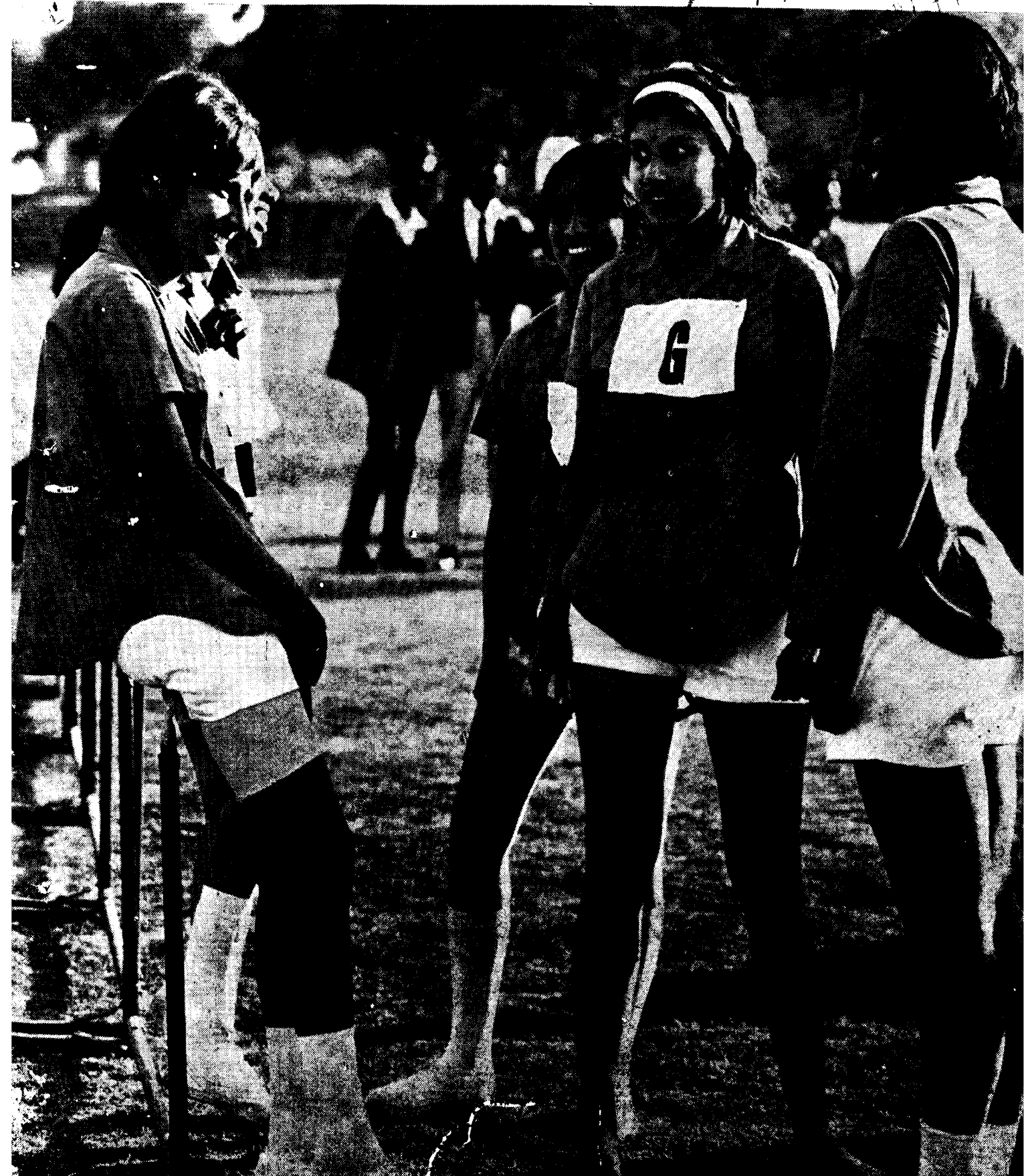


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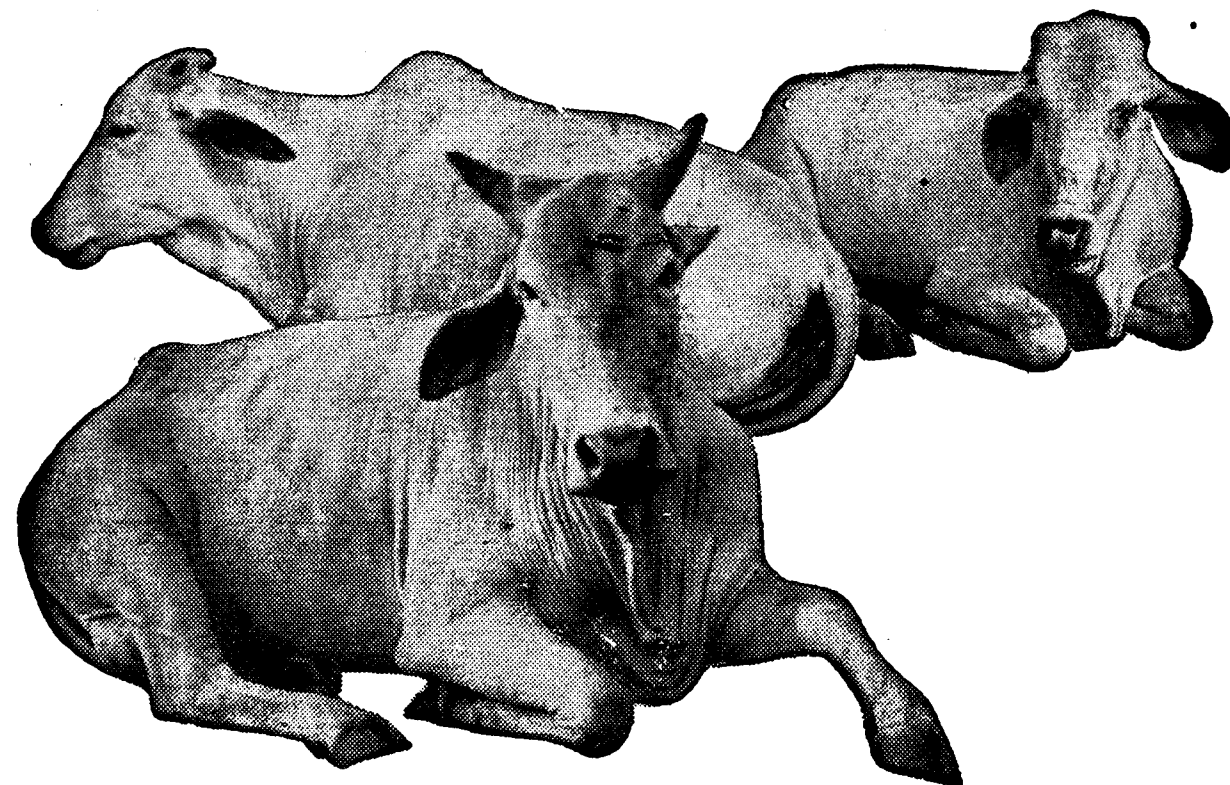


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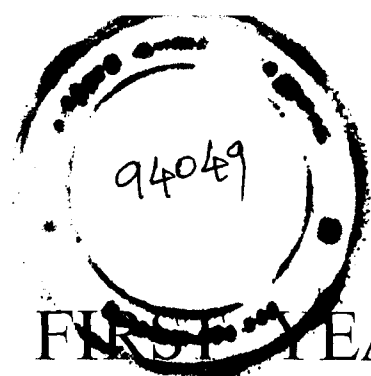
LEST WE FORGET

The quest for work for all and peace for all mankind are now the greatest needs of humanity and I believe that both work and peace can be joined together in a new orientation of education everywhere in the world.

V. V. Giri

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Editorial

FIRST YEAR OF THE DECADE

THE first year of the decade of the Seventies has been significant in the life of the nation. In the economic field it may well be that during the seventies, we may turn the corner and become more and more self-reliant. An unmistakable sign of it is the upswing in foodgrains production which in 1969-70 was 99.5 million tonnes, the highest figures so far. What is more significant for the future, the per hectare yield has gone up to 805 kilograms, thanks to the introduction of scientific agriculture. If the momentum of progress is maintained there is no reason why we should not be completely self-sufficient in food much before the decade bows out. This may turn into euphoria if we overlook the continuing defects in agriculture. For example, modern agriculture is yet to spread to small holdings of less than five acres which account for as much as 62 per cent of the holdings. Again in the land tenure system anomalies which militate against social justice and inhibit production have struck tenacious roots. These have to be corrected before time runs out and we become helpless witnesses to remedies imposed forcibly by the discontent.

Co-eval with the stride in agriculture, is the development of heavy industry. India can legitimately take pride in what she has been able to do in this sphere: steel, for instance, which is the backbone of all development—industrial as well as agricultural. The total steel making capacity in the country today is nearly nine million tonnes—a sixfold increase since 1947. The combined capacity of Hindustan Steel plants accounts for two-thirds of the country's total steel capacity. In addition, the Alloy Steels plant, at Durgapur, produces the bulk of alloy and tool steels required. The public sector steel industry has made vital contribution to the national economy such as aiding the growth of a self-reliant and self-generating economy, building up indigenous knowhow and creating a cadre of highly trained technicians and strengthening defence production potential. But shortcomings cannot be slurred over. Hindustan Steel has not been performing as well as it could have been. In 1969-70, however, it made some headway. Rourkela and Bhilai made profits during the year while the loss at Durgapur came down. The current national steel development programme provides for doubling the existing capacity from 9 million tonnes to about 19 million tonnes by the end of the Fifth Plan period.

The nationalisation of 14 commercial banks has undoubtedly given a new direction to credit policy. The nature of bank assistance to agriculture, which accounts for half of the national income, has altered significantly

since nationalisation. Likewise, lending policies to the small-scale industry are now based on viability of a project and end-use of bank loan. There has been a larger flow of bank assistance to small-scale industry which employs about 40 per cent of the total industrial workers. Other neglected sectors too have benefited.

