danger. But it is necessary that the stage of discussion of principles and fixing the targets should be left behind and that attempts should be made to define the difference between the desirable and the feasible and then to reduce it as far as possible. The official mind has till recently worked in terms of post-war reconstruction rather than of an ambitious plan to increase the standard of living of the masses. Experts of a higher calibre will no doubt be called for when the problems of heavy industries are taken up. But the ground is being prepared for such enquiries. The most valuable part of the spade work so far done is the report of Dr. Burns on the "Technological Possibilities of Agricultural Development in India". The significance of Dr. Burns' work can be understood only when one appreciates the relation of agricultural development to the rest of our economic plan, as also the assumptions under which alone it is worth while making such a study.

The relation of agriculture to our economic planning of the future, it is unnecessary to discuss, in detail. It has been brought out most forcibly by famine and food shortage. The inefficiency of agricultural operations in India has been slow to gain the attention of the public which was ready to assume that it was Indian industry and not agriculture that needed special care. The actual results of the Grow More Food Campaign and the irresponsiveness of Indian agriculture to the stimuli which war time conditions have served as an eye opener. The fact is that, in recent decades, Indian agriculture has been showing signs of deterioration and weakness and *Indian Finance* has often pointed out in the past the dangerous inelasticity of our economic system in general and agriculture in particular. In spite of higher prices, greater demand, national urgency and active official help, the production from land could not rise substantially. This irresponsiveness cannot be explained away by reference to monsoon conditions which generally operate as a powerful factor governing the success of agriculture. The defect is deeprooted in our economic structure and only a sustained and planned drive can pull up the productivity of the soil and revive the acute shortage of foodgrains.

It is not to be supposed, however, that the Indian cultivator has a wooden mind. He is as good, shrewd and experienced as the ryots of other countries and the general conditions under which cultivation is undertaken here are not particularly unsatisfactory by comparison. More than thirty years ago, Sir Henry Cotton wrote: "Elaborate and costly departments have been created, but the indigenous methods of agriculture have not been improved one jot or little by official enterprise. The ryots of India possess all amount of knowledge and practical skill within their own humble sphere which no expert scientist can ever hope to acquire". Much has happened since he wrote with such confidence of indigenous village and cultivation. The progress of science has been since 1920 rapid, and even the democratic countries, not to speak of communist Russia, have achieved wonders both in extensive and intensive cultivation. In the case of India the position is, far from following up the other countries in their race for efficient and scientific production, we have allowed soil deterioration, extreme fragmentation of land, excessive pressure of population and waste of manure. Compare the acreage yields of the important crops in India with those of other countries, the low productivity of Indian soil is glaring. If we compare again the yield of the same crop in different areas of this vast country we are confronted with a wide range of differences in quantity and quality.

The competitive power of India's agricultural staples in foreign markets has been maintaned, not by the efficiency of production, but by the low costs which the ludicrously low standards of living in this country have made possible.

In the period that will follow the present war, agricultural development will be found to be indispensible firstly, for ensuring adequacy of food for the whole population, secondly, for maintaining the place of India's agricultural staples in competitive foreign markets in the face of rising standards of living among the masses and thirdly, for providing a sure and stable foundation for the expansion of the national economy which we seek to achieve. The trends of population and food production in the country have been such as to make the question of possible imports a gratuitous complication. For the export trade, and for indigenous industry alike, it is of great importance that the yield of land should be improved both in quality and quantity. The future of India's raw cotton and cotton industry is bound up alike with a heavier yield per acre and a change over to long staple. Something similar may be said of sugarcane. Linseed had need for the props of preference. And in food, the spectre of shortage cannot be exercised without a heavier yield of rice and wheat. In fact one may go to the length of saying that agricultural development should enable us not only to raise production, but also to reduce acreage. For, there is need to increase the area under forests and to provide more pastures for our livestock.

It is tempting in such conditions to presuppose that most drastic changes in social and economic conditions and to draw up a plan for agriculture based thereon. But that would be just dreaming; and a dream is no substitute for a plan. The limitations of life have to be accepted before they can be got over.

It is best therefore to regard the problem as one of increasing the productivity of agriculture rather than that of overhauling the social and economical structure. The problem can be tackled in two ways. Firstly, making the best of the present day methods of cultivation, applying such measures as are immediately possible under the present day handicaps and secondly, to bring about a thorough reconstruction of not only the agricultural sector, but other aspects of the national economy and achieve the best results from modern mechanical appliances, large-scale agriculture, collective farming and the like. Obviously, this latter approach depends upon favourable political and social changes and can only be the aim of long-term agricultural policy for a country.

In his note on "Technological Possibilities of Agricultural Development in India", Dr. W. Burns seeks to fix the limits of increase in the production of India's cereals, oilseeds, etc. He has

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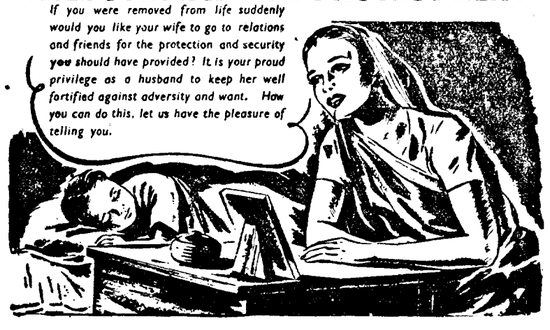
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obviously taken the line of investigation of an expert in Agriculture asked to report on how much India could speed up her agricultural production in the near future making the best of the present day methods of cultivation and indigenous resources and working within the limitations imposed by the social structure or political conditions in India. The results of 5,000 scientific investigations carried out in different places of India at different research centres are brought to bear on the problem of productivity of Indian agriculture and the results are tabulated below:

Cereals, Oil-seeds, etc.	Present All-India yield per acre.	% on increase possible according to Dr. Burns.
1. Rice ..	738 lbs.	30
2. Wheat ..	640 lbs.	to 1,200 lbs. per acre in irrigated and 600 lbs. in unirrigated land.
3 Jowar ..	Irrigater, 1,200 to 1,500 lbs. barani, 100 to 700 lb.	20 per cent
4. Bajra ..	320 lbs.	25 „
5. Maize ..	800 lbs.	25 „
6. Gram ..	356 lbs.	to 500 to 600 lbs. per acre
7. Pulses ..	800 lbs. if sown alone. 200 to 300 lbs. in mixture.	(No opinion is given).
8. Linseed ..	500 lbs. in Deccan	No experiments in improved variety. Hence no opinion given.
9. Brassicoe oilseeds ..	373 lbs.	25 per cent
10. Ground nuts ..	900 lbs.	11 „ i.e., to 1,000 lbs.
11. Castor ..	259 lbs.	10 per cent.
12. Sugar cane	15 tons	30 to 55 tons.
13. Cotton ..	90 lbs.	No target fixed, because the matter is one of national or international policy.
14. Jute ..	16 maunds.	25 per cent.
15. Fibres ..	...	He advises that India should not compete with Africa in Sisal.
16. Tobacco ..	100 million lbs. of cigarette tobacco on 100,000 acres in 1940-41.	to 200,000 acres of cigarette tobacco producing 150 million lbs. of flue-crued tobacco contemplated.
17. Fruits ..	No statistics available.	No target possible but possibilities are enormous.
18. Vegetables	No statistics.	No target. A survey of marketing of fruits suggested.
19. Potatoes ..	No statistics, but 5776 to 3275 in unmanure and 10,140 to 20,000 lbs. in manured tracts of India.	Production can be doubled.

The methods suggested for hitting the targets are better manures, improved varieties of seeds and implements, insect control, crop rotation, more scientific cultivation and conservation and maximum utilisation of available fertilisers, water, labour, soil and livestock. That the cost of cultivation is an important factor is fully realised by Dr. Burns and he, further, seeks to minimise the waste of time at present imposed on the rural population. The targets he has suggested are impressive and he believes that India can hit these targets without much difficulty in the near future. In order to achieve these aims he suggests that the exitsing means of the Provincial and State Agricultural Departments must be enormously strengthened in trained men, funds, and in power. He believes that the existing inamdars, jagirdars and zamindars can be made excellent instruments for organising collective effort for agricultural progress. Village organisations, he points out, can do a big job, particularly for soil conservation and collective effort for avoidance of waste of all kinds. Since mere persuasion and propaganda may not achieve much particularly in this country, Dr. Burns rightly suggests that "while proceeding with all necessary caution, we must not be afraid of invoking a certain degree of compulsion to ensure such collective action". With regard to the application of vernalization in India he holds the opinion that the scope is very meagre. The usefulness of mechanisation is limited to the eradication of deep-rooted weeds, clearing of jungles, making roads, anti-erosion work, and cultivation of large estates, particularly of sugarcane. It is best suited and economical only for large farms. Methods of collective farming methods, Dr. Burns points out are applicable only if peasant structure of agriculture can be abolished in India as quickly as the Soviet planners could do in Russia. It is, however, useful here to recall the conclusions arrived at recently by the Board of Agriculture and Animal Husbandry. The general applicability of tractors is deemed impracticable under the present conditions and political opposition is mentioned as a major stumbling block to collectivisation. The Hot Springs Conference also enunciated the principle that "the inherent natural and economic advantages of any area should determine the farming systems adopted". Further, the farming system should be such as to "maintain the optimum level of productivity consistent with ensuring the preservation of basic resources for future generations".

Dr. Burns' report will surely be received with great satisfaction and from the point of view of an expert's approach to the agricultural problem his recommendations are exceedingly useful. Together with the Khareghat Memorandum on development of agriculture and animal husbandry, this Note will form the basis of future agricultural policy of the Government of India. But the Note is obviously the starting point of other enquiries, and irrigation schemes, hydro-electric works, manufacture of artificial fertilisers, construction of roads, etc., have to be formulated and put into effect if we are to attain the targets fixed by Dr. Burns. A comprehensive All-India Soil survey and collection of reliable and regular statistics are essential for planning production. It is to be hoped that the implication of Dr. Burns report will be followed up without loss of time.



PROBLEMS OF THE MICA INDUSTRY

CORRECTIVES TO EXAGGERATION

By CHANDMULL RAJGARHIA

The main issues in the controversy that has been unfortunately raised about the future of the Mica industry in Bihar have been discussed before by me in the columns of Indian Finance. Without going over the ground already covered, I should like to aid public appraisement of these issues further mainly by citing here the opinions of some indisputably high authorities on their subject. As is well-known, the current controversy centres round (1) Mica theft (2) surface switching and (3) mechanisation; another article is to be regarded as suplementary to my previous instituitons on this subject.

As regards theft in the mica fields, nobody can or is concerned to deny its existence. What matters is the scale of the theft, the extent to which it is inevitable. The scale of mica piracy is never proved directly but fallaciously surmised from a lot of unrelated and misinterpreted statistics. After all, the wearer should know when the shoe pinches and the following from our important producer should convince the public that the extent of theft in the mica fields is grossly exaggerated.

Here are the views of Mr. U. C. Lall, General Manager of Messrs. Chottaram Horilram Ltd., Kodarma, the present leading producer of mica, on this subject:

"Thanks for your letter of the 27th. 'Mica Piracy' the much discussed problem of the mica field—is not a fiction but a fact, though much exaggerated. It is, in my opinion, an extremely difficult task to give any approximate estimate of the volume or proportion of mica that passes into the hands of the thieves. Coming pointedly to the magnitude of theft in my own firm, I am unable to make an attempt to conjecture what I am losing; but certainly it is not so large in proportion to the total of my *production as to affect my business appreciably.*

And I, as the Managing Director of one of the three largest producers of mica in Bihar fully agree with the views expressed by Mr. Lall.

From the above statements, it is more than clear that out of three largest producers of mica, two are not appreciably affected by the existence of 'Mica Piracy.'

It is true that the problem of mica piracy is not a fiction but a fact. But since it does not affect the business of a majority of the leading concerns appreciably, its magnitude cannot possibly be greater than that of similar illicit elements in other spheres of life.

A very small section of the trade has given a much exaggerated shape to this evil. Under the circumstances, the existence of the Mica Control Order for the purpose it is being practically used at present, does not find much justification.

As regards surface scratching, persistent insistance by a section of the trade on Government regulations prohibiting surface scratching would lead one to think that in the alternative some scientific methods of prospecting are being suggested for discovering new substantial deposits.

But one has only to look into the history of the various mica mines in Bihar and elsewhere to recognise that no such alternative exists. The much-maligned surface scratching is the humble beginning of every successful mine; and it is futile to seek a nobler parentage for the mines of the future.

There is not even a single exception in the entire Bihar field where a mine was discovered by a concern through systematic prospecting right from the surface. The following is the view of Dr. J. A. Dunn on this subject:

"Most of the mines operating to-day are re-opened old mines which were originally worked either upperchella or down to water level, and abandoned when pumping became too heavy to dealt with by hand baling or by hand pumps or when the ventilation became so bad that breathing was impossible or when the particular run of mica came to an end."

(No. 43 of Dr. Dunn's Mica Bulletin No. 10 published in the year 1942.)