In industry, the seventies may perhaps see India qualify herself to be called an advanced nation. The list of new industrial products she has begun manufacturing is formidable: printing and rubber machinery, paper and pulp machinery, mining machinery, commercial vehicles, sugar mill machinery and boilers, including mountings. The emphasis on heavy industry in the Second Plan, the subject of so much adverse criticism today, may after all prove to have been a wise decision. Certain intangible benefits have to be noticed. To mention one, the creation of a hard core of technicians able and confident of making sophisticated industrial products. In the years to come, Indian technicians will be competent to set up a steel mill or an oil refinery without having to import technical knowhow at heavy cost, both in money and self-respect.

In foreign trade, the major development in 1970 was the setting up of several new public sector agencies to take over large chunks of import trade in pursuance of the government's policy of progressively nationalising the import trade. A Project and Equipment Corporation has been set up in order to exploit fully the possibilities which have opened up for the export of Indian machinery and equipment such as rail wagons and engines, power transformation systems and other complete industrial installations.

The list of achievements in various fields, for example, in health, postal services and communications, electrification of villages and so on can be impressively lengthened. What is more relevant is: has all this raised the standard of living of the average Indian? There can be varying answers to that question depending on the outlook of the person who is required to answer. Some can point to the rising prices, growing unemployment among the educated and the failure to arrest the growth in population despite enormous sums of money spent on the family planning drive. Yet it is undeniable that the average Indian in 1971 is better fed and better clothed than he was in 1951, the first year of planning. Problems remain—in abundance. The challenge of the seventies is to face them and face them with determination.

P. S. LOKANATHAN

A CRITIQUE ON MANAGING AGENTS AND MANAGING DIRECTORS

THE abolition of the Managing Agency system, effective from April 1, 1970, is undoubtedly a landmark. With all its faults and deficiencies, it had contributed much to the industrial development of India, both before and after Independence. In the special circumstances prevailing in the country in the latter half of the 19th century and first half of the 20th century, its distinctive characteristics were undoubtedly an advantage. With the limited availability of entrepreneurs, an undeveloped capital market, and lack of technical knowhow, development of Indian industry would have been very tardy but for the Managing Agents who were in a position to supply promotional, financial, management, banking, insurance and marketing services. Its greatest merit was that it enabled new industries and new units to be set up, utilising the same personnel for setting up and managing new businesses. Consequently, expert services and know-how could be had for a modest fee.

Against these advantages must be set certain serious shortcomings. The system, in its operation, was costly because the management took an unduly large share of the profits. Secondly, it failed to bring about an increase in the supply of entrepreneurs; it tended to perpetuate scarcities by making management and entrepreneurship a close preserve of a few dominant family houses. Thirdly, it lent itself to serious abuses such as inter-corporate investment, and speculative dealings in goods, raw materials and shares. These defects have been recognised and, over the years, the Company Law Administration had been tightened and action taken to eradicate some of the defects of the system. For example, remuneration to the Managing Agents was limited through a sliding scale of profits. Speculative dealings of Managing Agents have been specially controlled through compulsory disclosures of interest and through other measures. Licences had been given to new entrants so that the monopoly hold of some large industrial houses has been reduced. Many sections of the Company Law have been directed towards reducing the power of the Managing Agents and to prevent abuses of the system.

“Members of the Board of Directors have neither the opportunity nor the desire to control management; they are content to be re-elected...”

We have to evolve a new system of remuneration which would bring out the best in a person.”

Nevertheless, there was the widespread feeling that the Managing Agency system had outlived its usefulness, that whatever improvement could be effected by law would be inadequate, that its continued functioning under the new democratic system of values would be unsocial and that nothing short of abolition would meet the new situation. While its abolition was due to a number of circumstances, it may be said that pressure of public opinion was the most irresistible.

The fear that with the abolition of the Managing Agency system, there would be confusion and retardation of industrial development have just not proved true. The surprise, rather, is that industry, big and medium, has adjusted itself to the altered situation. This adaptation and adjustment reflects great credit on the previous management. Perhaps the main reason was that the change from the Managing Agency system to the Managing Director system was not a revolutionary or even a major change: What happened was that the old Managing Agency system remained with a new designation. The powers which the Managing Agent enjoyed have now accrued to the Managing Director who is to work under the Board of Directors. But the old Managing Agents also were supposed to work under the guidance of the Board of Directors. By and large, the so-called Board of Directors' management has been a myth. It was so under the Managing Agency system. It is so under the new system also. It would really change only when conditions change in important directions. In the past as well as the present, the Board of Directors elected themselves. In the past Managing Agents practically elected the Board of Directors. Today, a Board, once elected, continues, and Directors do not seem to be independent persons; nothing has very much changed. Save in a few cases, members of the Board of Directors have neither the opportunity nor the desire to control the management; they are content to be re-elected and to pocket the director's fee.

Pay and Perqs

Before commenting upon the changes that have been brought about as a result of the abolition of the Managing Agency system, let us review the action taken by the Government in pursuance of the abolition. The remuneration of the Managing Director, his perquisites, allowances and amenities, the conditions of his employment, his tenure, are all fixed now by the government. Nobody can be a Managing Director unless his appointment is approved by the Government. This power to appoint management or to recognise particular management rest-

CHALLENGES TO COOPERATION

D. R. GADGIL

Individual shareholders have ceased to function and have become mere lenders of capital with the difference that while lenders are entitled to take back money, the shareholders cannot easily do so.

ed with the Government even before. That the Managing Director is to work under the direction of the Board is again no new policy. The real change is in limiting the amount of remuneration payable to the management which has now been reduced greatly. Under the managing agency system, in spite of limitation on the amount of profit, it was a substantial amount. Even though the remuneration was fixed on a sliding scale, managing agents were able to draw from a company anything from Rs 1 lakh to Rs 20 or Rs 30 lakh depending on the size and profit of the concern and since the managing agents were supposed to manage quite a considerable number of enterprises, the total remuneration of a large managing agency firm went up to a colossal sum. Today, that is not possible. In the first place, government have limited the salary of a Managing Director to Rs 7,500 per month. Only in a few cases is it more. In a considerable number of cases, it is less. The Managing Director is allowed a free house, a free car, provident fund privileges, gratuity and medical benefits and other perquisites, but these are limited to 100 per cent of the salary. A Managing Director, unlike the Managing Agents, is not allowed to manage more than one large company except in special circumstances. Also, the total remuneration to a Managing Director cannot now exceed about Rs 1.35 lakh to Rs 2 lakh.

Now, whether this is fair and reasonable is open to argument. While some managements feel that it is inadequate, others believe that it is too much. Without arguing the matter in too great a detail, one may say that it is about right,—having regard to the fact that the transformation must not be too sudden or too drastic. Nevertheless, there is the growing opinion that merely because managers manage industries, there is no reason why their remuneration should be so far out of proportion to the general salary structure in the country. Can we say that the qualities and capacities required of a Chief Justice of India are inferior to those of a manager of a large firm? Also, be it noted that beyond a certain level, income ceases to have any direct impact on the quality of work. The best in a man would usually come out on account of his desire to achieve something big or outstanding. An extra monetary reward will not affect this urge for achievements. Motivation comes from a desire for achievement, and monetary reward is not necessarily the only incentive for work and fulfilment. Further, under a planned economy, the risks of a manager are greatly reduced,—the very controls which might adversely affect growth also ensure minimum prices and a minimum return for investment.

Better System

A system of remuneration which would bring out the best in a person has to be worked out. People work for all sorts of motives and considerations. That monetary reward is one of the factors is certainly true. But the desire for power and recognition, and the desire for self-realisation and achievement are also important urges. That monetary regard is not a determinant of high level efficiency may be noted from the fact that a man continues to work even after becoming a millionaire although he does not need additional money rewards afterwards, as he has more than enough for all his needs, and for 'conspicuous consumption', too. What urges him is quite

different. Up to certain levels of income, there is a close relationship between money reward on the one hand and volume and quantity of work on the other. The 19th century socialist theory was built on the assumption that money incentive was not a powerful one and that work for the State would subsume monetary interests. This theory may be open to question. But the opposite theory, indulged in by the modern capitalist and entrepreneurs, that money reward is everything, is equally wrong.

To evolve a system of remuneration, material and non-material, taking into account all factors that motivate a man to work, is by no means easy. But this has got to be done if society is to get the best out of every man. The number of persons who work in voluntary organisations and in honorary capacities is ever increasing. It is worthwhile to ask, how are they motivated. The sheer desire to do something good for society, combined with a lot of not so good desires, such as power and recognition, is the answer.

In India today industrialists are charged with great economic power. A great deal of it stems from the mere fact of their having control over large financial resources, which they can use either for good or bad purposes. It is the duty of society to see that this power is exercised for social ends, and not in a pursuit of private gains.

To revert to the question of management, several former Managing Agents have now converted themselves into consulting firms where there are no limitations on the scale of remuneration. These consulting firms work on lines similar to the former Managing Agents. It is a situation that calls for control measures to prevent any abuses.

In my view, the system of management must be radically altered. We must recognise, frankly, the fact that shareholders of the company are only nominal owners. The ownership of the shareholders has always been a myth, even more so by virtue of the fact that today the owners (shareholders) of large industrial houses are the LIC and the Unit Trust and also because financial institutions like IFC and ICICI are large creditors to these companies. Every decision of the company, including declaration of a dividend, has to be got approved by these financial institutions and by their larger shareholders, the LIC and the Unit Trust. Individual shareholders have ceased to function and have become mere lenders of capital, with the difference that while lenders are entitled to take back their money, the shareholders cannot easily do so. Recognising this, and also with a view to attract more permanent capital to industry, I should like to suggest that a minimum return of 5 per cent per annum should be guaranteed them, along with

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EVERYBODY would agree that cooperators and cooperative organisations find themselves in a rather peculiar position today. In some ways, it is quite a crucial situation. It arises out of both our achievements and our failings. In those areas where cooperation has not been able to establish a firm primary or local base, its effectiveness as an instrument of planned development is challenged, and there is naturally a great deal of criticism. There is great deal of scepticism about the attempt to continue with the Government policy declaring cooperation the agency in general for achieving development. But even in areas where it has succeeded, the very success has brought forth a variety of public reactions. One of these being that cooperation has not been able to give direction to social movements of the type expected. It has succeeded among those strata who have benefited from the general development programmes, while cooperative activity has not been able to lift up those for whom the general development programmes of Government assistance were not suitable or whom they did not reach. Now this is a challenge to which you can react in a number of ways. I insist that cooperation as an instrument of helping the weaker sections could help Government policy but in areas where Government policy itself did not help the weaker sections or had not started development plans for the weaker sections, cooperatives could not accomplish the work.

Further developments, which are more recent, have also increased our difficulties like the nationalisation of the banking sector to a large extent and general extension of public sector in trading and other spheres. This is an appropriate trend for which there is general backing of the people at large. Only it creates some difficulties of adjustment for the cooperators. Vis-a-vis the private sector, the cooperators had asked for protection sometimes. When discussing the ex-

tremely intricate problems of joining together cooperative effort with the work of the nationalised banks, you cannot possibly ignore a set of problems that arise out of (1) the general structural and organisational private sector base of these banks and (2) the large difference in areas and modes of operation. The situation of the cooperator is slightly worsening in this context because he cannot expect to get, automatically, from the Government and officials, the sympathy that he could expect when he was complaining against the private sector.

Peculiar Position

The position of cooperation in the Indian context is extremely peculiar. There are very few parallels in other countries to this position and there is, barring the working of individual organisations, very little that we can learn either from the thinking or working of cooperatives in other countries. The two main aspects of the peculiarity of Indian cooperation are that on the one hand cooperation is looked upon as the cooperative organisation of society and as an ultimate socio-economic aim. This is not done in any other country. That there is an enormous agreement in India amongst all public parties and opinion leaders that a cooperative form of organisation is specially suited to our circumstances and possibly to our genius, is almost taken for granted. This being taken for granted, there is the other expectation which is the operative expectation that the cooperative organisation will in fact serve as the agency of transformation, that they will be efficient development agencies and by their spread, a long-term socio-economic transformation will come about. This places cooperatives and cooperators in a special, if you may call it, in a privileged position. It is also a very difficult position because what is expected of them is much beyond their

present powers; and yet the expectation is there. The peculiarity of the situation is that in spite of the experience of the last 15 years, in spite of the clear recognition that over large parts of the country, over large areas, cooperative prescriptions and programmes have almost failed, you will find in socio-economic thinking today no alternative to cooperatives.

When we wrote the Rural Credit Survey Committee Report in 1954, we found that only 3 per cent of total rural borrowing was from cooperatives. If cooperation which had subsisted for 50 years, had done so little, we in India had to confess that cooperation had failed and yet cooperation was the only hope. Few disagree with this. Take the latest report on Rural Credit which talks of a multi-agency approach. You will find the proposals are essentially transitional. The report does not think in terms of other agencies, as all being necessarily rooted in rural society and subsisting for all times. There is no new multi-agency amalgam or political, social or economic structure that is being prescribed. Multi-agency, as before, is a transitional arrangement helping to make the transition to a fuller co-operativisation possible. So the cooperators have really to think out the future in this context.

In India where you are expected to cover the whole of rural society with a cooperative net-work, it is not as much the organisational problems of the individual society, it is the organisational, operational and theoretical problems of the total structure, what I call a system, that are important. Unless we build a Cooperative System which is viable and operational, successfully, we cannot match the national expectations. We have to think in terms of the effort that is necessary, and which must be national and also cover all sectors of rural economic life. I am deliberately saying rural economic life because the expectations in urban areas are not much and the prospect is less hopeful than in rural areas.

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Edited version of a speech delivered recently by the Deputy Chairman of Planning Commission at the Conference of State Cooperative Marketing Federation.

INDIAN FARM SCIENTISTS ARE HELPING THE DRY LAND FARMERS

M. S. SWAMINATHAN

RECENT scientific advances have enlarged the vitas in dry land farming in our country. The conquest of the season-bound nature of the varieties cultivated has liberated these crops from subjection to the behaviour of the season. Geneticists have achieved the disassociation of season and crop duration by developing varieties which are insensitive to the length of the day and to temperature. Such photo-and thermo-insensitivity coupled with a shift in emphasis from the individual plant to a population performance have helped to raise very considerably the ceiling on yield imposed by lack of assured irrigation.

Some recent quick and high-yielding varieties for dry and farming developed by the Indian Agricultural Research Institute (IARI) are C.S.H. 3 Jowar (100—110 days maturity), Aruna castor (100—120 days), Pusa Ageti arhar (100—120 days), Pusa Baisakhi Moong (50—60 days), Suphala mustard (90 days), Ratna barley (100—110 days), Kalyan Sona wheat (110—120 days), Pusa 2—21 rice (100 days), and PRS 72 and PRS 74 cotton (120 days).

Another breakthrough has been in the field of soil preparation and moisture conservation. Because of thousands of years of shallow ploughing with a wooden plough and due to soil erosion, there is in many parts of our country an impervious hard pan just below the top soil. This leads to the incidence of flash floods, even with a few inches of continuous rain, as happened recently in Hyderabad. IARI scientists have therefore been using

deep rooted plants like castor and arhar as ploughs and have developed a series of efficient and simple farm machinery for achieving appropriate tillage.

Simpler systems of water harvesting have also been developed for better water utilisation. One of these is the raising of *kharij* crops in ridges, collecting moisture in the furrows for the *rabi* crops. Thus double cropping can be introduced where normally only one crop is taken. Another important development is the design of low cost storage reservoirs using locally available clay like Bentonite, which can help to save some of the rain water for 1 or 2 irrigations after the rainy period.

Supply of Nutrients

In dry lands there is not adequate moisture for the fertiliser to go into solution and become available to the plants. A special implement has been developed by the IARI which deposits fertiliser in deeper layers of the soil. Where even this is difficult fertilisers can be applied through the leaves. IARI researchers have discovered that by using a low volume sprayer even a 20% solution of urea can be safely sprayed on the plants. Before this discovery, it was not possible to apply more than 2% solution without doing harm to the plants. Most of our pulse as well as groundnut production comes from the unirrigated farms. Pulse crops have the unique ability to fix atmospheric nitrogen but such fixation is poor in our country due to the inefficient strains that have been developed. In addition, a technique of pelleting has been standardised which helps the rhizobial cultures to

establish and function efficiently in both alkaline and acid soils. Alkalinity and salinity are common in the soils of dry farming regions and hence this technique will help to enhance pulse and groundnut production very greatly.

Pests can cause great harm to dry land crops. The recently developed integrated pest control measures, involving an appropriate admixture of genetic, agronomic and chemical methods, will greatly reduce pest damage. The "Pusa Bin" method of grain storage can greatly solve the acute storage problems in these areas. In this technique, an alkathene sheet is placed between two brick layers. The "Pusa Bin" can be constructed by every farmer.

A dry land 'crop-cafeteria' (choice of crops) has been established at the IARI employing a synthesis of all the recent scientific discoveries in water harvesting, land preparation, plant breeding and supply of nutrients. A great many cropping sequences are shown from which the farmer can choose according to the marketability of the produce, profitability of the rotation, soil and climatic conditions and his input mobilising potential. A wide choice of technique in tillage and water harvesting are also provided, so that a graded dose of sophistication can be introduced in dry land farming, with the growth in the income of the farmer.

To Our Readers

Despite our best efforts there has been delay in the publication of "Yojana". However, we hope to resume normal publication very shortly. Inconvenience caused to our readers and advertisers is deeply regretted.

Chief Editor

SWEDEN by many standards is a most successful country. She has the highest standard of living in Europe and comes next only to America amongst all the countries of the world. She offers to her citizens the most advanced system of social security in the world. The key to this multi-dimensional accomplishment lies in the fact that Sweden has the most organised and also the most educated society.

For the last 100 years or more Sweden has had compulsory primary education. The beginning of the Swedish system of elementary education could be traced to the reading of the Bible. In 1623 the king established the first gymnasium which taught Latin, Greek, theology, etc. By 1824 every second community in Sweden had a small school. Today the revised system of Swedish education provides compulsory education for 9 years to every Swedish child. After this, a Swedish boy may either go to a gymnasium for higher education for a period of 3 years or a trade school or a continuation school known as Fack. Thereafter more academically inclined students will go to the university.

In spite of this the standard of education of the rural population was comparatively lower. A felt need of the rural population was, therefore, to supplement or upgrade their education in their later lives and in response to this need, folk schools were established. Father Grundwick of Denmark was the originator of this idea which spread to rural Denmark as well as to rural Sweden. They were owned by temperance societies or other popular movements. Today they number 105 in all. Now that the standard of education in Sweden has risen uniformly in urban as well as rural areas, the folk schools have taken to conducting a variety of courses in leadership and social work etc. for the rural population.

But apart from the regular educational institutions and the folk schools, Sweden has a remarkably comprehensive system of adult education which has, perhaps, no parallel in the world.

ADULT EDUCATION IN SWEDEN

P. R. DUBHASHI

There are as many as 14 National Adult Education Associations which conduct on their own an extensive programme of adult education through a network of study circles. For a country with so small a population as 8 million, there are as many as 150,000 study circles.

Study Circles

A study circle is a small group of 10 to 15 persons who study through discussion a wide range of subjects of interest to the adult citizens, such as languages, specially English literature, art, music, national economy, trade union problems, consumer co-operation, agricultural cooperation, various aspects of agriculture like forestry, agricultural taxation, home economics, food and nutrition and even problems which go beyond the national frontier like the European countries. This method of adult Common Market and developing education through study circles is a typical democratic method of education. Indeed the study circles are the nurseries of democracy. It may well happen that some members of the study circle have university degrees while others have a schooling of only 6-9 years. Yet it is the adult experience of individuals of diverse background that enables them to meet on

a level of equality and participate in the discussion.