Dr. J. A. Dunn also gives a brief account of how mica deposits are worked in the United States of America in the above bulletin, which runs as follows:

"Most of the smaller veins are worked with little capital by individual miners or small groups of miners who "out of the vein as they go along, using the minimum of machinery. Most of the larger productive mines are old workings which had been abandoned and re-opened intermittently either because of such factors as vagaries in the mica shoots or because the mica market rendered them periodically unattractive."

From the above, one can easily understand that the system of working adopted in India compares well with the one followed in a country like the United States of America, the foremost country in the advancement of Science. It could hardly be otherwise since there is no satisfactory alternative to it. The attack against surface scratching is sought to be strengthened by exaggerating the place and significance of mechanisation in the mica industry.

A lot has been said regarding the mechanization of mica mines and from the way in which it is used to decide vital issues affecting the industry and the trade, the public is apt to think that there are numerous, intricate problems in the mining of mica which call for more or less complete mechanisation.

This is entirely erroneous. In comparison with the mining of other minerals, there are a very few of such problems in mica mining. Without any mechanization whatsover, a mine can be very scientifically developed up to a certain depth, beyond which the cost becomes prohibitive. Mechanization becomes important only with depth, because firstly, broken rock has got to be hauled up to the surface for proceeding further, and secondly, the water inside the mine has got to be dealt with. These are the two main problems which, in the absence of mechanization, make the cost prohibitive after a certain depth. But the nature and extent of mechanization should in no circumstances be exaggerated. All that is needed for mechanizing a mica mine is a vertical boiler of 8 to 10 N.H.P., one or two small size pumbs, and a baby hoist for hoisting debris from the mine. And in case a rapid development is necessary with a view to get more production, a small compressed air plant has to be added.

Generally speaking, an average mine can very easily be tackled with a plant capable of producing 300 to 400 cubic feet of air per minute at the best. In pre-war days, a mica mine could be thoroughly mechanized with 20 to 25 thousand rupees, which is negligible in comparison with what is required by other sections of mining.

The extent of mechanical equipment required is solely dependant on the quantity of expected raising per day and the extent to which a mine can be developed both in the vertical and horizontal directions, which gives an indication of the various problems to be dealt with in the exploitation of the valuable mineral. It can be said therefore that the little mechanical equipment required is solely meant for economic development and exploitation of the mineral. It does not add a bit to the system of the methods of mining.

In this connection I may give below the views expressed by the United States Tariff Commission on the Mica Industry Report No. 130 Second Series published in the year 1938.

"In the final analysis, the problem of how most economically to prepare for and conduct mica mining operations is baffling to the Engineers as well as to the small miner—more particularly perhaps to the Engineer. It is often said that modern equipment and methods are needed for the better exploitation of mica resources But where the value that can be won is impossible to determine beforehand the question of how much investment is justified is not easy to answer. If there were chances for very large gains, it would be a factor, as it is in many other mining ventures. But with mica, rich prizes are extremely rare—the best outcome that can reasonably be expected is modest."

"Should even half of this total come from a few say five or six of the larger mines, it is obvious that no great investment in modern machinery, or 'dead qork' development would be warranted. In general, therefore, it is fairly common rule that all work must pay for itself as it proceeds, a condition which naturally precludes much dead work. Moreover, there can be no such item, accurately determined as 'ore reserves' appearing as an asset on the

books of a mica mining company, and a 'Reserve for depletion could only be an annual write off of some arbitrarily determined, portion of the investment. Capital does not gravitate toward investment of this kind and so it is usually an *impecunious* prospector and not a well-financed company, that is found searching for this important mineral."

"In the United States and Canada there are several cases on record of mining operations which have been undertaken by large companies, amply financed and possessed of first class engineering talent.. Perhaps the best known of these is the venture of the Westinghouse Electric and Manufacturing Co. in the Black Hills of South Dakota. This Company undertook the development of a promising mica field on a relatively large scale, the financial outcome of which is not generally known. At three of its mines, the New York, the Crown and the White Spar, vertical operating shafts were sunk in the country rock hanging wall, tapping the pegmatite dyke at considerable depth, and cross cuts (all through barren country rock) were run at different levels. At the New York mine, the vertical shaft was 315 feet deep. Underground workings were electrically lighted and the pumps were run by electricity. The systematically well-run camps for the men were supplied with arc lights. Heavy boilers, engines, dynamos, motors and compressors were hauled in the mines and installed at considerable expense. All such equipment and development work is usual at metal mines, and some non-metal mines, but very rare at mica mines. Profit and Loss statement and balance sheets covering this period are not available. It is known only that the large quantities of high grade mica were taken out and shipped to the company's plant at Lincoln, Nebr. where it was graded and classified, punched to desired shapes by electrically driven machinery and even split, for use in making built up board. All the mica thus produced was for the company's own use, but in 1911, after 3 or 4 years' trial, the company withdrew completely from all such activities and purchased its mica sheet and splittings abroad. *Modern systamatic, well-financed mica mining in a prolific field had been given a thorough trial and was abandoned.*

The following is what Dr. J. A. Dunn says in his book on Mica:

"A few mines are mechanically equipped and worked according to modern mining technique but, on the whole, attempts to introduce well organised engineering methods have not been very successful. The reason for this appears to be due to the relatively small size of the veins and irregularity of distribution of the mica.

The factors determining the method of mining are;

1. Possible extent of the load or the vain both in vertical and horizontal directions.
2. Thickness of the load or vein.
3. The dip of the vein.

The modern methods of scientific mining are designed to suit the conditions where the expected raising from a mine is expressed in terms of thousands of tons per day, and the expected expense is at least over a thousand feet in the vertical direction and at least over a mile in the horizontal direction. There are a number of scientific ways of ascertaining the expected expense of an ore body reducing the gambling elements to a negligible percentage.

But most unfortunately for mica, the present day science has completely failed to render any protection to this industry against the collosal gambling element involved in determining the expense of a deposit. The deepest section of a mine yielding mica today may suddenly turn barren tomorrow and there is nothing to tell us whether the sun after the storm will appear again on the horizon. It may or may not, and this is the worst part of the story. The views of the United States Tarif Commission on the above subject are as follows:

"Very little information is available concerning mica mining conditions in other countries, but as the nature of the occurrences of mica is almost identical in all localities, the methods of recovery are also much the same. The controlling fact is that mica rarely if ever occurs as a persistent seam; it is spotty and irregular, and when a pocket of streak of book mica plays out, it is impossible to say where, or in what qualities its continuation, if any, may be found.

However, returning to the main subjects once more, one will have to admit that even in the case of the biggest mica mine we have today, the raising is not even 100 tons per day. Moreover, the extent to which the biggest deposit can be be developed today is so small in comparison with that of other metalliferous mines that, except the simplest mining methods, any elaborate introduction of science is absolutely unnecessary and undesirable from the economic point of view.

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MANUFACTURE OF DDT IN INDIA AND ITS INDUSTRIAL IMPLICATIONS

By **E. K. NARAYANAN**, Birla Laboratories, Calcutta.

Dichloro-Diphenyl-Trichloro-ethane, contracted DDT, is a synthetic chemical, which, recent researches, stimulated by the war, have shown to be one of the best insecticides known. Sprayed as a 1 to 5% solution in kerosene or other organic solvent, or used as a paint or a white-wash on walls, or incorporated in linen, it acts as a contact poison on many insects. The treated surface remains toxic for months and the insecticide is not washed out with water. As mosquito-borne malaria alone is responsible in India for nearly 100 million attacks and about one million deaths per annum, manufacture of insecticides in general, and DDT in particular is bound to have a far-reaching effect on improving India's public health. As India is now planning for her post-war needs, this paper on the manufacture of DDT in India and its bearing on her industries is likely to be of topical interest.

The story of the discovery of DDT is full of lessons for industrialists and scientific men, as it indicates the value, both of pure and applied research in industrial matters. In 1874, a German student, Othmann Zeidler, synthesised it to satisfy his chemical curiosity. In 1939, Paul Muller of the Geigy Colour Co., Switzerland, discovered its insecticidal properties, and Geigy took a patent on the drug. Preparations containing DDT were marketed under the name 'Gesarol' in the U. S. and 'Neocid' in the U. K. The insecticidal value of DDT was not appreciated by the public and Geigy could not exploit its patent right.

Soon after Pearl Harbour (Dec. 1941), however, American Chemists and Entomologists collaborated with an intensity never before done, to discover an insecticide to protect their fighting men against insects like the malarial mosquito and the typhus carrying louse. Pyrethrin and rotenone, which were known to be potent insecticides became more difficult to obtain to the Allies, as Japan gained control of some of the sources of these drugs. Supplies from other sources were very inadequate for military needs. Therefore, search was directed towards synthetic substances, and among many chemicals investigated, Geigy's DDT was found most satisfactory, although inferior to pyrethrin in the knockdown effect. However, it possesses the compensation that unlike pyrethrin but like rotenone its effect is lasting. Synthetic producibility being the chief advantage. DDT was chosen for large-scale production and by the middle of 1943, American chemical factories like the Cincinnati Chemical Works and Du Pont de Nemors began producing this drug on a modest 1,000 lbs. a month basis. In 1944, two more factories joined production and the rate rose to 350.00 lbs. a month. The estimated production rate for 1945 is 1.7000 lbs. a month or nearly 25 tons a day! Yet, the supplies are limited to the army alone.

Britain claims to have had a share in the preliminary investigations leading to the discovery of DDT. Production, however, seems to be limited in Britain, as no figures are available on this point. As in other matters, America seems to have had all the credit for its large scale production.

India could not share in the noble search after DDT. A secrecy veil surrounded the early work in America and Britain. When censorship was lifted towards the latter part of 1944, much of the work was over and scrappy information on its preparation began to be published. A few Indian scientists following these hints worked up their way and unravelled for themselves all the details necessary for DDT manufacture. Among the Calcutta firms, Messrs. Birla Laboratories have announced their projected manufacture. The public have taken kindly to this announcement and numerous enquiries are pouring in. Public Health is a neglected subject in this country and pharmaceutical houses have not also taken very seriously about preventive drugs. In a malaria-ridden country any enterprise to manufacture a drug to exterminate the mosquito, is a humanitarian work as well.

A simple calculation as given below, indicates that India would be requiring 650 tons of DDT per year to fight the malarial mosquitoes in the highly endemic areas alone. The number of persons attacked by malaria is about 100 millions per year. Assuming 6 persons to a household, 17 million houses are affected and they are to be sprayed once every three months. An average house is of the size 20'x10' with an inside surface area of 1000 sq.ft. By experience it is found that for 50,000 sq. ft. of surface at least 1 lb. of DDT is required for spraying as a 5% solution. So, an average house requires about 1/3 oz. in three months. On this basis 17 million houses will be requiring about 650 tons of the insecticide in a year. The requirements would be very much more if DDT is used as a general insecticide in all houses and in mosquitoe breeding places throughout India and also for veterinary, agricultural and horticultural purposes. In making these calculations, it need not be supposed, that no account has been taken about other insecticides produced in the country. The only other insecticide of value is pyrethrin but its production is very low in comparison to the demand. The pyrethrum plant grows only in high altitudes and in spite of its insecticidal value being widely recognised as early as 1938, the yearly rate of production has been only about 75 tons against 1000 tons required by malarial India. Further, recent trends in mosquito control seem to advocate the use of a mixture of DDT and pyrethrin in preference to either insecticide alone. Therefore, pyrethrum production is not likely to affect DDT manufacture.

Taking the minimum antimalarial needs of India into consideration, 650 tons of DDT have to be manufactured per year, out of which about 30-40% should be ear-marked for Bengal alone. At the present market rates of raw materials, a pound of DDT would cost from Rs. 10 to Rs. 12/- so that India would have to spend about Rs. 1.45 crores per year. Large-scale antimalarial operations are envisaged in the post war period, and sufficient money is likely to be set apart.

The requirements of raw materials for the manufacture of 650 tons of DDT are given in Table I. It is common knowledge that the above raw materials are all being produced in fair amounts in India. The figures for the yearly production of these raw materials are published till 1940. Being strategic chemicals, the Government do not allow the publication of the production rates since 1940. Benzene and chlorine were not produced in any appreciable quantities at all before the war. Well-informed commercial circles believe that considerable amounts of these are being produced by a number of factories now, and the total output is of the order of a few thousand tons a year. The production of sulphuric acid and alcohol has also increased to three or four times their 1940 levels. The available data on the production rates of these 4 chemicals are given in table 2. It will be seen that the requirements of the raw materials for manufacturing 650 tons of DDT are considerable in comparison with their 1940 level of output. Recent estimates made by Dr. Venkataraman of Bombay (Journal B.S.I.R., 1941, p. 290) indicate that although the production of raw materials for a dyestuff industry is considerable, the production is already allocated to existing industries. It is, however conceivable that quite a large number of special war industries, such as the munition industries have sprung up in recent years and they are utilising the major fraction of the increased productions of basic chemicals, in quantities three and four times the prewar civil needs. As the war is fast coming to a close, the munition industry would come to an end and enormous quantities of basic chemicals such as sulphuric acid, chlorine, alcohol and benzene would become available for any new industry. So the conclusion arrived at by Dr. Venkataraman may not apply to the present time. With regard to benzene, Dr. Venkataraman has already made the statement that the supply is in excess of the demand. It would appear, therefore, that with regard to the availability of raw materials, the stage is well set for the manufacture of DDT in India.