The study circle meetings are held mostly in winter. It is well-known that Sweden has a very cold and long winter when the citizens keep indoors. In summer they go on long holidays and, therefore, the study circles do not function in that season. Every study circle has a leader who is selected by the Adult Education Association. The subjects chosen are such as would contribute to advancement in general education as well as the professional advancement of the participant.

The study circle method is widely used for a continuous process of education of the employees of the consumer cooperative movement as well as of the agricultural cooperative movement. Neither the employee nor the employer considers that the process of education ends after an individual takes a job. They believe that education will enable him do the job better. This is responsible for creating a society constantly geared for change and improvement.

The method of education in study circles is most interesting. It is based on discussion as well as on extremely useful educational material which is suited for self-study and group study of adults. The responsibility for preparing this material is taken by what are called the correspondence schools. The most important among them is the Hermods which gives out 1,00,000 courses every year. The next in size is Brev Skolan of the Trade Union and the consumer cooperative movement which puts out 50,000 different courses every year on 300 different topics belonging to 14 different subjects. The third correspondence school, known as the LTK, belongs to the farmers and agricultural co-operatives, and brings out 15,000 different courses every year on subjects connected with agricultural and rural development as also on the general subjects.

These courses differ very much from purely academic text-books which are theoretical and being remote from practical experience are not fit for self-study by adults. The

material produced by the correspondence schools, on the other hand, is extremely practical and is specially oriented for self-study.

In recent years liberal assistance is available from the state for the activities of the study circles. The material sent out by the correspondence schools is initially paid for by the study circles but later 3/4th of the cost is reimbursed by the Adult Education Department.

One is greatly impressed by the amazing vitality of the adult education associations which organise the study circles and correspondence schools. The biggest amongst them is ABF, which belongs to the Trade Unions. Vux Skolan is the adult education association of the farmers and the agricultural cooperative movement. Their correspondence school, Brev Skolan, has not been started and run by the state at all. It is owned by the ABF, adult education association or the labour organisation, the consumer cooperative movement, the temperance movement and the salary earners' association. The LTK is owned by the farmers' association and by the agricultural cooperatives. The Brev Skolan is run by the centrist Farmers Political Party.

The material prepared by these correspondence schools is used not only by the study circles but also on radio, television and in schools. Thus adult education associations derive their strength from various political and economic institutions.

We in India have often tried to transplant the idea of the study circles but it has not grown because it has not been a part and parcel of our popular life as in Sweden. We must find some way in which it can be adapted, accepted and linked up with the popular institutions in our social life. Indian democracy would be strong to the extent to which our adults have continuous opportunity for self-education. In this task, the Swedish system of adult education through study circles, the correspondence schools and the popular movements can provide a pattern for us to follow.

CHALLENGES TO COOPERATION

from Page 5

The essentials of what I call a System are really its possibility of working in an integrated fashion at all centres and at all levels. If an integrated monopoly procurement system has to succeed, then you must entrust the co-operators as a whole and the co-operators must build an integrated system.

If it is a System, all the sectors must come together. In a System, federal problems must also be worked out. We must insist that the monopolist, in this case the State marketing federation in the marketing system, must allow the lower units to share the profits to the largest extent possible. The marketing federation should keep its share as low as possible so that the small units get the largest benefit. This is the concretisation of the working of the System.

The attitude appropriate to private sector operation is that of individualistic aggressiveness. Each individual is aggressive, each unit of organisation is aggressive. You go on thinking of dominating the field and the bigger you are, the more profits you have, the more successful you are considered. On the other hand, you cannot work a cooperative system unless you consider the interests of others equally as of yourself, of the other members of system or the organisations at various levels or in various sectors. So if you are the federal apex, you must look to the interest of the primaries as much as of your own. If you are federal apex talking to another federal apex, then both the sectors should have equal opportunity of playing their part. Now this I am afraid is not clear today. We have to be able to make much more general the attitudes that are appropriate to the successful working of a cooperative system.

The last point to which I would draw your attention is the great paucity in India in most areas of real leadership both at the local and national levels. Unless we are able to bring into existence leadership of very much greater size and improved quality, we shall not go very far in the desired direction.

There is today a crisis. Something has to be done about it. Existing cooperative organisation and thought cannot serve our purpose. We must put forth the type of leadership, the type of thinking and also determine the direction which we really want in

the future. I am afraid that unless we do this the blind faith in the cooperatives which is still persisting in the Indian public opinion may not be retained some years after.

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RAJI RAMAN

Self-Sufficiency at a Fast Rate

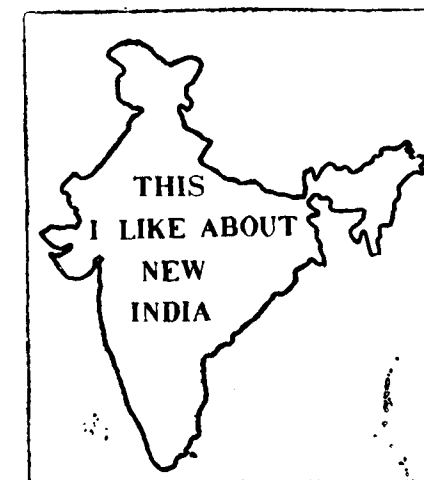
About ten years ago I tried to get a roll of cellophane adhesive tape made in India and couldn't. Now these tapes made in India are available in various sizes and shapes. This is only an example. What I like especially is the speed with which we are trying to be self-sufficient in many fields. I feel proud when I see or buy something which only some years ago we were importing but which are now made in India—from a needle to an aircraft. As far as consumer goods are concerned our markets are full of modern mechanical toys, plastic wares, synthetic clothing material, cosmetics, medicines, tinned food, bicycles, scooters, refrigerators, airconditioners—all made in India.

S. L. SHIRODKAR

Significant Progress of Coops

What I like about "New India" and of which I am particularly happy is the significant and heartening progress of the cooperative movement as an integral part of our developing economy. The movement has made rapid strides, particularly in the fields of credit, marketing and processing. Numerous examples of the spectacular progress of the movement as also of increasing diversification of the activities of the movement to various new fields of economic activity may be cited.

Primary agricultural cooperative credit societies cover roughly 90 per cent of our 5½ lakh villages. They serve nearly 32 per cent of the total rural families. Short-term and medium-term loans advanced by them increased from Rs 240 million in 1951-52 to Rs 2,030 million in 1960-61 and to Rs 4,280 million in 1967-68. The proportion of cooperative credit to total borrowings of cultivators rose from three per cent in 1951-52 to 25 per cent in 1967-68. The value of



agricultural produce handled by 3,465 cooperative marketing societies rose from Rs 219 crore in 1965-66 to Rs 343 crore in 1967-68. Cooperative sugar factories, numbering 85 now, account for nearly a third of our total sugar production. The value of consumer articles distributed by cooperatives in urban and rural areas is now of the order of Rs 550 crore. The progressive enlargement of the cooperative sector with its contribution to economic development, especially in the rural areas, is one of the spectacular achievements of New India. The movement has imparted fresh vigour and momentum to economic development. A large variety of cooperative enterprises, credit and non-credit, agricultural and non-agricultural, have sprung up in recent years.

Apart from its positive contribution to economic development the co-operative movement has been responsible for the new surge of local initiative and leadership. Of late, there has been a tremendous spurt of activity in respect of promoting new cooperative ventures in different sectors of the economy. Enthused by the success of cooperatives we find people responding enthusiastically to the call of their local leaders to subscribe to the share capital of new cooperative ventures. In fine, the movement has come of age in New India.

It is true, on a critical study of the movement one finds several gaps and shortcomings. One of these relates to the performance of the movement as an instrument of ameliorating the economic conditions of the weaker sections. Yes. This indeed is a vital task before our cooperators.

P. CHAKRABARTI

Caste Barriers Breaking Down

A couple of months back I attended a marriage ceremony. The bride was a high caste Brahmin and the bridegroom was a Namasudra—a scheduled caste. The marriage did not take place in Marriage Registrar's Office but was solemnised at the bride's place and all the social customs and religious ceremonies were followed. The bride's father, an orthodox Brahmin, himself conducted the ceremony. All the relatives and friends attended this marriage.

This is not an isolated case today. But twenty or twenty-five years ago such a thing would have been looked down upon by society. The idea of intercaste marriage was simply intolerable and unthinkable. But now this has become a common feature. In the matrimonial columns there are countless instances to show that caste is no barrier. Even a decade ago it was the main criterion of a negotiated match.

More people today are breaking the barrier of caste proving that ours is a casteless society and that this is not just a clause in the Constitution. It is true that few still cling to the old customs but the actions of the majority of our people assure us that the day is not far off when the chain of caste, which bound the Indian society so long, will break completely.

D. V. KARELA

Equality of Religions

Indian culture and philosophy is centuries old. But the most delightful thing which I like about New India is its sense of tolerance towards all religions. I am proud of my religion, Hinduism, but more than that I am proud of the fact that in India every person has the right to follow his religion without any interference from others. There are no restrictions of any kind in India which is a secular State. Differences of religion do not affect the friendly relations among the people and different religious festivals are given due importance.

Photographic Competition

ON COMMUNITY DEVELOPMENT, PANCHAYATI RAJ AND COOPERATION, 1970

ENTRIES ARE INVITED FOR THE ALL-INDIA PHOTOGRAPHIC (BLACK & WHITE) COMPETITION ON COMMUNITY DEVELOPMENT, PANCHAYATI RAJ AND COOPERATION.

THEME AND SUBJECTS :

The photographs should reflect the spirit and endeavour of the Community Development, Panchayati Raj and Cooperative Programmes and depict the activities pertaining to :

- ALL-WOMEN PANCHAYATS
- YUVAK MANDALS and MAHILA MANDALS implementing Community Development Programme
- SCHOOL and UNIVERSITY COOPERATIVE STORES
- AGRO-SERVICE COOPERATIVES
- COOPERATIVE SUGAR FACTORIES

PRIZES

FOR SELECTED ENTRIES

FIRST PRIZE	...	Rs. 400
SECOND PRIZE	...	Rs. 300
THIRD PRIZE	...	Rs. 200
CONSOLATION PRIZES (5)	...	Rs. 50 each

NO PERSON IS ELIGIBLE FOR MORE THAN ONE PRIZE. ONE CAN, HOWEVER, SEND MORE THAN ONE ENTRY.

THERE IS NO ENTRY FEE

LAST DATE for receipt of entries extended upto January 31, 1971

HOW TO ENTER : Two copies of each entry — glossy prints in size 25 cm x 30 cm suitable for reproduction — should be sent together with the negative. Each photograph should bear on the reverse (handwritten or typed on a separate piece of paper pasted thereon) : ☐ Name and address of the competitor; ☐ Detailed caption with location (village, block/panchayat, district and State); ☐ Event or subject; ☐ Date of taking the snap, etc.

The photographs should be packed flat securely. The Government of India will not be responsible for their loss or damage in transit.

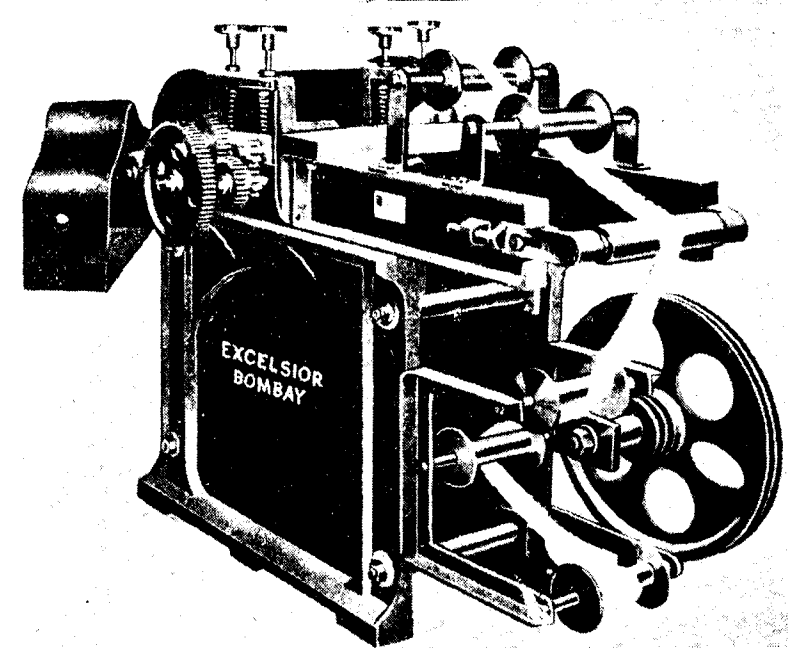
REPRODUCTION RIGHTS : Photographs entered for the Competition and their negatives, whether they win a prize or not, may also be used for putting up a photographic exhibition. The prize-winning photographs and their negatives will become the property of the Government of India in whom shall vest the right to reproduce them in any manner and for any purpose. In case of a dispute, the decision of the Government of India shall be final and binding on all concerned.

Entries should be sent to :

Director (Basic Literature)
MINISTRY OF FOOD, AGRICULTURE
COMMUNITY DEVELOPMENT & COOPERATION
(Departments of Community Development & Cooperation)
KRISHI BHAVAN, NEW DELHI-1

davp 70/589

THIS is the story of an arts student, whose imagination and perseverance, while in search of a job for himself, led him to successfully develop two machines widely used in textile and woollen industry, and thus help the country in saving foreign exchange worth Rs 48 lakh. The desired high quality of these indigenously developed and produced machines induced the Government to ban the import of their foreign counterparts as far back as 1966. And their designer/producer V. Thakur of the Excelsior Trading Company, Bombay, was presented with the highest National Award of Rs 5,000 under the Import Substitution Scheme in October, 1970. Recognition came to him from the industry as well as the Association of Merchants & Manu-



MACHINES THAT TURN WASTE INTO WEALTH

AVINASH R. GODBOLE

Our Bombay Correspondent



cutting original synthetic fibres to any required length.

There are 21 rag tearing machines and 91 fibre cutting machines, indigenously made, in use at present in the country. These being cheaper, have attracted inquiries from abroad, and are likely to be placed on the country's list of exportable items. Since the use of synthetic fibres is on the increase in textile industry at home, these machines would also be increasingly utilised as well for rag tearing and cutting of the original synthetic fibres to required lengths before further processing.

facturers of Textile Spareparts (India) awarding Mr Thakur a gold medal for his achievement.

The two machines developed by Mr Thakur are : rag tearing or pulling machine (above) and fibre or waste cutting machine.

The rag tearing machine helps the textile and woollen mills in utilising waste cloth and knitted fabrics and yarn from wool, cotton, jute synthetic fibres and other textile materials. These waste products are turned into yarn again to be spun for manufacturing cloth. Previously the woollen mills were not only importing these machines but also the costly pulled shoddy materials. Now with this indigenously developed machine which costs Rs 19,000 only as against Rs 80,000 plus duty for the imported one, the country saves the much sought after foreign exchange and the industry in terms of costs.

The second machine developed by Mr Thakur is less costly than the imported one. Priced at only Rs 6,000, it saves over Rs 21,000 in foreign exchange. The machine is ideally suited for precise cutting from 25 mm to 102 mm length of all types of synthetic fibres and tows including their waste, besides being capable of

Mr V. Thakur came to Bombay in 1959 to work in a woollen mill there. During his three-month stay in the mill, he studied the working of these imported machines which stimulated his imagination to develop them indigenously. He gave up his job and started selling textile spareparts to collect funds for translating his idea into reality. He successfully produced in 1964 the first fibre cutting machine, fabricated at a factory other than his own which came up a year later at Ludhiana. Having produced this machine at his own small factory, Mr Thakur soon developed and produced the other rag tearing machine, and thus enabled to the Government to ban the import of machines of this kind.

Mr. Thakur's future plans include developing yet another foreign exchange saver—the Grenette Machine, for which he was submitted his scheme to the Government. Mr. Thakur hopes to sell this machine at Rs 1,10,000 only as against the import price of Rs 1,30,000. Planning to produce 12 such machines per year, he will save the country over Rs 15 lakh in foreign exchange on this item alone.

INDO-CANADIAN PARTNERSHIP FOR DEVELOPMENT

JASBIR BATRA

SINCE India launched its programme of planned economic development, it has received assistance from various countries in the fields of science and technology. Canada is one such country that has contributed substantially to the development and diversification of India's economy. In a comparatively short period of twenty years the technical and economic collaboration between the two countries has assumed gigantic proportions.

During this period, Canada has provided nearly one billion dollars in development aid to India. Out of this nearly two-thirds took the form of

In the 20 years since Canadian assistance was launched, Canada has provided roughly \$ 1 billion in development aid. More than 63 per cent of this took the form of outright grants. Much of the balance was made up of loans on the softest terms available to India from any source. The total over the years places Canada second only to the United States in bilateral net aid. In 1970-71 Canada will be devoting Rs 66.15 crore, about 30 per cent of its global bilateral assistance programme to India.

outright grants for capital projects, technical assistance, food, fertilisers and industrial commodities. The only

condition, which applied to most but not all of these grants was the establishment of Counterpart Funds in rupees. These funds, totalling some Rs. 283 crore by the end of September 1970, were allocated exclusively to help development in consultation with the Canadian Government. Typically, they were used to cover local costs of Canada-aided projects, like the Idikki and Kundah Hydro Electric Projects. Much of the balance consisted of development loans, given on probably the softest terms available from any source, and export credits provided on semi-commercial terms by the Export Development Corporation of Canada.



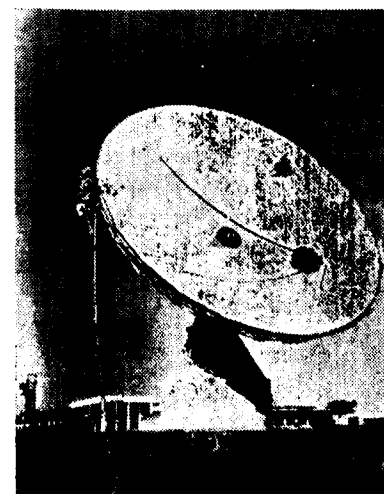
Besides aid in the form of bilateral grants, development loans and export credits, Canada also contributes to international organisations like the World Bank, United Nations, International Development Association which provide development assistance to India and other countries. Almost 20 per cent (to be increased to 25 per cent in the next few years) of Canada's development assistance was channelled through these organisations in 1969.

A significant proportion of this came to India. An important element of the Canadian assistance programme, however, is the supply of know-how in the form of experts. More than 100 Canadian consultants have worked in India under the programme and more than 1100 Indians have received technical and academic training in Canada, mostly in connection with Canadian-assisted projects.

Tailored to the requirements of the Indian economy Canadian assistance to India falls under four broad categories: food and raw material shipments; capital equipment and expertise for specific projects; technology and equipment for general development programmes, as in agriculture; and knowhow and equipment in areas like scientific research, health and education.

Irrigation and Power

While all of the assistance is of very real need to the Indian economy, the most spectacular instances of Indo-



Earth Satellite Communication Station, Arvi.

Left : A market day at Mayurakshi. The Dam is in the background.



An expert visiting a farm

Canadian cooperation are the monumental hydro-electric projects. The task of harnessing the resources of their own rugged country has endowed Canadians with a special talent for the building of dams and power stations. This genius has found expression on the Indian subcontinent, in a series of massive power projects which, when completed, will account for more than 10 per cent of the country's total output.