Table I.

Material.	Requirement per year for malarial India to manufacture DDT—650 tons.
1. Alcohol	450 tons
2. Sulphuric Acid ..	13,500 „
3. Benzene	630 „
4. Chlorine	5,300 „

Table II.

Material.	Annual Production in 1940.	Imports before war
1. Alcohol	6,800 tons	Nil
2. Sulphuric Acid ..	30,730 ,,	Negligible
3. Benzene	Negligible	No figures
4. Chlorine	Nil	205 tons

The optimistic conclusion for DDT manufacture reached in the above discussion is based on the assumption that the production of most of the required raw materials has risen to three and four times their prewar levels and the increased production is meeting some special war demand, which would come to an end with the war.

If a constructive plan for co-operative work by a net-work of heavy industries like the coal carbonization industry, fermentation industry, electrolytic alkali industry and the sulphuric acid industry be made and the necessary equipment for the increased production of raw materials fabricated or imported, India would have solved her DDT problem. This lack of co-ordination between existing industries has impeded much progress in the past. In starting new manufactures, there has always been a tendency to approach Government for support to import raw materials, which could very well be made in this country, possibly at an enhanced cost to start with. This habit is indicative of a certain amount of lack of courage in industrial undertakings both in the technical men and the capitalists. Such co-ordinated courageous undertakings alone would provide the right type of industrial experience. One argument against such undertakings is that the cost of the Indian made product is more than that of the imported one. It is wrong accounting to include the extra expenditure towards the cost of the product. The extra cost is not a recurring item, but is an expenditure in organization and industrial education. There is sufficient national fervour in the country to support an Indian made product even though it may be costlier. A practical scheme for a bold co-operative undertaking for DDT manufacture may therefore be evolved in the following manner; certain indications may be given for effecting economy.

1 Alcohol Requirement.

The 450 tons of alcohol required is only 1/20th the country's pre-war production. The resources for increasing production are many; already sugar manufacturers are only too willing to ferment their molasses into alcohol.

2. Sulphuric Acid.

The 13,500 tons of sulphuric acid required, are nearly 1/2 the country's pre-war production. According to Dr. H. K. Sen (Basic Nitrogen Industries, 1943, J. Indian Chemical Society) about 26,000 tons of ammonium sulphate are produced in India per annum from the coal carbonization industry. It can be calculated that 19,300 tons of sulphuric acid would be required to produce this amount of ammonium sulphate. It is possible to so arrange that the sulphuric acid used in the DDT manufacture is made again available for ammonium sulphate manufacture by a simple process of recovery. In normal times, when sulphuric acid is as cheap as Rs. 75/- a ton it may not be necessary to go in for this recovery method. At any rate, it is indicated how DDT manufacture would not be a strain on the Sulphuric Acid manufacture of the country.

3 Benzene.

Dr. Venkataraman's report to the BSIR, loc. cit., indicates that the present production of benezene is in excess of the demand, which, however, may increase as soon as other synthetic and plastic industries are started. There is no need to be despondent about benzene on this score. The coal statistics indicate that about 25-30 million tons of coal are raised in India per annum of late, and of this all but 4 millions are burnt away, as such, along with their valuable by-products, of which benzene is one. Incidentally it may be pointed out that the cost of the benzene wasted alone works out to Rs. 18/- crores annually at the present Calcutta rates. Whatever may be the arguments now adduced for this wastage of valuable raw materials (H. K. Sen, loc. cit. Venkataraman, Loc, cit., Fraser, 1943, J. of the ESIR) be, there is no dearth of benzene in India for any number of synthetic industries. Co-ordinated planning of industries alone can save this national wastage. The 4 million tons of coal are being carbonised in India with the specific purpose of getting good quality smelting coke. The by-products, gas and tar, were not utilised till of late, when due to the pressing demands of the war partial utilisation (Only 0.8 to 1.6 gallons of benzene per ton of coal are recovered at present as against 3 gallons recoverable) has been organised. It is feared that, in case sufficient demand is not created in the country for the utilisation of the by-products now specially recovered for the war industries, the chances are that they would again be wasted.

4. Chlorine.

The chlorine requirement of DDT is somewhat high. In fact DDT is 50% chlorine. But manufacture of chlorine is a simple enough matter, as can be seen by the present position of the Indian chlorine industry already referred to. It is understood that a few chlorine plants have been successfully fabricated in India, by Indian chemists working in non-industrial institutions. It is also known that a few commercial organizations interested in electrolytic alkali could not manufacture it themselves as there is very little demand for by-product chlorine in India. The annual import of chlorine before the war was about 200 tons, probably for water purification and bleaching powder purposes only. DDT manufacture therefore solves the by-product chlorine problem.

5. *Equipment for DDT Manufacture.*

There is no necessity to import machinery for DDT manufacture in India. The equipments required can all be constructed here.

It will be seen that the problem of DDT manufacture in India is a simple one. The raw materials necessary are all being produced in fair amounts in the country. The equipments can be easily fabricated. Incidentally, it would be the first synthetic aromatic chemical industry worth the name in India. It would give a fillip to the coal carbonization industry and the alkali industry, who experience difficulty to find an adequate demand for their by-products. The sulphuric acid that is being used in other industries may first be used in DDT manufacture and recovered. Valuable by-products like Hydrochloric acid and the dichlorobenzenes produced in the DDT manufacture would stimulate new industries. An apparently simple insecticide would revolutionize the Indian Chemical industry in general.

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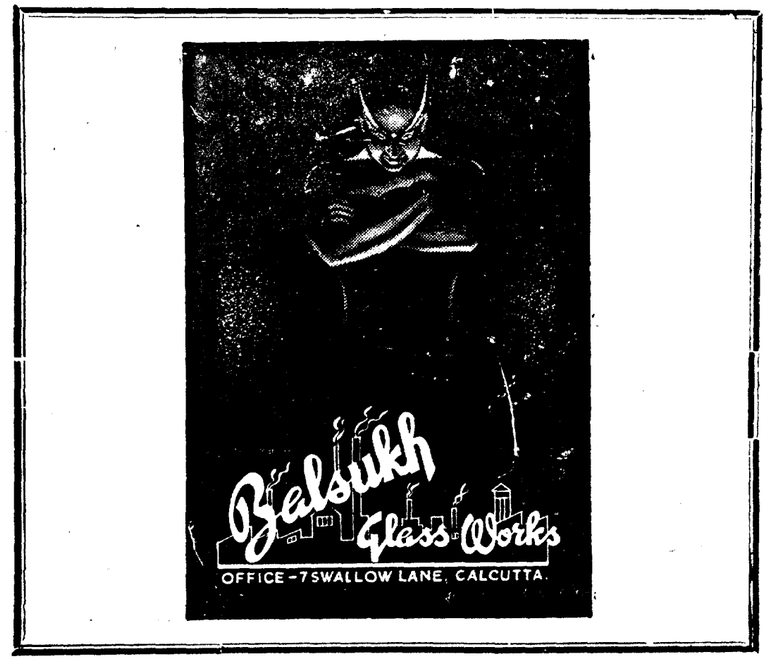
GLASS INDUSTRY—PROGRESS AND PROSPECTS

Glass manufacture was well known in India for several centuries now and the industry was fairly well established even in the 16th century. But modern methods of production came to be adopted only at the end of the last century. Glass did not feature in the export schedule and during the four decades before the last Great War imports had actually increased by leaps and bounds till the trend was reversed after 1920. Owing to the high cost of raw materials needed for the manufacture of good glass the Indian industry had to face severe competition from foreign goods. However, as a result of the energetic efforts of a few businessmen and industrialists glass industry progressed surely but slowly and the annual output of Indian glass which was valued at Rs. 35 lakhs in 1904-5 came up to Rs. 80 lakhs in 1914-15 and as a result of the progress achieved during the first decade after the last war the figure rose up to Rs. 100 lakhs in 1930-31. This war naturally has given a powerful stimulus and while the 1940-41 production was valued at Rs. 2 crores the value of glass goods produced in India during 1942-43 was placed at Rs. 4 crores. The course of imports of glass and glassware also reveal the same story of internal progress. In 1904-5 goods worth Rs. 113 lakhs were imported. In 1920-21 the peak level of Rs. 338 lakhs was reached but after this year we witness a clear but gradual decline in the import.

To-day the glass industry ranks as the sixth or the seventh in order of importance in Indian industrial structure. At present the industry is organised in two well defined forms. There are the cottage centres in the U. P manufacturing bangles made from glass blocks manufactured in large factories, while the big factories in Calcutta, and Bombay successfully turn out lamp chimneys, and globes, tumblers, jars, bottles, sheets, electric lamp sheets, etc. At present over 200 glass factories in India are run on modern lines and are employing no less than 50,000 workers. The value of their total output is estimated at Rs. 5 crores and the amount of capital invested comes to a few crores.

It is well known that the Government of India failed to come to the help of this industry for a long time. As early as 1926 the All-India Glass Manufacturers' Association made out a clear case for tariff protection to the manufacture of all classes of blown and pressed glassware. The Government did not move favourably. Again in 1929 the U. P. Glass Works made representations asking for protection for figured and rubbered glass and for the sheet glass industry. Again the question was pressed in 1931 and the Government of India appointed a Tariff Board in 1932 which reported only in 1935. The hopes of adequate tariff protection have been dashed to the ground and a more rebate on imported soda ash alone was recommended. Nearly ten years have passed and the question has not yet been taken in right earnest. The recent decision of the Government of India to start a Central Glass and Silicate Research Institute under the auspices of the Council of Scientific and Industrial Research is calculated to help the industry in solving some of its technical difficulties. While this gesture from the authorities is well appreciated the industry now needs categorical assurance of sympathetic help so as to stabilise the wartime achievements and face the post-war competition.

With regard to the question of the cost production it has often been pointed out that India is definitely at a disadvantage in procuring adequate supplies of soda ash and salt cake at favourable prices. The American, German and Belgian competitions are more favourably placed in this respect. If the cost structure of the Glass industry is closely analysed it can be seen that the industry bears a heavy strain owing to the high cost of power and raw materials. Compared to foreign producers India is at an advantage only in the matter of the wage bill. With the growing discontent among the labouring population it can be safely predicted that this advantage may not last long. Indian industries should aim at standing on better grounds and not exploit the unhappy situation in India where the wages paid can be kept low. Attempts must be made to manufacture soda ash in India and it is hoped that the lead given by the Dharangdhra Chemical Works Limited would be emulated by others for national progress. There is another point to be borne in mind by the captains of glass industry. At present India has neglected certain profitable lines, viz., scientific glass ware, eye glasses, termorflasks, hospital ware, etc. Steps should be taken for the manufacture of these items so that the rapidly growing internal market can be captured and retained. Uptodate machinery and better furnaces should be set up so that the quality of the products as well as the capacity of the factory could be increased. In his presidential address at the inaugural meeting of All-India Glass Manufacturers' Federation held in June 1944, Mr. D. N. Sen drew pointed attention to the fact that more capital has to be invested if research and mechanisation are to be organised for the technical efficiency in the industry. But since the Government have not yet given positive assurances of help industrialists are hesitant in sinking more funds. While a few specific industries such as aluminium, calcium chloride, steel pipes, starch, etc., have been assured of post-war protection, no assurance has been extended to the industries which have grown up during the war to meet essential civilian or even military supplies. The contribution of the glass industry to war effort is creditable and while the proposals to start a Central Glass and Silicate Institute and a permanent Tariff Board are welcomed, real encouragement should take the form of a clear statement of post-war fiscal policy calculated to protect Indian industries against the onslaught of foreign products. It is urged that, besides tariff protection facilities for importing machinery from abroad and better transport facilities should be offered if the glass industry is to progress during peace time. Grave concern is also expressed at the present-day working of the imports control under which glass containers, bottles, etc., are being allowed to be imported while India has ample capacity to produce these items. It is really significant that while shipping space for importing about 20 tons of machinery for the manufacture of afabrin has been refused, the Government could conveniently allot space for procuring bulky bottles from the U. K. Already the industry is worrying about the lack of shortage of internal transport, and unless the Government comes forward to give a helping hand the future will be dark and dismal. The urgent need of the hour is, as pointed out by Sir Shri Ram recently, a thorough survey of the resources of the country with a view to finding out available deposits for improving the glass manufactured in this country.