In order to develop sources of irrigation and power in the early Five-Year Plans the Indian Government gave priority to the exploration of the country's river systems. Canadian knowhow was enlisted at the very beginning of the First Plan, when the Mayurakshi Hydro-Electric and Irrigation Project was initiated in West

Bengal and Bihar. Since then, Canada has provided Rs 121.3 crore in grants, development loans and export credits for power and irrigation projects in India. Another Rs 150 crore has been spent in Counterpart Funds. Together with the two Rajasthan atomic power projects, these undertakings will, when completed, provide 1896 MW of power, while related irrigation projects will bring water to some 8.20 lakh hectares of formerly dry land.

The mighty Kundah Project was the first biggest Canadian undertaking of its kind, outside Canada, until engineers tackled the Idikki Project. The two projects exploit the catchment areas on the two sides of the Nilgiri Hills. Kundah, on the eastern side, supplies Tamil Nadu with 343 MW of firm power out of

an installed capacity of 426 MW. Before completion of the Kundah Project in 1964, Tamil Nadu's industrialisation was hampered by a power shortage. The undertaking has speeded the electrification of the State and in many areas there is close to 100 per cent electrification of villages. A new factory in the Nilgiri foothills turns out 80 water pumps a day, using Kundah power, and the pumps have freed thousands of farmers from dependence on the monsoons.

On the western side of the Nilgiris, in Kerala, the Idikki Project is changing the face of the Periyar Valley. With an installed capacity for 780 MW (for 'peaking'), Idikki will be the biggest hydro-electric scheme in South India. The 170-metre high arch dam will be the first in India and the highest in Asia. Besides cheap power, the project will irrigate 61,500 hectares of land.

Besides the above, Canada also provided assistance for harnessing the Chambal River which flows through Rajasthan and Madhya Pradesh, in the form of export credits of Rs 5.6 crore and Rs 3.9 crore. These paid for Canadian generating and control equipment for the Rana Pratap Sagar and Jawahar Sagar power houses, which have an installed capacity of 172 and 99 MW respectively, providing power for a whole range of new industries.

Uneven rainfall is a major limitation on Rajasthan's hydel power sources. For this reason India decided to set up its second nuclear power station consisting of two reactors on the shore of Rana Pratap Sagar, near Kota. Canada is supplying the know-how and equipment for the station. The reactors form part of a major venture in Indo-Canadian collaboration which also includes the Canada-India Reactor at the Bhabha Atomic Research Centre, Trombay. The two RAPP reactors, each with an installed capacity of 200 MW, will supply power to industrial and agricultural users throughout Rajasthan and in the northern grid region. The reactors are modelled on the same pattern as the Douglas Point (Ontario) Reactor which provided the training ground for 154 Indians.

Canada has also contributed about Rs 70.2 crore in Counterpart Funds for minor irrigation works like digging of wells, provision of pump-sets, tube wells, small community

diversion and storage projects, drainage, flood control and lift irrigation schemes which taken together will make for widespread improvement in agricultural production.

Farm Production

In the last few years, the coordinated use of modern agricultural techniques and improved crop strains has pushed up the production of foodgrains in India (especially wheat) to about 100 million tonnes and brought nearer the possibility of self-sufficiency in food. Canadian participation in this "Green Revolution" has taken the form of long-range programmes to improve food production with the help of fertilisers, agricultural and food research, plant protection, dairy, bakery and fisheries development and education of the farmer. In terms of money, Canada has provided about Rs 115 crore to various agencies to implement schemes for increased agricultural production.

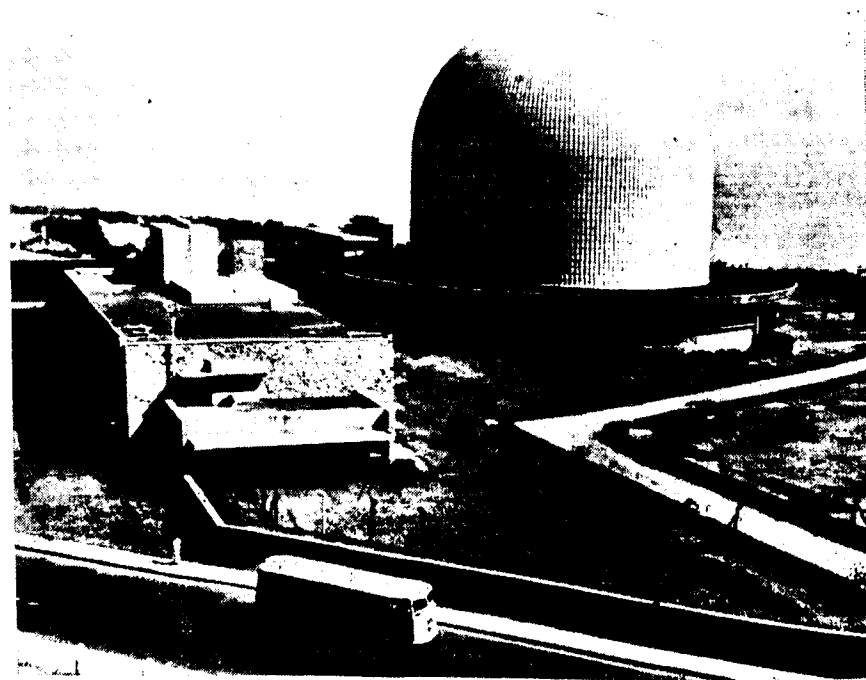
Assured of quality supplies under these schemes, farmers have turned in improved crops of foodgrains, oilseeds, sugarcane, cotton, jute, tobacco, fruits and vegetables.

Since Indian agriculture is primarily rain-fed, Canadian experts are being teamed with the Indian Council of

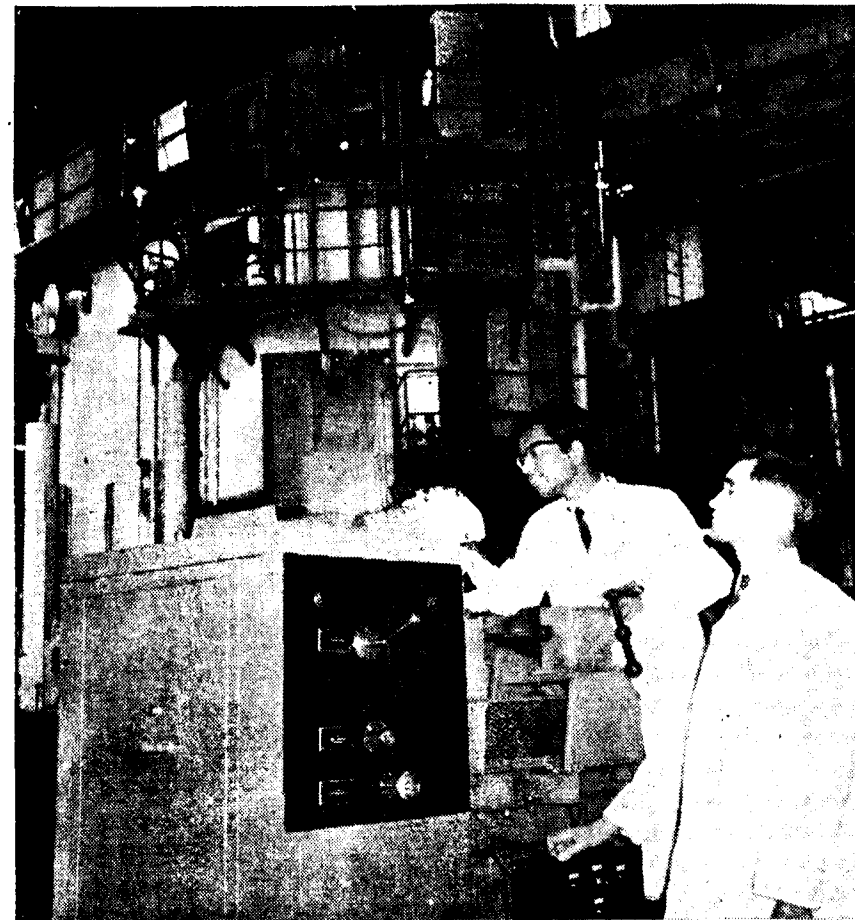
Agricultural Research to develop special crop varieties and techniques for dry farming areas and to devise ways of conservation and efficient use of the available water. The Canadian experts in collaboration with the Central Groundwater Board are also making a groundwater survey of hard rock areas in Andhra Pradesh. The results of the 7,700 sq. km. survey will be applied to other parts of the Deccan Plateau.

Since 1958, Canada has supplied India with Rs 14.1 crore worth of fertilisers on a grant basis and Rs 29.4 crore worth against development loans. Fertilisers provided include urea, potash, diammonium phosphate, ammonium sulphate, muriate of potash, sulphur and NPK.

Though India has huge cattle population the milk production in the country is meagre especially in regard to its needs. In 1968, Canada supplied Rs 10 crore in Counterpart Funds for dairy development and animal husbandry, covering the setting up of milk plants and milk product factories, dairy extension work, cross-breeding of cattle and improvement of fodders, poultry improvement and the establishment of



"CIRUS", the Canada-India reactor at the Bhabha Atomic Research Centre, Trombay.



Mr. A. Sharma (left) of the Health Physics Department of the Bhabha Atomic Research Centre, Trombay, is receiving training at the Health Physics Branch, Chalk River (Ottawa).

hog and sheep breeding farms. Two Canadian advisers helped Indian farmers in acquiring new technology through rural cooperatives, besides advising them on their purchasing, growing and marketing problems.

As a part of the drive to eliminate malnutrition, a public sector enterprise, Modern Bakeries Limited, set up nine bakeries for the production of fortified bread. Canada equipped three of these units located at Kanpur, Hyderabad and Bangalore.

Canada has also supplied laboratory equipment as grant assistance to the International Food Technology Training Centre in Mysore.