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PLANNING FOR SMALL-SCALE AND COTTAGE INDUSTRIES

AN ALL-INDIA BOARD FOR HANDLOOM INDUSTRY

It is gratifying to note that the special importance of a scheme for the preservation and revitalisation of cottage and small scale industries has been clearly recognised by all planners for postwar development of India. Much emphasis has been laid on this aspect of national economic regeneration in the Wardha Plan outlined by principal S. N. Agarwal. Gandhian ideals of simplicity, dignity of labour, non-violence, decentralisation, village self-sufficiency, etc., are sought to be given prominence in the Wardha plan. There is a great force in the contention that excessive attention towards the speeding up of production without adequate arrangements for the equitable distribution of national income would accelerate the social and economic ills of India. It is strongly felt in some quarters that in any plan for economic development of India care should be taken to provide for the initiation of schemes calculated to bring prosperity to the villages first and not after the urban areas have had their fill. Gandhian plan emphasises the point that the flow of reconstruction finance should be so channelised as to fertilise the pockets of the rural folk and the under dog first instead of swelling the bank accounts of the capitalists and pleasing the urban classes first. Widespread support is given to the view that the cottage industries should be made to survive not as a relic primitive economy but as the very corner stone of a healthy decentralised Indian economic system. Students of rural economics know very well that planning for the villages offers several peculiar problems not faced in tackling the requirements of the urban areas. The village requires an economic plan covering a close intermingling of several occupations well schemed out for the different seasons of the year. The villager, it should be remembered, is a cultivator for four or five months, a weaver for some time, a carpenter and many things besides. Full scope for a variety of cottage industries should therefore be given if the purchasing power of the ryot is kept tight at a satisfactory level. The town worker can be depended upon to earn his wages after a few hours of regular work in a factory. He can be attached to a single factory for the whole year and his wages generally keep steady and secure. The seasonal nature of his vocations call for a specially suited scheme providing for regular work in different small lines. That is why a proper planning of village industries is supremely important in a country where agriculture is the foremost industry and there is excessive pressure of population on rural areas.

As Dr. P.J. Thomas pointed out recently there are five good reasons why cottage industries should be made to thrive. (1) "We cannot afford to throw away the employment now given by the small industries to about fifteen million persons. (2) We must pursue our industries, as far as possible, in such a manner as to occupy our plentiful labour supply and economise on capital; this will be possible only through giving an important place to cottage industries. (3) The scattered and decentralised character of our cottage industries has many military and tactical advantages. (4) The aesthetic claims of handicrafts are even more formidable. (5) On social grounds also, the survival of cottage industries is desirable.

A thorough investigation into the need and prospects before every cottage industry should be made with a view to deciding which of them should be retained, and which would thrive with the use of electric power. Marketing should be so planned as to leave a definite sphere for the products of cottage industries. The competition from mills should be regulated and the cottage workers should be linked with the workers in the factories.

The following are the important handicaps of the small-scale and cottage industries in general: (1) Difficulty in securing adequate and regular supply of raw materials profitably. (2) Absence of an organisation to procure and distribute raw materials. (3) Lack of facilities for research so that the quality, design and standard could be improved and adjusted to changing tastes and fashions. (4) Lack of capital. (5) Absence of marketing facilities. (6) Inability to store the necessary materials to meet urgent orders. (7) The illiteracy, conservatism and lack of initiative on the part of the cottage workers. (8) Failure to realise the importance of keeping full, regular and correct accounts with a view to working out the actual cost of production.

Though many of the above handicaps are not yet removed the war has offered ample opportunities for the small industries to prosper. First and foremost, the rapid reduction of imports left the internal market to be exploited by indigenous producers and the higher prices held out strong incentive for greater production. *Secondly*, the large-scale producers in India, who till recently had their own share in stifling the prosperity of small-scale industries, had to take up war work well above their capacity. Owing to shipping shortage and difficulties in procuring machinery from abroad these big producers could not expand rapidly so as to serve both the civilian and military demands in full. Hence while these large-scale producers were engaged in doing war work the smaller producers, particularly since 1941 found the fields less congested and hence more profitable. The inability of big factories in undertaking certain lines of production made it necessary for the Government to look up to the small-scale industries. For the production of blankets, tentage, mosquito nets, camouflage nets, parachute cloth, glassware, military hats, durries, leather and rubber goods orders had to be placed on these small-scale producers. *Thirdly*, the transport difficulties which resulted as a direct consequence of wartime developments added another stimulus to the small-scale producers. Production on large-scale and distribution on a wide area, which are of prime importance for the big factories, could not be safeguarded owing to transport bottleneck. But the modest small producers, with an eye on local needs and local tastes, could thrive better since their dependence on the transport system was comparatively less. War is a great decentraliser of productive activities and local raw materials can be had for local production on profitable basis so long as hostilities continue. *Fourthly*, the extension of electricity, the rapid construction of roads, and the stationing of large military units in different centres facilitated the expansion of certain small-scale and cottage industries. *Fifthly*, it cannot be denied that both the Central Government and the various Provincial and State Governments have tried their best to help the small-scale and cottage industries ever since the war started. The Supply Department had placed orders worth Rs. 5 crores in 1941-42 and Rs. 10 crores in 1942-43 on the small-scale and cottage industries and the above trend indicates that in future the orders would increase to substantial amounts. It is noteworthy that the first Small-scale Industries' Conference held in New Delhi in March 1942 planned to purchase 25 per cent of the war requirements from the small-scale and cottage industries. The Provincial Governments were also directed to give all possible help—supply of raw materials, financial help, technical guidance, supervision of the manufacture, etc., so that they could maximise their production capacity. In Madras for example, an expert has recently been appointed to explore the possibilities of handmade paper in the province and to organise production on cottage basis. The Forest Research Institute at Dehra Dun and the Harcourt Butler Technological Institute at Cawnpore have conducted successful research to improve the quality of handmade paper. The U. P. Government have taken steps to help the glass industry and the Benares Hindu University has undertaken research with a view to introducing more economical methods of production.

It should not be forgotten, however, that if war has offered chances of expansion the peculiar situation in India introduced special difficulties which could not be easily overcome. Stoppage of imports of yarn for instance has dealt a severe blow at the handloom weavers and the absence of dyes, and necessary chemicals weighed heavily on most of the important smaller industries. The rapid increase in the excise duties was another deterrent influence on some industries like matches, leather, cigarettes, soap, etc. Absence of suitable tools, machinery and technical advice has barred satisfactory growth of these industries. Though the authorities are trying to get over the difficulties, the fact remains that for the past four years the growth of the small-scale and cottage industries was too slow for the civilian population to profit. Though relevant figures show progress in industries like handloom weaving, soap, glass, hosiery, rubber goods, cutlery, leather work, bangle making, furniture making, handmade paper, etc., they are yet to prepare for safe and sure existence in postwar years. The Government of India may not show the same solicitude for these industries after the war. The task of organising research, technical training, marketing arrangements and other problems have to be faced by these industries. When severe foreign and local competitions are restored after peace, these industries would again be hit hard unless they organise themselves and attend to their own peculiar needs and reduce the cost of production. The bigger industries with their enhanced productive capacity and financial strength would be able to compete against them in postwar years. If the war orders are stopped and Government set about disposing of the stocks of goods accumulated during wartime the position would become quite uncomfortable for

the small producers. Their future therefore lies in co-operative organisation and research. The recommendations of the Bombay Industrial and Economic Enquiry Committee should be considered and implemented if the small-scale and cottage industries are to be placed on a sound footing in postwar years. They have suggested the establishment of Provincial Small Industries Banks with a capital of Rs. 25 lakhs each for giving financial help. The State must come forward to supply technical aid so that these industries could be stabilised and improved. With regard to the cottage industries the Committee have suggested that cottage workers should be organised with State help and substantial Government help should be extended to them over long periods. They have even gone to the length of favouring State management of these cottage industries if and wherever such a course is needed. Besides periodic exhibitions and a permanent museum to popularise the products of cottage industries, the Government should decide upon a stores purchase policy favourable for these industries. The formation of Provincial Cottage Industries Research Institutes has also been favoured.

The Government of India have decided to form an All-India Handloom Board. The functions of the Board will be (1) to recommend to the Government of India as to what proportion of the yarn available from Indian production should be supplied to each Province and State interested in obtaining yarn for handloom weaving; (2) to assist the handloom weavers through recognised associations or Provincial or State authorities in obtaining dyes, chemicals, stores, etc., (3) to examine the problem of marketing the handloom products and (4) to organise and direct research for improving production. The administration of grants-in-aid from the Central Government will also be entrusted to this Board of twenty-five members, of whom fifteen will be representatives of the Provincial Governments and the handloom industry and four will be representatives from the Indian States. The mill-owning interests and yarn trade will have six members to be nominated by the Textile Control Board. The Textile Commissioner to the Government of India will function as the Chairman of the All-India Handloom Board. Provincial Governments and the various commercial organisations have been addressed for eliciting their opinion and suggestions.

The proposal must be welcomed as a promise of rational reconstruction of the handloom industry. Indian handloom products are not a mere relic of departed glory—they still occupy a big place in the national economic life. The mills, both foreign and Indian, have succeeded no doubt, in depriving them of the whole of the foreign markets and a large part of the home market. But they still hold their own and remain the biggest small-scale industry in India. The handloom industry offers work for 2½ million workers, most of them live in the villages, and a population of 10 million are directly dependent on the fortunes of this industry for their living. Probably, more than any other small-scale industry, handloom production is most intimately connected with Indian agriculture, sharing all its strong points and shortcomings. Handspinning and weaving are more important for our problem of distribution and consumption than for our problem of production. That has been the chief justification for the khadi movement and the Congress support to it. Before the war handloom weavers produced 1617 million yards of cloth valued at Rs. 72.8 crores. Apart from the fact that handloom weaving is serving as a subsidiary to agriculture in so far as it affords profitable employment to cultivators during the idle months, it is so well distributed in all parts of India that money passed through the wage bill of this industry secures a satisfactory distribution of income to villagers without localising the benefits here or there. If an organisation should be set up for aiding this industry, it is a sure way of giving succour to agricultural workers and an ideal agency for helping Indian agriculture without local preferences. It is well-known that during the years before the outbreak of the present war the handloom industry had fallen on evil days, the income of the workers having been reduced by 60 per cent or 70 per cent during the decade from 1929 to 1939. Just before this war, the outlook of the handloom industry was thus very gloomy. The competition of the indigenous mills and imported foreign cloth had been severe. While the mills had excellent organisation for research, publicity and sales, handloom weavers had none to help them except, probably, the All-India Village Industries Association and the meagre help given by Provincial authorities. The dearth of credit facilities and the rapid increase of middlemen had worked havoc on them. Often they had to face overproduction, owing to inadequate facilities for efficient production and profitable marketing. The millowners who have captured 70 per cent of the Indian market had powerful organisation to agitate for tariff protection and could even clamour for a duty on imports of foreign yarn, the raw material which feeds

millions of handloom weavers. In short, the handloom industry was in a desperate plight and it looked to the Government to come to its rescue. Though belated the formation of the Board is quite welcome and, if ample resources are placed at its disposal, it can certainly go a long way in pulling up the handloom industry and the workers engaged in it from the present morass.

The immediate problems before the Board would presumably be evolving a satisfactory scheme for rationing short supplies of yarn, dyes, and chemicals, but it can be profitably used for post-war planning of the handloom industry in this country. Handloom weavers, it is admitted, cannot be elbowed out by the mills. In fact, investigators, who have gone deep into the problem of handloom versus the mill have often raised the question, if there is any competition at all between the big mill and the cottage handloom. The difficulties of the handloom weaver lie more on the side of inferiority in organisation, capital and research than on the side of technical efficiency. Remove the middlemen, he can fight the mills with confidence. The weaver preserves traditional skill, can study the local customs and manners better and caters to local tastes. In a subcontinent like India where there are a variety of customs and fashions the local small scale producer has an advantage which the mills, highly concentrated in a few provinces only, cannot hope to enjoy. If the millowner can organise efficient advertisement and selling agencies it should also be remembered that the handloom weaver who caters to immediate surroundings is spared from these overhead charges. If it is contended that machines could produce in a day what thousand workers cannot, the answer is we have thousands of able and skilled weavers keeping idle for a major part of the year and sheer numbers can do what machines can. In fact, the recent decadence of handloom industry was due more to lack of facilities normally needed for an industry and not to the superior productive capacity of big units. The Handloom Board would thoroughly investigate the problem of giving the village weavers a helping hand if only because behind the millions of handloom weavers, there is a supreme social problem to be tackled. Disturb the handloom industry, you are hitting agriculture and the agriculturists very hard. This aspect of the industry should be borne in mind by the Board and a satisfactory scheme of co-operation between the handloom and the mill should be worked out. If, for instance, it is necessary to zone the markets, or allocate the different lines of cloth production between the two agencies the Board should not shrink from doing so. If the Board rationalises the handloom industry and places it on a firm footing before the war is over, it is not too much to expect that they would not only solve their local problems and maintain the export markets they could capture during the war but would even make a drive for more.

A post-war plan for the handloom industry has to be linked up with similar plans for the regeneration in other sectors in our national life. With the spreading of hydro-electric works and the establishment of thermal stations electricity will enter rural areas and infuse a new energy and power to handloom industry. It is evident, therefore, that planners of post-war hydro-electric schemes for India should bear in mind how much they can help the handloom industry also and evolve the best possible distribution of electricity which can serve the weavers throughout the length and breadth of the land. Likewise, those who are bothered about the task of settlement of demobilised military personnel would do well to remember that the scope for agricultural colonies cannot be greater than the scope in absorbing them in handloom industry started and strengthened in the different localities to which the soldiers belonged. If a master plan like the Bombay Plan is to be put into operation after the cessation of hostilities, the immediate aim can not possibly be anything but greatest possible employment of labour and the importance of small scale and rural industries like handloom weaving in this respect cannot be exaggerated. Key industries, though vital, take time to develop and cannot easily absorb the large numbers of unemployed or under-employed rural labour. The real and urgent needs of the handloom industry are of an all-India nature and if properly resuscitated it can greatly help in solving several other countrywide problems as well. The proposed Handloom Board is therefore most welcome and, if it works in right earnest and without delay, it may well be the prime mover for post-war agricultural progress.

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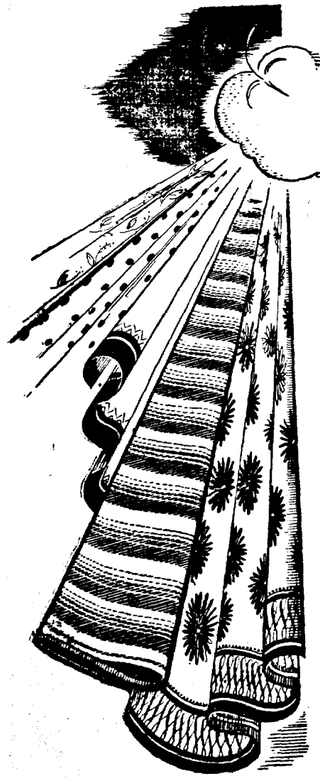
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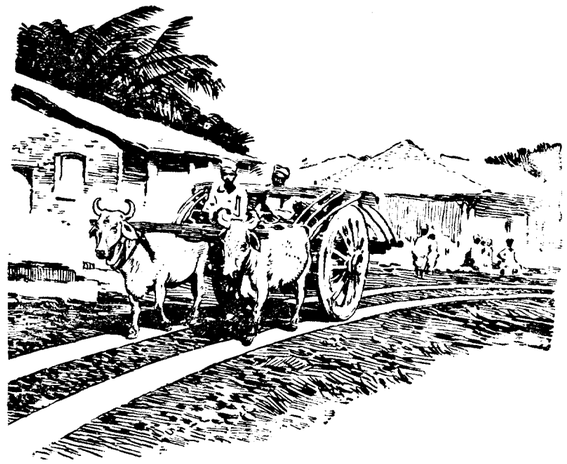
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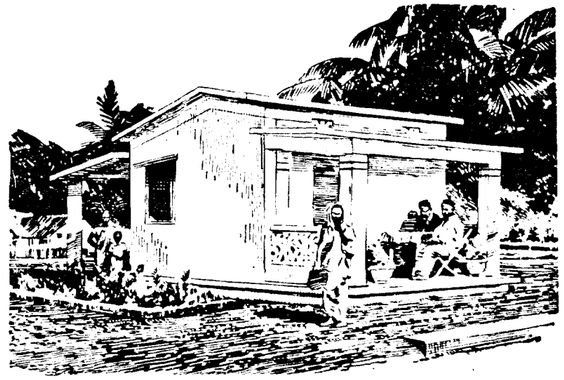
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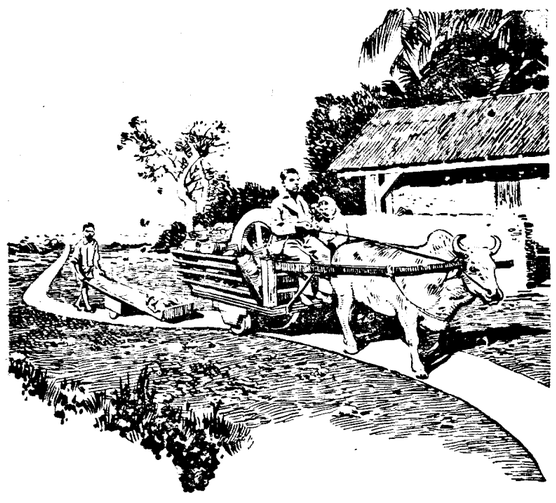




WILL THIS BE A COMMON SIGHT IN THE FUTURE?

India has been and always will be an essentially agricultural country. Consequently the importance of her villages in the economic structure is supreme. It is therefore only natural that any effort towards improving the condition of the country should start in India's all-important villages.

Village communication is one of India's foremost problems. For months every year most Indian Villagers are isolated from the outside world because their muddy lanes are impassable for wheeled traffic. It may take hours or even days to reach the nearest town for any help in case of accident or sickness. The expense of metalling the roads is too great for an impoverished agricultural community. Concrete can solve the problem by means of creteways—suitable for village traffic, cheap and durable.

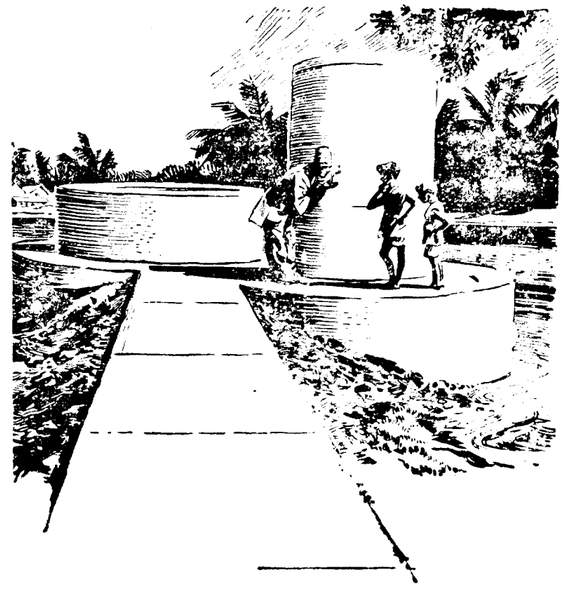


Transport is greatly speeded up on hard, smooth roads where sufficient funds are available and on the more important country roads double-track creteways have proved very satisfactory. Bullock carts can use them even through the worst monsoon weather. For less important roads a single track creteway might suffice. Obviously it costs only half as much as a double-track and can be used throughout the year for handcarts, cycles, motor-cycles and pedestrians. Single wheeled carts are used extensively in China and experiments at Virar lead one to believe that these carts could be used in India on single-track creteways with bullocks. Besides communication, the two other primary improvements that are required in the villages are those of housing and sanitation. Only on the basis of healthier and cleaner villages can a prosperous India be built up.

Cement could be a great ally in securing these two improvements. Concrete houses are strong, clean and durable. Concrete drains would mean the end of breeding places of mosquitoes and their accompanying scourge-malaria.

The inefficient method of stocking grain is another great defect which can be remedied. Every year lakhs of rupees worth of grain are eaten by rats or rot during the heavy Indian monsoon due to a lack of storage facilities. This loss could be stopped by constructing concrete "silos" which are both rat and rain proof.

In Virar, a village near Bombay, a demonstration of what can be done has been given by the Concrete Association of India on behalf of the Cement Marketing Company of India. The improvements comprise construction of a concrete village house, a permanent weather-proof grain silo, short stretches of single and double concrete tracks for bullock carts and other traffic, concrete platforms for the village market sheds, a concrete floored verandah and rooms for the Dharamshala, Athanis (load resting places), concrete—lining of well with a concrete approach, a new drinking fountain.



The maintenance costs of concrete are extremely low, and the cost of initial construction is repaid in a comparatively short time by the resultant economies.

Time is saved in transporting products to market on the new roadways. Grain is saved from destruction by vermin and rot. Improved health means more efficient labour.

10 CRORE PLAN FOR BARODA

[The following is a summary of a Plan for Baroda outlined by the Member for Post-war Reconstruction, Baroda State, on the 12th January, 1945].

The greatest difficulty in planning for the future in Baroda, is that in all its biggest schemes it has to take into account the needs and reactions of neighbours. A glance at the map of the State will show how dispersed is its territory. Not one of its districts is adjacent to another, and, what is more, each district has more in common with its neighbours in British India or other States than with any other district of the Raj. Amreli for instance, isolated in scattered bits in the heart of Kathiawad, has little social commerce with the other Baroda districts in the main land of Gujarat. Mehsana, up in the north, has all its market connections, its social exchanges and cultural give and take with the Ahmedabad district, and has little in common with the central district of Baroda, and so on. Any big scale programme of improvements, either irrigation or communications or other public works has inevitably to take into account the manner in which it affects other jurisdictions. The Sabarmati Irrigation Project for instance can only achieve success with the co-operation of Bombay Province and the fringe of states through which the headwaters of that river flow. The future may give rise to some sort of composite authority like the Tennessee Valley Administration on which basis the control of floods can be achieved, the erosion of soils prevented, and the irrigational facilities properly distributed throughout the region affected.

Planning in Baroda began with the appointment of a committee with the Commissioner of Agriculture as chairman on the 27th April 1943. A ten year plan of economic reconstruction was envisaged in the Order appointing that committee. Later on other small committees were devised for labour, post-war depression and analogous problems. Subsequently on the 20th March 1944, His Highness's Government set up Committees on the analogy of the Government of India Committees on

(1) Resettlement and re-employment
(2) Disposal, Contracts and Government purchases
(3) Public Works and Communications with three sections devoted to (a) Transport, (b) Posts, telegraphs, telephones and air communications and (c) Electric Power, water supply and other public works,
(4) Trade and Industry,
(5) Agricultural Policy.

These committees met usually once a month or whenever necessary and put up preliminary proposals. Thereafter a separate Ministry of post-war reconstruction was appointed on the 1st October last, and the Member in charge was made ex-officio President of these Committees. The plans were taken in revision and rearranged on a wider term of years, with details for the First Five Year Plan. It is important however at the outset to remember that in certain respects such as social services, like education and public health, or railways, this State has pursued steadfastly such a progressive policy that there is little scope for much further extension. For instance, compulsory education is now firmly established for nearly 40 years, and what is needed most particularly in the next five years is intensive development in primary education, while increasing facilities in the higher and more technical and professional sides of education. Similarly in respect of Railways, this State has the most extensive network for its size as compared to the rest of India. In medical relief also, the establishment of cheap rural dispensaries throughout the State on the basis of a five mile radius with the provision of taluka maternity wards has had the most beneficial effect on the birth-rate, helping to raise thereby the general health conditions, and the quality of life in the country.

A. EDUCATIONAL PROGRAMME

Taking the question of educational progress, the department has put up a programme of improvement in the junior and basic grade, of provision of nursery schools, for technical instruction and for increasing facilities in secondary education in accordance with the scale recommended by the Central Advisory Board, amounting in all to an additional annual cost of 2.43 crores of rupees with about 20 lakhs as capital expenditure on buildings and equipment. At present 1749 out of 3000 villages have school facilities provided. These villages contain a population of 23.23 lakhs or nearly 82 per cent. of the total. In this area, nearly 91 per cent of boys and 79 of girls are enrolled in schools. If the fullest provision is made throughout the State, the total school strength would then need only to be increased from 2,73,000 to 3,51,000. Pre-primary instruction is given at present in 34 institutions in the State to 2,058 pupils. A complete scheme will require this strength to be raised to only 11,000. Our secondary schools number 156 with 28,000 pupils. Here there is more scope for development in order to meet the rapidly increasing inflow of recruits from the primary stages. Schools will have to be increased for accommodating 73,000 students, the graduate and trained element in the teaching staff will have to be strengthened in various ways and provision will have to be made for an increase in expenditure of 68 lakhs per year over the present annual cost of 11.77 lakhs (in Government and private schools). Progress in technological facilities is envisaged in the same programme by affording facilities for the training of the different categories of technicians needed by industrial concerns in the future:—

(1) Chief Executives as well as research workers through a high type technological institute.
(2) Minor executives, foremen etc. through technical high schools.
(3) Skilled craftsmen through certificate courses.
(4) Commercial education.

In Baroda State, provision is made in the proposed programme of about 2,000 seats in the technical high schools. Increased cost for this purpose is estimated at nearly 10 lakhs.

At the top of the education system we have now an Arts and Science College, a College of Commerce and a College of Education. In addition the Government have ordered preparation of schemes for a College of Engineering, a Medical College, a technological institute and an Institute of Agriculture. Sites have been selected for some of these institutions and an exhaustive list of plants and machinery required for the Engineering College has been also prepared. The approximate capital cost of these institutions will reach the vicinity of Rs. 3 crores, but at the present stage, anything but a conjectural estimate is not possible.

B. PUBLIC WORKS: COMMUNICATIONS

As already pointed out, the State is more than well supplied with railway facilities. There are now 866 miles of railway within an area of 8,176 sq. miles. Road-ways are also numerous with a mileage of 1,678 (including nearly 500 miles of metalled roads). In addition, the department has prepared a five year programme of 1246 miles of roads made up of (a) national highways—76.4 miles, the construction and upkeep of which will devolve on the Central Government, (b) State highways—97 miles, (c) major district roads—289 miles, (d) other district roads 226.5 miles and (e) village roads (557 miles). These roads which will be either cement concrete, cenephalt, asphalt, or metalled will cost 2.86 crores, but their annual upkeep will only 4.78 lakhs, not counting the maintenance of existing roads. The existing railway mileage would preclude much chance of extension except in the attached areas which are over 5000 sq. miles in extent and have 6 lakhs of population. To this end, the department has proposed (i) a line from Becharaji to Zinzuwada (32 miles-metre gauge) passing through Vanod, Dasada, Zaminabad, (ii) a line from Patan to Thara, thence to Tharad and Vay (67 miles metre gauge), (iii) Thara to Radhanpur (19 miles metre gauge), (iv) Kapadvanj to Dabhoda—Sadra and Limbodra (39 miles narrow gauge), or 157 miles in all. The committee concerned considered these schemes as useful, but alternatively suggested roadways on the same alignment and giving to the railway department all the profits connected with motor taxes, running of buses and other traction etc. It was also suggested that one or two of the existing railway lines as are not run profitably should be turned to concrete roadways. As the projects were yet to be prepared, no accurate estimates of cost could at this stage be given, but it is suggested that at least 2 crores will have to be set aside for these.