Besides helping the country to improve its agricultural production, Canada has provided India with valuable food assistance. Since 1951, it has supplied more than four million tons of agricultural commodities to India chiefly wheat, and almost all of it as grant assistance. Except for four

years in the mid-50s, the food shipments have been a regular feature of Canadian aid, though the quantity has varied according to the size of Indian harvests. Besides tiding over India's food shortages, the Canadian assistance helps the Government to build up buffer stocks and keep the price of grain relatively stable. Over the years, the programme has also saved India large sums in foreign exchange.

Industrial Development

As a major source for the supply of raw materials, Canada has helped keep Indian industry well supplied since 1953. This has also saved India some valuable foreign exchange. Both private and public sector industries have benefited from the inflow of Canadian raw materials. It began with a Rs. 3.4 crore grant for copper and aluminium imports and later included nickel asbestos, newsprint, zinc, lead, wood-pulp, ferrow alloys and synthetic and butyl rubber. Until

1966, these commodities were supplied on a grant basis. However, now most of this assistance has been transferred to the development loan programme.

Canadian metallurgists have made a big contribution to Indian industrial development, especially in the processing of aluminium, zinc and steel. Canada has also provided four broad-gauge diesel hydraulic locomotives and spares to the Bombay plant of the Associated Cement Company.

In 1963, Rs 5.2 crore were allotted out of Counterpart Funds to pay for subsidised industrial housing. More than 10,000 units were built on 24 sites in six States.

Transport

India's transportation system has got quite a huge share of Canadian assistance. Since Independence Indian Railways have been retiring its old locomotives and rolling stock as part of a programme of modernisation. Canada has accelerated the process by supplying more than 200 locomotives. Canada has also provided selected components for the manufacture of diesel locomotives at the Diesel Locomotive Works, Varanasi in addition to 1 million Douglas Fir sleepers supplied under a Rs 3.9 crore grant for track renovation. To cover some local costs of new rail line construction Rs 1.8 crore were committed from Counterpart Funds.

In early 1950s, Canada furnished a grant of Rs 3.1 crore to pay for new buses, trucks and other vehicles for the Bombay State (now Maharashtra) Transport Commission. In 1969, eight snow-blowers were supplied to help keep Himalayan roads open in winter.

In preparation for Air India's acquisition of Boeing 747s, Canada gave Rs 2.1 crore in development loan in 1969 so that the airline could install a digital flight simulator to train its jumbo jet pilots without withdrawing one of the 747s from service. A development loan of Rs 21 lakh was also provided in 1970 for the purchase of Canadian-made seats for Indian Airlines' newly acquired Boeing 737s.

Part of Canada's assistance has gone to help the development of telecommunications and satellite communications in India. Besides providing

the knowhow Canada gave Rs 2.8 crore for the construction of India's first satellite communications station at Arvi, near Poona.

In 1959, Canada also helped India to establish a centre in New Delhi for the exchange of meteorological information in the northern hemisphere and to keep pace with the growing needs of aviation.

India expects to spend Rs 420 crore on improving domestic communications during the Fourth Plan. Canada's contribution is a Rs 28 crore development loan, representing about one-third of the foreign exchange requirement. It will pay for telecommunications equipment for three microwave routes totalling 2,130 kilometres in length and 12,000 kilometres of underground telephone cables. This will allow 600,000 new telephone connections, 30,000 more long distance circuits and a two-thirds increase in long distance calling facilities.

Scientific and Industrial Research

In the field of scientific research, Canada's major contribution is the Canada-India Reactor (CIRUS) at the Bhabha Atomic Research Centre, Trombay. Since it went into operation in 1960, the experimental reactor has been used for the development of nuclear fuels and cooling systems for power reactors, fundamental atomic research, and the production of radioactive isotopes for use in scientific and applied research.

A Canadian export credit of Rs 2.9 crore has also paid for the research wind tunnel near Bangalore, which can test the aircraft models for speed and help in advanced research in aircraft design.

In the field of health, a major part of Canadian contribution came in the form of supply of cobalt beam therapy units for our cancer research and treatment institutions. The cobalt sources were replaced every five years by Canada till the Bhabha Atomic Research Centre began producing them in 1969.

Canadian assistance in the sphere of education ranged from provision of instruction films, projectors, transformers and books to 13 cooperative training centres set up under the Second Five Year Plan to a grant for raw film stock, photographic equip-

ment and materials and the services of a Canadian expert for the Co-operative Film Training Programme in Bombay to prepare audiovisual aids for the cooperative training centre.

In 1961, Canada committed Rs 4.7 crore in Counterpart Funds to build seven regional engineering colleges.

DEFENCE PRODUCTION GOES UP

In 1968-69, seven Defence Production undertakings accounted for a total production of the value of Rs 134 crore, which is more by Rs 45 crore worth of production achieved in 1967-68. Three of them: the Bharat Electronics, the Bharat Earth-movers and the Garden Reach Workshops declared dividends. The foreign exchange earned by these undertakings was over Rs one and a half crore, the bulk of which was earned by the Mazagon Dock alone.

A milestone in defence production was achieved by the Hindustan Aeronautics, which turned out recently the first MIG aircraft built from imported raw materials. The HAL also achieved the completion of the 1000th aircraft over a period of 18 years commencing from 1951. It has now taken up a Rs 4.5 crore project for the manufacture of various types of aircraft, instruments, wheels and brakes, hydraulic equipment and ejection seats which are at present being imported. The range of manufactures by the HAL includes the jet ground-attack fighter HF-24, the supersonic interceptor Mig-21, the jet fighter Gnat aircraft, the trainer HJT-16, the Alouette helicopters and the transport aircraft HS-748.

In the field of electronics, the Bharat Electronics recorded a stepped-up production of Rs 24 crore comprising a wide range of sophisticated equipments like specialised transmitters, receivers, trans-receivers and radars. The BEL is to take up the manufacture of integrated circuits to meet the requirements of futuristic electronic equipment, and a semiconductor development laboratory to develop hybrid micro-circuits.

At the cable factory at Chandigarh, new capacity is being created for the manufacture of specialised cables and wires used in multi-channel communication.

Radar and micro-wave components production will be further augmented with the establishment of a new factory at Ghaziabad.

The third Leander-class frigate is in an advanced stage of production at the Mazagon Dock which has already launched the first two in the same class. The construction of an inshore mine-sweeper has also been completed. Having attained capacity to build various types of ships, the undertaking has improved its capacity for ship repairs of different descriptions. The large variety of ocean going vessels and crafts which the Dock is capable of manufacturing includes destroyers, frigates, passenger ships, passenger-cum-cargo ships, cargo ships, dredgers, tugs, barges, trawlers, launches, floating cranes, floating docks, special-purpose pun- toons and assault boats.

Ordnance Production

The 27 ordnance factories manufacturing a wide range of items for the Services, have touched an annual production figure of Rs 110 crore in value, a three-fold increase over the 1962 production, thus making the country completely self-sufficient in small arms and related ammunition.

Several new factories have been added during the last eight years and a modernisation programme is in full swing in a number of others. The new projects include a rocket propellant and ballistite plant, modernisation of TNT capacity at one of the Kirkee factories and replacement of the old nitrocellulose plant with a modern and sophisticated plant at Aruvankadu.

A modern vehicles factory is being established at Jabalpur to double the present rate of production, and a modern foundry, as its adjunct, to take up the production of grey-iron castings, malleable castings and graphite castings.

At the cable factory at Chandigarh, new capacity is being created for the manufacture of specialised cables and wires used in multi-channel communication.

The Heavy Vehicles Factory at Avadi has successfully increased the indigenous content in the manufacture of Vijayanta tanks, considered the best among medium tanks in the world.

PLANNED DEVELOPMENT AND PUBLIC COOPERATION

D. P. SETHI

THE real success of democratic planning for social and economic development depends on active co-operation and participation of people through all stages of development. This realisation of the significance of people's participation has formed a part of the strategy for development in all developing nations and has been strengthened by experience.

The concept of public cooperation implies organised mutual help through voluntary organisations, cooperation between the people and voluntary organisations and between voluntary organisations and the government. It is a two-way process used by democratic societies to utilize to the maximum extent human resources for increased human welfare.

The First Five Year Plan described public cooperation as the principal force and sanction behind planning. It recognised that a plan, however well conceived, has little chance of success if the people through their own voluntary efforts do not take initiative and give active support. There was hardly any programme in which the role of public cooperation was not seen. The programme of national extension and community projects initiated for all-round development of rural areas depended largely on public cooperation. The specific programmes of public cooperation included in the Plan were labour and social service camps for students, planning forums in universities and colleges, creation of voluntary organisations and the establishment of the Central Social Welfare Board. All these programmes were meant to stimulate people's participation in development. Voluntary organisations were recognised as the most effective channel for enlisting people's participation.

In the First Plan period, a National Advisory Committee on public co-operation was set up under the chairmanship of the Prime Minister and with representatives of leading all-India voluntary organisations to guide

and advise the Government in various aspects of public cooperation. The monetary equivalent of the contributions made by the people in the shape of voluntary labour, cash and kind was roughly estimated to be Rs 20 crore during the First Plan period.

Separate Division

The programmes of public cooperation were further strengthened in the Second Plan and a provision of Rs 5 crore was made for various schemes. The most important step taken was the setting up of a separate Public Co-operation Division in the Planning Commission in 1956 to:

- provide secretariat assistance to the National Advisory Committee on Public Cooperation;

- review the progress of various public cooperation schemes from time to time;

- assist and guide the voluntary organisations in participating in development schemes;

- undertake research studies and pilot projects;

- find out the scope and extent of public cooperation in different plan programmes; and

- evolve methods and techniques of stepping up the same.

An inter-ministerial Committee called the Coordination Committee, was set up to facilitate systematic and integrated action on the part of the State Governments and ministries of the Central Government.