As to the programme for development of electric energy facilities, the biggest plan is to convert the existing electric supply in the City to standard voltage and frequency. This will cost Government 42 lakhs, out of which about 12 lakhs will be value for the existing H.T., and L.T. over-head lines. Thus the conversion will actually cost about 36 lakhs. As soon as the conversion is completed, grid power wil be extended, first to Baroda district and thereafter to Mehsana and lastly to Navsari district. The Bombay Government would take about 5 years to spread this grid to these parts of the State, which will however form its own grid for supplying power for rural electrification, when the cheap electric power from the grid is made available by the Bombay Government. Some idea of the State's burden in respect of these extensions is given below:—

		lakhs.
1.	Supplying power from the grid to Padra, Petlad, Bhadran, Dharmaj etc. (Baroda District)	14.17
2.	Supplying power from the grid to Kalol, Kadi, etc. (Mehsana)	11.86
3	Supplying power from the grid to Navsari town and other places, including sugarcane development scheme	4.35
4	Rural electrification by grid ...	4
		34.38

The telephone department had prepared a ten year plan of telephone development with a construction cost of Rs. 21.7 lakhs and recurring expenditure of Rs. 1.9 lakhs. The committee has now asked the department to revise its programme and give details for the first five year plan. The order of priority for developing schemes has been determined and the department was further asked to prepare schemes for non-commercial telephones for 50 towns and villages with a population of at least 3,000, and to work out detailed costs for the purpose. These are awaited.

As to irrigation, the two projects with which the Government of the State are chiefly concerned are the Sabarmati and Zankhari projects. These are estimated to cost Rs. 2.54 crores.

Coming to the important question of town planning, the department has under preparation schemes of extension in 23 towns, (6 of which have been sanctioned by Government). All these extension schemes will, it is hoped, be pushed through in the first five-year plan.

Popular demand for better housing will, it is expected, become very keen at the end of the war, particularly as increasing population will add to the congestion in the existing town sites. Both towns and villages have great need of extention and open places for recreation ground. Along with town extension schemes, the department has prepared a ten year programme (as apart from the general post-war plan) of recreation grounds in 43 towns costing 4.19 lakhs. As the actual cost is not large, and the work is urgent, it may well be possible to take all these schemes in the five year plan.

C. TRADE AND INDUSTRY

The committee concerned with the industrial development has so far concerned itself with exploring the possibilities of expansion. The question of fixing industrial areas with particular reference to the city is being considered. Over 900 acres of land are being reserved for this purpose and recommendations are in hand for the settlement elsewhere of agriculturists dispossessed of their lands. With regard to textiles, the committee has expressed the confident hope that the development can be two-fold within the near future and for that purpose has recommended the establishment of a Textile Research Institute either as an extension of the present Kalabhavan, or on a zonal basis in co-operation with Ahmedabad and Bombay. The Note on industrial development mentions the number of existing textile mills and details the favourable factors under which it can be hoped that expansion may be achieved in at least eight centres in the State.

Besides textiles the State has great possibilities in respect of chemicals and oils. The Committee however stresses on the importance of planned development. No expansion should be taken in hand except with reference to proper town planning on the one hand and facilities for electrical power on the other. The regulated growth of textiles without regard to the suitability of the locale is to be checked. Training of teams of workers in various branches of science and technology is to be facilitated as soon as possible. Finally, there is to be co-operation and not competition between existing industries and future ones. The State is prepared to help to the widest possible extent with subsidies, loans, industrial and fiscal concessions, acquisition of sites and in every other reasonable way. The policy is one of attracting outside capital to strengthen the industrial system by assuring such capital of the stability of Baroda's industrial policy and the enlightened character of its administration.

D. AGRICULTURAL POLICY

The committee concerned with the planning of agricultural improvement and rural reconstruction had as their principal objective increased crop production. In their planning programme, they concerned themselves mainly with

(a) dealing with major necessities in the way of irrigation, drainage or soil erosion
(b) attempting to meet certain of the economic difficulties which reacted against higher production and
(c) remedying defects in respect of seed, manure, propaganda for power farming and such like, where technique hitherto pursued called for improvement. The previous programmes were further revised, and with the whole objective in view spread over fifteen to twenty years, details for the first year plan have been evolved and recommended.

Taking water improvement first, the plan consists of open well construction at the rate of 800 wells per annum or 4,000 for the 5 years—costing Rs. 9,20,000 annually or Rs. 46 lakhs on the whole. Secondly there was to be well improvement costing Rs. 75.00 annually or Rs. 3,75,000 for the five years (out of which 33% will be recovered from the parties), net cost being Rs. 2.5 lakhs. On tube wells, the scheme proposes expenditure of Rs. 45,000 per annum, of which half would be paid by the party aided. The first five years would then absorb Rs. 1.2 lakhs. Prevention of soil erosion and dry farming are operations spread over a term of fifteen years. The first five years would require Rs. 3 lakhs of which recoveries will come upto Rs. 50,000 the idea being that the scale of recoveries should be raised in the subsequent five year periods. As to economic disabilities there is the scheme of rehabilitation costing in the first term Rs. 7.45 lakhs and net recurring charge of Rs. 60,000. Rural reconstruction is the chief item in the economic programme, and is achieved through

(a) establishment of rural centres working up to 35 villages per centre, and
(b) a close village approach through intensive propaganda and direct work through better farming societies.

Rural reconstruction centres which at present number three are to be multiplied. Within the next five years 12 new centres are contemplated, four in the first year, four more in the third year and four more in the fifth year. These would cost Rs. 36,000 (capital) and Rs. 4.32 lakhs (recurring.) Village propaganda in agriculture, live-stock and horticulture was considered in several meetings of the Committee.

The present position is that there are five intensive units with from 20 to 25 villages in each district, each unit having an overseer and three kamgars for the subunits dealing with the above number of villages. There is only one Agricultural Inspector of the district who checks up their work. It is obvious that for intensification of production arrived at as essential for the growing population and its needs this staff would hardly be sufficient. In the Delhi meeting called to consider the proposals of the Advisory Board of the I.C.A.R. it was felt that work of reaching improvements to the farmers and getting them to adopt them must proceed at a very much faster and more uniform pace. The Delhi meeting even contemplated the Co-operative activities as being made part of the plan of this great undertaking. They suggested a local agent for each village being selected as the vehicle for conveying the various improvements for being embodied in the village uplift movement with a suitable honorarium. If the degree of intensification of better production that is envisaged, is to be reached there is no other way of getting it except through such enlightened leadership of what they have termed as village guide. So many different sections are concerned in village uplift that it would be impossible for one village Kamgar to be responsible for the working of the several sections like agriculture, horticulture, live-stock, co-operation, sanitation and many others. The only way these various interests can obtain suitable response is by a local agent or village guide who is most of the time in the village and not spread over 6 or 8 villages in any one of which he may be when some section wanted him at another place and a third interest at still another. The new method of approach expects seed production organisation to be made. Live stock health and improvement are also to be looked into as well as the horticultural possibilities of the area concerned. The present unit organisation is not competent to do this. In order to bring the present organisation of 5 intensive units to harmonise with the future plan of development of village betterment the Commissioner of Agriculture proposes to add one 6th unit and making a unit of 25 villages, so that 150 villages may be tackled as a zone. To enable the present arrangements to cope with seed production, live stock betterment and horticultural work, the Commissioner of Agriculture proposes to strengthen the present staff.

A summary of capital and recurring costs required under these important heads is given below:—

	First five years.	
	Capital.	Recurring.
1. Increasing various water supplies ..	55.45	..
2. Rehabilitation scheme	7.45	2.7
3. Rural Reconstruction Schemes ..	.36	4.37
4. Agricultural Education ..	12.00	5.00
5. Staff, pay and expansion ..	..	3.5
6. Contingencies ..	..	2.5
7. Government Breeding and Dairy farms ..	8.49	6.90
8. Breeders' Societies ..	.61	1.39
9. Village propaganda and approach ..	..	15.17
Total ..	84.36	40.63

As regards development of Co-operative societies, the present position is that out of the total population, only 18.1 percent are in touch with the Co-operative Movement in various ways. 866 villages out of a total of 2,956 villages in the State have each a cooperative society of some kind. A workable target would be to reach at least 50% of the population in 10 years i.e. 1 170 new villages. In the first five years 585 new villages will be brought in touch with the benefits derived from principles of cooperation. Emphasis will have to be specially laid in areas which are relatively slow in this direction as in Mehsana District. But to achieve this end the departmental machinery must be suitably augmented and strengthened. The present staff is mostly engaged in audit work and have little time to devote to propaganda in new areas for which provision has to be made. In order to render effective service in the various fields of cooperative activities the present cadre is to be augmented.

Forest development is envisaged in the direction of afforestation and prevention of erosion, but here rapid progress is not to be expected. The Conservator of forests however looks forward to planting some 7,000 bighas of waste land in the first five years period provided he gets sufficient and suitable staff to see that plantation work is properly carried out and looked after. In twenty years' time if land is available he expects to have 82,000 bighas of Government waste land under the plantations and a lot more of private lands, at a total cost of over 30 lakhs of rupees. However that will depend upon sufficient Government waste land being available and private lands being brought under afforestation by legislation or by consent. For the first five year period a budget of Rs. 5,40 000 is estimated. Rs. 1,00 000 of the above are for training men and Rs. 1,20 000 for plantation and maintenance expense of 7,000 bighas.

FINANCIAL PROVISIONS

The total provision as far as they can be at present estimated for the first five years plan amounts to over Rs. 10 crores. Against this enormous sum, the State has already started making provision. The Post-War Reconstruction Fund was opened with a nest-egg of Rs. 30 lakhs in 1942-43. In the next financial year a sum of Rs. 40 lakhs was added. In the budget for 1944-45 a sum of at least Rs. 44.15 lakhs making upto a total of Rs. 1.14 crores was made available for the purpose. The Government is giving anxious consideration to the perobem how further resources can be added both for meeting the huge capital expenditure required, as also for the mounting recurring chanrges, for which the State's normal revenue is quite inadequate.

The bulk of the capital cost for higher education in medicine, agriculture, technology and engineering can be met by spirited sons of the State and other millionaires who have made enormous profits through the war and now can be persuaded to extend their aid. Industrial development also looks mainly to them in the future and hopes for their enterprise to find fruition within the Raj Loans, besides, may make up for part of the capital required.

Resort will also be had to the subventions which may be hopefully expected from British India. Sir Ardeshir Dalal pointed in his recent speech to the constitutional difficulties which obviously make it impossible for an Indian State to be treated on the same footing as a British Indian Province. But at the same time there are deserving cases of schemes which affect British India just as intimately as Indian States in which the Central Government should be prepared to afford assistance to States for post-war development. The I.C.A.R. has already established precedents in this respect and contributory States and provinces can be linked together on joint boards of administration on a basis of equal or pro rata contribution. Particular schemes will have to be treated on their merits.

Baroda's record has in the past been always for progress and welfare and social advancement of its people and with that record it can look forward confidently to the sympathy and co-operation not only of its neighbours, but of the whole of India as well.

THE BANK OF BARODA LIMITED

(Incorporated in Baroda, Liability of Members being Limited)
Established 1908

UNDER THE PATRONAGE OF AND LARGELY SUPPORTED BY THE GOVERNMENT OF
H. H. THE MAHARAJA GAEKWAR OF BARODA

Capital Authorised	Rs. 2,40,00,000
Capital Issued and Subscribed	,, 2,00,00,000
Capital Called up	,, 1,00,00,000
Capital Paid	,, 99,99,580
Reserve Fund	,, 1,00,00,000

Head Office:—MANDVI, BARODA — *Calcutta Branch*:—11, CLIVE STREET

BRANCHES:

Ahmedabad (Bhadra)	Coimbatore	Kapadwanj	Port Okha
Ahmedabad (Panch Kuva)	Dabhoi	Karjan	Sankheda
Amreli	Dhulia (W. Khandesh)	Mehsana	Sidhpur
Bhavnagar	Dwarka	Mithapur	Surat
Billimora	Harij	Navsari	Unjha
Bombay (Fort)	Jalgaon (E. Khandesh)	Pachora (Pay Office)	Visnagar
Bombay (Zaveri Bazar)	Kadi	Patan	Vyara
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BANKING IN WARTIME

The development of Indian banking in the 'thirties was on very satisfactory lines thanks to the better practices adopted by those in management and the steady improvement in the conditions in the money market. In peacetime, however, improvement in the volume of business could be only slow as the competition from foreign banks had to be gradually overcome. When war broke out the Indian banking system was very sound and it was equal to any strain that might have to be borne on account of the exceptional circumstances. It was not possible then to have any definite ideas regarding the part to be played by banks in war period as apart from the uncertainties allied to the conduct of the war, the gradual incursion into trade by the Government and the nature and volume of business handled meant that banks would have to play a less important part than they usually did in the transaction of normal business.

It was thus that all the world over banks experienced rather difficult conditions and there was a general contraction in business. In the first three years of the war period Indian banks also had to experience difficult conditions especially as there was a sharp decline in exports with the loss of Continental markets and there were depressed conditions within the country. After the end of 1942 banks have had the advantage of inflationary conditions and increase in business activity. The rising tempo of war effort and the greater importance of this country as a base against the war with Japan, led to a large improvement in industrial activity. As Allied war purchases were financed by this country against sterling receipts from the British Treasury there had to be a continuous expansion of currency at a particular stage. The additions to the note issue proved to be redundant with the increase in profits and sufficiency of working capital. Deposits with banks showed a large rise; advances also improved but at no time there was an increase in proportion to the rise in total working capital. If adjustments were made having regard to the higher level of prices the quantitative improvement in the total of trade financed by banks was not perhaps very much more as compared to peacetime standards but the fact cannot be overlooked that even these conditions were denied to banks in other countries.

Two tables given at the end indicate the progress of scheduled banks, since the beginning of the war. Demand liabilities on September 1, 1939 were Rs. 134.46 crores. They had increased to Rs. 608.31 crores on March 9, 1945. Time liabilities on the same dates were Rs. 102.24 crores and Rs. 220.07 crores respectively. It is interesting to note that the bulk of the improvement in working capital has taken place only after March 13, 1942, demand liabilities on this date being Rs. 219.76 crores. Time liabilities were actually lower at Rs. 100.96 crores. Owing to the uncertain conditions in trade and industry, there could not be any appreciable increase in advances in the early years though in the first four months with the spurt in export trade and the increase in speculative activity there was a rise in advances to Rs. 145.97 crores on March 15, 1940 from Rs. 101.52 crores on September 1, 1939. The figure had declined to Rs. 114.79 crores on March 13, 1942. With the future of all markets unsettled, there was naturally a tendency to build up larger cash balances.

In the second table are given the consolidated figures of deposits, advances and cash (figures relating to investments are our own calculations) will reveal more clearly the rapid strides made by Indian banking since 1942. Deposits in the first week of March disclose a net improvement of Rs. 507,65 crores over the figure for March 13, 1942 against an increase of only Rs. 74.03 crores in the previous 2½ year period. Advances have risen by Rs. 164.95 crores in the last three years against only Rs. 12.9 crores in the previous 2½ years. Cash balances were higher at Rs. 74.46 crores against Rs. 18.1 crores. With the difficulty in effectively utilising available funds, the only outlet has been the gilt-edged market as the Central Government was the prominent borrower especially as after 1943 as the capital issue market was controlled. Moreover, owing to the large liabilities on current and contingency accounts there was no disposition on the part of banks to take any risks and available funds were placed in short and medium-dated loans and treasury bills.

The last column of the second table will show that investments have improved from Rs. 152.66 crores on March 13 1942 to Rs. 420.9 crores on March 9, 1945. The net increase in the investment portfolio was thus Rs. 268.24 crores against only Rs. 53.03 crores in the first period. The total amount lent to the Central Government might during the war period be thus over Rs. 300 crores, a very good proportion of the total borrowings of the Central Government in the past six years.

The larger working capital has necessarily resulted in an increase in earnings of most of the important banks and dividend distributions have been higher. The ease with which deposits can be attracted also led to the floatation of numerous banks under powerful auspices and it is a matter of common knowledge that in the past three years a large number of new banks have come into existence and quite a few of them have come into prominence. Between the new banking institutions alone it can be said that as much as Rs. 100 crores have been secured by way of deposits. To this extent the flotation of new banks has been anti-inflationary in effect especially as the major proportion of the working capital was placed in Government securities, the place of advances against investments in wartime being reversed. In normal conditions advances were about 45 to 50 percent of the total working capital while investments were about 30 to 40 percent.

On March 9, 1945 advances were 34.2 percent of total deposits while cash balances were 15.3 percent and investments as much as 58 percent. On March 14, 1941 advances were relatively higher at 43.6 percent and cash balances 17.3 percent. Investments were only about 25 percent.

As the custodian of large funds of the public, the Central Board of Directors of the Reserve Bank felt the need of a competent banking institution to safeguard the interests of depositors and ensure proper development of Indian banking and again addressed the Central Government on the subject. As a result of the memorandum presented by the Central Board of Directors, a new banking bill was framed and it came up before the Central Assembly early this year. The bill has been referred to the Select Committee and will be discussed in the next session of the Central Assembly.

As the statement of objects and reasons appended to the Bill points out, the needs in respect of banking cannot be met by the Indian Companies Act, since in the case of banks, it is the interests of the depositors that require to be protected, while in the case of other jointstock companies, it is the interests of the shareholders that must be deemed to be threatened. However, it is taking a narrow view of the purpose of banking legislation, if one should restrict it to the protection of the interest of the depositor. The aim of banking legislation should be either directly or indirectly to promote the healthy growth of banking and to ensure, in so far as legislation can, that the banking system serves the economic organisation as well as it should. Adequate protection of the interest of the depositor is a step towards the attainment of the wider objective. In fact, the tendency in the past was to assume that soundness and solvency of banks could be attained by ensuring through statute a minimum integrity in management and that banking system, which comprises sound and solvent institutions, must of necessity do well by the economic organisation. In the early stages of the development of Indian banking, the principal obstacle to its growth was the proneness of Indian depositors to unreasoning panic. Later, the emphasis shifted to the competition of well-established foreign banks. Only at a comparatively late stage did the possibility of interested mismanagement begin to be reckoned with. These three weighed more or less equally with the Central Banking Enquiry Committee when it asked for special banking legislation. But the inspiration behind the present Bill is not that of the Central Banking Enquiry of a decade and a half ago but the Reserve Bank of India, which has a different approach to the problem. At this stage, at any rate, the difficulties which the Bank has been experiencing in making its guardianship of Indian banking as a whole effective naturally loom larger in its eyes. This guardianship of Indian banking, the Reserve Bank interprets in terms of (1) soundness at the start of the banking venture (2) rules to ensure minimum of soundness in subsequent developments and (3) effectiveness of the control and direction of the Reserve Bank whenever the Bank deems it necessary to exert them. Along with these three, the Bank has also had to consider in view of certain recent experiences the rationing of the process of liquidation. These four objectives determine the scope and purport of the new Banking Bill; and, broadly speaking, they apply as much to foreign as to British Indian banks. In judging a measure like this, it is necessary to consider whether the regulatory measures designed by the Bank may not have the effect of curbing the initiative and cramping the development of individual institutions and banking as a whole and secondly whether these measures are sufficient to ensure that business will be well served by banking.

On the former question, the banks themselves must speak, if only on the ground that they must know better where the shoe pinches. The experience of the Insurance Bill with its need for frequent amendment and

revision is a warning against the danger of regarding all interested criticism as necessarily dishonest, and, therefore, not entitled to consideration. In fact, we would go so far as to suggest that, in this instance, the Government take the step of nominating one or two prominent and well-informed bankers to the Assembly, so that the banks will have their representatives actually participating in the Assembly debates and enlightening the legislators on points as they arise. The routine procedure of circulation of the bill for opinion may not suffice to give the corrective to last minute amendments.

None can demur to the provisions regarding the relations between authorised capital and subscribed capital and paid-up capital. The *suppositio falsi* of huge figures of authorised capital should no longer be available as a means of imposing on an ignorant and gullible public. Likewise, it should not be open to any businessmen to mix up his speculative ventures with those of the Bank under his control and follow a "Heads-I-win-tails-you-lose" policy towards the Bank. This danger which was not widespread formerly may conceivably become so, as individual moneylending businesses are being converted into jointstock concerns. The Bill not only prohibits trading with a view to eliminate non-banking risks, but also provides that non-banking assets acquired by a banking company should be disposed of within seven years. Another familiar danger which the Bill seeks to prevent is the extension of branch banking without the necessary base to support it. The Bill lays down therefore that the minimum aggregate capital and reserves should be Rs. 20 lakhs for a bank which seeks to do business outside its Province or State, Rs. 5 lakhs in respect of a place like Bombay or Calcutta, Rs. 2 lakhs in respect of each town with a population of one lakh and over and Rs. 10,000 in respect of each place of business elsewhere. The maximum and minimum of capital and reserves are however fixed at Rs. 20 lakhs and Rs. 1 lakh respectively. In the case of banks registered elsewhere than in British India or the United Kingdom, the same object is realised by the insistence that such banks should keep with the Reserve Bank in cash or unencumbered approved securities the amount required under the section. The assets in British India of foreign companies should not be less than 75 per cent. of the time liabilities in British India on the 31st December of every year.

Other safeguards are the insistence on voting rights being strictly proportionate to the shareholder's contribution and the ban on the employment of Managing Agents. These provisions, it is expected, will secure adherence, to the minimum degree at least, to sound principles of banking. The returns which banks have to submit have been detailed in the Bill; and a glance at the new form prescribed for bank balance sheets will show that the Reserve Bank will have the means of assuring itself whether the provisions of the Bill are being adhered to by the various banking institutions.

As we have already observed, these provisions are well conceived and suited to the objectives so far as they go. Some points of detail may remain for discussion and even revision. One such is the provision of a minimum of one lakh of capital and reserve for banks in India. It has been suggested that for an undeveloped country like India, the minimum is too high and may be reduced to Rs. 50,000. No judgments on this question are possible unless we can be clear in our minds as well about the lines on which we would like our banking system to develop as about effects of these provisions on the future development of banking. Will the stipulations about capital and reserve in terms of number of centres, population and extension beyond the State or Province lead to a broad division of banks in India into provincial and all-India and into urban and rural? If such a development is considered desirable, should not the figures laid down in that section be made more suitable to the particular types of banks? A bank with a large number of branches in small towns and villages all confined to a comparatively small and compact area should in this view have a lower minimum than banks spread over a number of biggish towns over a whole Province. Considering that in the post-war years the country is looking forward to a vast expansion of production and consumption in rural areas, the need to encourage such small banks should receive greater recognition. Reliance on co-operative banking will reduce the dependence on such banks; but there is little harm in providing the conditions in which small banks will seek to serve rural areas by displacing the old type of exorbitant money lender. The banking system of the country may conceivably consist of three strata, the big all India banks at the top, the small, but well-spread, rural banks at the bottom and, in between, the banks with a Provincial scope serving the interests of small towns. While one lakh is not a high minimum for a bank, in the case of certain types of banks the rate of increase should not be too closely related to the number of centres. No figure of minimum capital and reserve, however high can by itself be adequate protection for the interests of the depositor. It is the efficiency and integrity of management that alone can provide adequate protection and, where this is in doubt, we must have resort to the vigilance and control of the Reserve Bank as the best available substitute.

THE
INTERNATIONAL BANK
OF INDIA LTD., P. O. AHMEDABAD

ESTD. 1939

Authorised & Issued Capital	- Rs.	1 crore
Paid Up Capital	- - ,,	50 lacs
Reserve Fund	- - ,,	5 lacs
Total Working Funds	- - ,,	5 crores

BRANCHES:

BOMBAY: (1) Sir Pherozshah Mehta Road, Fort. (2) Zaveri Bazar. (3) Mandvi. (4) Maskati Market, Ahmedabad. (5) Rajkot (C.S.) (6) Rajkot City. (7) Wadhwan. (8) Jetpur. (9) Nadiad. (10) Anand. (11) Dholka. (12) Baroda (Ghadialipole). (13) Bardoli. (14) Baroda (Raopura). (15) Broach. (16) Beawar. (17) Surat. (18) Bulsar. (19) Navsari. (20) Godhra. (21) Nandurbar. (22) Viramgam. (23) Jodiya. (24) Dhandhuka. (25) Karachi.

ALL KINDS OF COMMERCIAL BANKING BUSINESS TRANSACTED

Seth CHUNILAL KHUSHALDAS, *Chairman.* J. C. THAKKAR, *Managing Director.*

Perhaps, the most important part of the bill is that which provides for an enquiry by the Reserve Bank. Section 28 lays down that the Central Government, virtually in its discretion, can direct such an enquiry to be made; and the result of the enquiry may range from exclusion from the second schedule of the Reserve Bank to winding up. This is, indeed, a drastic provision; but the need for such a reserve power, nobody will deny. But the point to remember is: what will be the effect of the various steps that may be taken under this clause by the Central Government? It is idle to believe that an enquiry can be ordered or its general conclusions reached by the Reserve Bank and communicated to the Central Government in an atmosphere of perfect secrecy. If it is known that a particular bank has come under such scrutiny, it will be sufficient to make the public restive and to cause the disturbing chain of consequence associated with a run. An enquiry may conceivably lead to a position which the Reserve Bank will be hard put to it to keep in hand. It would therefore be better to provide for a routine inspection to which all banks may be subject and for powers for the Reserve Bank to make a special scrutiny where the Bank feels that such a scrutiny is needed. This would help to avoid unmerited reflections being cast on particular banks merely by the fact of an enquiry being set afoot.

Such a routine enquiry has a far greater importance to the other problem of ensuring that the banking system serves the economic organisation as well as it should. We have already expressed our view that the aim of banking legislation and of the Reserve Bank as the principal instrument of its execution should reach beyond the mere protection of the interest of the depositor. It should not be forgotten that the interest of the depositor, in so far as it lies in the maintenance of high percentage of cash, is not in accord with the interests of business expansion. The safeguard for the depositor lies less in a high cash percentage than in the ability of the Reserve Bank to prevent mismanagement and to prevent a sound institution being overhelmed by unreasonable runs and panic. But the Reserve Bank must do more. The activities of banking institutions need to be co-ordinated from the point of view of the national economy, and for this purpose it is desirable that the Reserve Bank should have close knowledge of the working of banks. With the close knowledge which a regular enquiry may provide, despite its varying intensity, the Reserve Bank will be in a position in course of time to discharge its duties to the economic organisation as a whole. It may spot areas in which competition is exceeding its healthy limits; and it is a question whether in certain circumstances the Reserve Bank should not be given the power to prevent new entrants into an already crowded sphere. It may be able by sweet persuasion to liberalise the policy of banks which may be inclined to be conservative or too restricted or even to afford invidious treatment to certain sections of the clientele. These are distant objectives which for that reason, should not be wholly overlooked.

(all figures in crores of Rupees)

	9-3-45	10-3-44	12-3-43	13-3-42	14-3-41	15-3-40	1-9-39
Demand Liabilities in India	608.31	515.60	371.93	219.77	170.85	136.98	134.46
Time Liabilities in India ...	220.07	167.06	121.85	100.96	101.29	106.57	102.24
Total cash in India ...	29.25	23.47	15.15	10.45	8.26	6.73	6.70
Balances with the Reserve Bank	95.29	54.26	55.46	39.63	38.65	17.03	25.28
Advances in India ...	268.19	197.37	124.74	114.79	112.64	145.97	101.52
Bills discounted ...	14.75	9.13	3.42	3.20	5.84	6.08	3.57
Deposits	828.38	682.66	493.78	320.73	272.04	243.55	236.70
Loans	282.94	206.50	128.16	117.99	118.48	152.05	105.09
Total Cash	124.54	77.73	70.61	50.08	46.91	23.76	31.93
Investments	420.90	393.43	295.01	152.66	106.65	67.74	99.63

INDO-COMMERCIAL BANK LTD.

Regd. Office: MAYAVARAM *Central Office:* MADRAS

Authorised Capital - - Rs. 25,00,000
Issued & Subscribed Capital Rs. 21,25,000
Paid-up Capital - - Rs. 18,75,000
(TOTAL RESOURCES EXCEED Rs. 2.5 Crores)

City Offices:

CHINA BAZAAR ROAD, MAMBALAM, MYLAPORE, TRIPLICANE & PERIAMET.

Branches:

AMDALAVALASA. ANAKAPALLE. CHIDAMBARAM. CHITTUR (Cochin). CONJEEVARAM. ERODE. KARAIKUDI. KUMBAKONAM. MADURA. MARUTER. PALGHAT. PARVATHIPURAM. PUDUKOTTAH. SALUR. SHIYALI. TADEPALLEGUDEM. TANJORE. TINNEVELLEY TOWN. TINNEVELLEY JUNC. TRICHINOPOLY. VELLORE. VIJAYAPURAM. VIRUDHUNAGAR. VIZIANAGRAM.

Fixed Deposits.—Received for one year at 2¾ per cent per annum or two years at 3 per cent per annum.

Savings Bank Accounts Opened.—Interest allowed at 2½ per cent upto Rs. 5,000, withdrawals by cheques Rs. 250 per week.

Current Accounts.—Opened and interest allowed at ¼ per cent per annum.

Loans and Advances.—Against Buillion, Government Pronotes, approved shares, securities and Merchandise.

BANKING BUSINESS OF EVERY DESCRIPTION TRANSACTED.

Board of Directors:

Sri T. R. Venkatarama Sastri, C.I.E. (*Chairman*).
Sri V. Venkataama Aiyer, M.A., B.L.
Sri R. S. A. Sankara Aiyer.
Sri R. Viswanatha Aiyar, B.A., B.L.
Sri K. Sivaswami Aiyer.
Sri S. N. N. Sankaralinga Aiyer (*Managing Director*).

THE
COMILLA UNION BANK
LIMITED

Regd. Office:—4, CLIVE STREET, CALCUTTA
(ESTABLISHED 1922)

Deposits over - Rs. 9,50,00,000
Working Funds over Rs. 11,00,00,000

Calcutta Office at:

4, Clive Street, 225, Cornwallis Street, (College Street Market Branch) 99A, Cornwallis Street (Shambazar Branch) and 139B, Russa Road (Bhowanipur Branch).

Other Offices at important trade centres of Bengal, Bihar and Assam.

Bombay Branch opened on 10-4-45 at Lontin Chambers, Dalal Street, Fort, Bombay.

Agency at Madras.

Foreign Agencies:

London Agents:—BARCLAYS BANK LTD.
American Agents:—GUARANTEE TRUST CO. of New York.
Australia Agents:—BANK OF NEW SOUTH WALES, SYDNEY.
Middle East Agents:—BARCLAYS BANK (Dominion Colonial and Overseas Agency).

Managing Director: Dr. S. B. DUTT,
M.A., B.L., Ph.D. (Econ). London Bar-at-Law.

1275/5

THE FUTURE OF INDIAN INSURANCE

The formal review of insurance companies' consolidated results provided by the Superintendent of Insurance is accompanied by a general survey of the possibilities which is of exceptional importance because it is both candid and accurate. Suggestions as to further development in the direction of economy and efficiency figure along with hints as to the development of oversea business. It is therefore, advice of high value to insurence companies that the 1944 edition of the Indian Insurance Yearbook contains. If the emphasis is again on expansion, with special reference to quality, it is because the Superintendent realises that the cream of life business is still skimmed off by non-Indian companies. If there is place for difference of opinion as to the necessity for new companies in India it is manifest that observations as to the issue of capital, the dividend policy to be pursued and the class of business that must be eschewed are of vast importance to Indian insurance companies. If the record of 1943 is wholly commendable, an increase of over 50 per cent in new business assets, the obligations that must be shouldered by insurance companies are becoming clearer. Legislative amendments are on the way, but the companies have been reminded that service must improve and extend, that policy conditions must be liberalised and also that companies can make a departure in regard to policies for Rs. 1,000 without medical examination.

There is perhaps no business in which co-operation for common purposes is more feasible. During the years when the Act was in the making Indian insurance companies built up a cohesive, collective personality of their own. That sustains hope as to internal development along lines indicated already. In an earlier edition reference to the falling yield on the funds produced arguments as to the need for adjustment of premium rates and the basis of valuation. The arguments recur since the net yield on life insurance companies' funds has fallen to 3.88 percent in 1943 while the expense ratio has risen slightly owing to the increase in new business from Rs. 42.83 crores to Rs. 72.12 crores. The majority of Indian life companies are still handicapped by a high expense ratio and the need for raising premiums, adjustment of participating premiums, and a strict limitation of bonus is obvious to other besides the Superintendent of Insurance. Though 1943 was an exceptional year in many ways the mortality experience of Indian companies was eminently reassuring. Claims by death took Rs. 2.27 crores only out of the total premium income of Rs. 15.9 crores received by Indian offices. The addition of Rs. 8.29 crores to the Total Life Funds reflects the increase in business like the improved share of total business secured by Indian companies in 1943, competing as before, with strong, well placed rivals.

The results of individual companies for 1943 indicated that the problems of rapid growth and adjustment thereto were manifest. They faced as in 1942 a fall in interest income and the justness of the observations made in the Yearbook for 1943 as regards the rate of interest is strengthened by what is said again as to the need for absolute security of the money due to policyholders. Insurance is readily distinguishable from all other business; and risk-taking woud be an illegitimate element. Statutory provisions for the investment of ife funds acquire their justification from the need to protect policyholders. It is held that insurance companies must look upon a falling rate of interest as natural, and can look forward only to a gross return of 4½ per cent. Forecasts of cheaper money are are familiar, but there is the further point that large-scale borrowing is to be undertaken after the war for India's development. Banks, it has been pointed out, dealt with the problem of cutting down the rates of interest allowed on deposits and insurance companies have to fall in line at some time. Unusually low yields are not peculiar to insurance companies. Private investors certainly face the same fall and are apparently reconciled to it. The universal disposition to avoid anything like monetary stringency must be thus reckoned a potent factor for the future. Recalculation of premiums is suggested on the ground that inequity between variations and durations should be avoid. The argument is strengthtned by reference to the level of taxtation enforced by the war. The suspension of bonus declarations is upheld for the reason that valuation surpluses would diminish.

The outstanding features of 1943 were not the increase in business and resources. It was the fall in the lapse ratio. Detailed statistics have been compiled to elucidate the trend. Insurers have been asked to watch the trend and to conserve business. The marked improvement in new business arising from the expansion of money incomes is not regarded as sufficient to warrant the belief that a permanent drop in the lapse ratio is assured. It is apparent that wide variations are the rule and the only conclusion desirable is that the uncertainties which affected life insurance in 1942 did not interfere with the normal operations of the fall in the lapse ratio.

The reviewer of the year in Insurance passes to a consideration of the lessons of the Bombay disaster of April last. Insurers' own mistakes including their failure to reinsure are apparent to the authority which emphasises the need to distribute risks. The only material conclusion is that Reserves for unexpired risks must be on an ample scale. It is not desirable to concentrate on any field and the too close connections between insured and insurer receives rather strict notice. But what the disaster indicated most was the need to obtain the protection of insurance. Persons and property of any value should be insured. The official enquiry does not detract from the finding that real losses could have been avoided by many through the simple precaution of insurance.

The consequences of the falling rate of interest extends to insurance companies' shareholders. It has been urged cogently that extreme conservatism is dictated by circumstances. Strong reserves must be created before dividends are declared and a self-denying rule enforced by association of insurers is recommended. Till a company is mature, reserves must have the first claim on profits, and it is noteworthy that well-established companies have adopted a strict rule as to dividends. It is hardly necessary to add that appreciation over a long period constitutes the return to the shareholder in such cases. Insurance shares certainly have not lagged behind in the march of share values in 1944.

Some advice as to the policyholders also appears in the Yearbook. The optimum cover for an individual is described as being three years' gross income. If every policyholder adopted the advice to take policies for long terms, with premiums limited to the active-earning period, there would be material improvement. Objections to short-term endowment policies particularly those designed to avoid taxation, are advanced in the course of a review dealing with the relative merits of whole life and endowment policies. Since bonus attractions are receding, it is perhaps necessary to say that preference for whole life policies would develop. To his observations the Superintendent adds a statement of Sri Ernest Benn to the effect that an increase in whole life business is probable. There is a radical difference between insurance and investment though the former too is concerned with the probabe return on capital. If insurance becomes the principal, and not the alternative method of saving for many, there may be a vast increase in the number of plicies issued and the sums assured. There is, however, no need for a multiplication of companies. In the Year-book it is insisted that agricultural and industrial development does not call for new companies but for improved administration through a trained staff and field force able to help the individual policyholder. The bracing effects of the advice tendered can only be noted in the future, but it must be said here that the cnart of progress is simpler to read since our insurance companies have a list of Do's and Dont's.

The Select Committee met in Delhi during January last to consider the Insurance Act Amendment Bill. Insurance circles are very critical of some of the proposed amendments, specially of those that affect the interests of chief agents. The Chief Agents' Association, the Indian Merchants' Chamber and others have forwarded their views to the Committee. On behalf of the chief agents, it is contended that the organisation of life through chief agencies is really more economical than any other method and that it is altogether erroneous to think that the principle of effecting economy in the working life offices could be achieved by statutory interference with existing contracts. The Chief Agents' Association Committee has prepared a table showing the ratio of expenses on the renewal premia of several leading life offices working on the chief agencies model and the ratio obtaining on other methods of organization. It is felt that the increasing tendency to interfere with the organization and internal questions of life offices is not conducive to smooth working. The suggestion has been made that economic working of life offices in the interest of policy-holders can be secured by limiting by statute the percentage of the first year's renewal premium incomes which the companies might be left free to spend. This, it is argued, will obviate the need for further and irksome interferences, while at the same time life offices will be free to develop on individual lines. A conference of representatives of the various companies in this regard seems to be very desirable. Equally stout opposition exists to the proposal for restricting the period of the chief agency to a maximum of ten years. It is said that ten years would hardly be sufficient to bring a worker to the stage of undertaking the organization and development of business in a new territory and particularly for a new company. The amendment increasing the minimum limit of a life policy to Rs. 1,000 with a corresponding increase in the maximum limit of a policy with provident fund societies to Rs. 750 is considered both uncalled for and ill advised. The arguments are that the facility of obtaining insurance at a cheaper rate which is available from a life office will be denied to a large number of persons and would amount to an unwarranted hardship. Secondly, quiet a large number of life companies doing insurance are still in their infancy and depend to a large extent for their business on the poorer classes.