In the Second Plan period, the Community Development Programme expanded considerably in terms of coverage and content, to become the biggest field of public cooperation. The voluntary contribution in the Community Development programme in cash, kind and service were estimated at Rs 100 crore during the

decade 1952-62. The people's contributions in local development works amounted to nearly Rs 15 crore out of a total expenditure of Rs 33 crore. The other important schemes executed through community effort were the mid-day meal and school improvement schemes, adult education, *balwadis*, health insurance schemes, *bhoodan* and *gramdan*. The achievements of public cooperation in the words of Jawaharlal Nehru are "the spirit of the people, the removal of inertia in thought and action, the development of team spirit in national work and the sense of partnership of the people in greater undertakings."

The Third Plan further enriched the content of public cooperation programmes by explaining in more precise and specific terms the sphere of voluntary action. It emphasised the need for research into the dynamics of social change through public co-operation and study of attitudes of various groups towards problems and programmes placed before them and effectiveness of methods and techniques employed for securing co-operation and participation of the people in different programmes. It also urged the need for part-time and whole-time workers engaged in voluntary work at different levels so that they can be effective in maximising people's participation. The provision for programmes of public cooperation was doubled as compared to the Second Plan.

The areas of public cooperation have been expanding since the beginning of planning in our country. In the beginning there was emphasis on mobilising people's participation in the Community Development programme, utilising voluntary labour in rural areas, involving students in projects of public utility, disseminating information on Five-Year Plans through Planning Forums and creating and strengthening voluntary organisations in the field of social welfare. Experiments were made with schemes like local works programme under

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MONEY DEPRECIATION IN FIFTIES AND SIXTIES

A. DUTTA

AN attempt is made here to estimate the changes in the purchasing power of money in India and 56 other selected countries during the fifties and the sixties. The countries are arranged in accordance with the IMF classification, into (a) industrial countries—15, (b) other developed countries—10, and (c) less developed countries—32. For the purposes of finding out the purchasing power of money the reciprocals of the cost-of-living or consumer price indexes of different countries have been used. The consumer price index which is compiled in all these 57 countries reflects, to a large extent, the retail prices in the countries concerned excluding certain transactions of a conspicuous nature. While the data are taken from the International Financial Statistics of the International Monetary Fund for all countries excluding India, those for India are obtained from the publications of the Labour Bureau of the Government of India. The IFS figures of cost-of-living/consumer price indexes are available with 1958 as base upto 1963 and with 1963 as base for the years from 1963 to 1969. For the entire period, therefore, a uniform base with 1963 has been used by applying the suitable conversion factors for each country for the earlier years. It must be noted, however, that the weights do not necessarily correspond to the base period in all the cases. For India, the Working Class Consumer Price (General) Indexes with 1949 as base have been shifted to 1963 for purposes of comparability of data with those of other countries. In this case also, the relevant conversion factors have been used for the earlier years. The average indexes of the value of money for different countries during the fifties and the sixties together with the annual average rates of depreciation in the purchasing power during each of the two decades as also for the entire period is given in a statement separately.

It is interesting to see from the figures given in Table 1 that during the sixties the extent of depreciation in the internal values of currencies as compared with the preceding decade ranged from 14.2 per cent to 35.4 per cent for the industrial countries, from 20.7 per cent to 55.7 per cent for the other developed countries and from 0.8 per cent to 97.2 per cent among the less developed countries.

However, among the less developed regions, the extent of depreciation during the sixties was not sizable in respect of such countries as Guatemala (3.5 per cent), Panama (5 per cent), El Salvador (7.6 per cent), Dominican Republic (8.6 per cent), Iraq (10.2 per cent) and Ceylon (10.6 per cent), whereas the value of money for Malaysia remained surprisingly stable, the depreciation being of the order of less than 1 per cent. In India, the internal purchasing power was reduced by 35.6 per cent during the sixties as compared with the preceding decade. On the other hand, six countries, namely, Argentina, Bolivia, Brazil, Chile, Korea and Uruguay witnessed depreciation of currency ranging from 74 per cent in the case of Korea to 97 per cent in the case of Brazil. These six countries taken together recorded an average depreciation of 91.5 per cent during the sixties as compared with the fifties. The inclusion of these six countries in the world total has artificially inflated the extent of depreciation between the two decades. For while the depreciation in the internal value of the currencies of 57 countries including these six was 40.7 per cent, their exclusion would bring down the decline in the purchasing power to 27.1 per cent during the sixties as compared with the earlier decade.

For the group of industrial countries, the internal value of currency depreciated annually by 3 per cent during the fifties, by 3.3 per cent during the sixties and by 3.2 per cent

during the entire period under review. For the other developed countries, rates of depreciation were slightly higher, around 4.5 per cent. Thus for all the developed countries, comprising 25, the annual average rates of depreciation were a little less than 4 per cent during each decade. This was not so for the less developed countries. In this case, the purchasing power of currency depreciated annually by 3.9 per cent during the fifties and by 9.8 per cent during the sixties with the result that for the entire period the annual depreciation was 6.9 per cent.

There were extreme cases of countries showing an appreciation of the value of their currencies as in respect of Iraq and Syria during the fifties and of countries whose currencies depreciated by over 30 per cent annually as in respect of Bolivia and Korea during the sixties. In India, the annual average depreciation was moderate and ranged from 1.8 per cent during the fifties to 5.4 per cent during the sixties accounting for an annual depreciation of 3.6 per cent for the whole period. But the high rate of depreciation for the group of less developed countries during the sixties was attributable, mainly, as already stated, to the inclusion of the six countries mostly located in Latin America which suffered from a state of acute inflation during the two decades under review. Taken together, as the figures in Table 2 show, they recorded annual depreciation to the extent of 21.4 per cent during the fifties and 22.4 per cent during the sixties accounting for an annual depreciation of 21.9 per cent in their purchasing power for the period as a whole. If these countries are excluded, being extraordinary cases of hyper-inflation, the less developed world—comprising 26 countries—would show an annual depreciation of 2.8 per cent during the fifties (which was lower than that of the industrial or other developed countries), 4.1 per cent during the sixties and 3.5 per cent for the entire period.

TABLE 1 Depreciation of Money

Extent of Depreciation during the sixties over the fifties	Annual average rate of depreciation							
	in fifties		in sixties		entire period			
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Industrial countries (15)	14.2	35.4	1.0	5.8	2.1	5.1	1.7	4.7
Other developed countries (10)	20.7	55.7	0.8	7.5	1.8	9.4	2.3	7.9
Less developed countries (32)	0.8	97.2	(-)-0.5	36.0	0.4	31.1	0.5	23.0

TABLE 2 Indexes of value of money and annual average rates of depreciation 1963=100

	Value of money indexes			Annual average rates of depreciation		
	in fifties	in sixties	in Depreciation	in fifties	in sixties	Entire Period
Industrial countries	124.1	93.9	24.4	3.0	3.3	3.2
Other developed countries	136.8	90.5	33.9	4.9	4.4	4.5
All developed countries (1+2)	128.9	92.4	28.3	3.6	3.8	3.7
Less developed countries	141.8	73.2	48.4	3.9	9.8	6.9
Six less developed countries)	473.9	40.1	91.5	21.4	22.4	21.9
Group (4) minus group (5)	122.2	90.4	26.0	2.8	4.1	3.5
All countries (3+4)	135.9	80.6	40.7	3.8	7.6	5.7
All countries minus six less (7-5) developed countries	125.3	91.4	27.1	3.2	3.9	3.6

*Comprising Argentina, Bolivia, Brazil, Chile, Korea and Uruguay

TABLE 3 Frequency distribution of countries according to annual rates of depreciation of money

	in fifties			in sixties			entire Period		
	Industrial countries	Other developed countries	Less developed countries	Industrial countries	Other developed countries	Less developed countries	Industrial countries	Other developed countries	Less developed countries
Value of money appreciated	..	..	2	..	..	..	..	..	..
Value of money depreciated	..	..	..	..	..	..	..	..	..
Annually : Below 1 per cent	..	1	4	..	..	3	..	..	3
1 to 1.9 per cent	..	..	7	..	1	6	..	..	5
2 to 3.9 per cent	..	6	3	4	13	5	10	6	12
4 to 5.9 per cent	..	5	3	4	2	3	3	2	2
6 to 7.9 per cent	..	..	3	..	..	1	..	2	1
8 to 9.9 per cent	..	..	2	..	1	2	..	..	2
10 to 14.9 per cent	..	..	2	..	..	2	..	..	1
15 to 19.9 per cent	..	..	1	..	..	2	..	..	1
20 to 29.9 per cent	..	..	1	..	..	..	..	..	5
30 per cent and above	..	..	2	..	..	2	..	..	..
Total :	15	10	32	15	10	32	15	10	32

The exclusion of these six countries from the world total would also reduce the annual world depreciation to 3.2 per cent during the fifties, 3.9 per cent during the sixties and 3.6 per cent during the two decades.

Table 3 shows the frequency distribution of 57 countries according to the annual rates of depreciation in purchasing power during each of the two decades and the entire period. As already stated, the less developed countries witnessed an increase in the purchasing power of their currencies during the fifties. All the industrial countries recorded depreciation varying from 1 per cent to 6 per cent while all the other developed countries witnessed depreciation between 2 per cent and 8 per cent during the entire period. More than fifty per cent of the 32 less developed countries covered in this study had depreciation from below 1 per cent to 4 per cent including India during the period under review though the six countries under this group referred to earlier recorded depreciation of their currencies between 8 per cent and 30 per cent or even more.

However, it is clear that there was a further erosion of internal purchasing power in the world during the sixties as compared with the earlier decade. The depreciation in the purchasing power of the Indian rupee was much lower than the average depreciation for the world if we include the six countries referred to above. Excluding these countries the annual average depreciation of money in India was lower than the world average during the fifties, slightly higher during the sixties and exactly the same for the period as a whole.

TO KNOW INDIA
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Statement on depreciation of money in different countries (1963-100)

	Index of value of money			Annual average rates of depreciation		
	in fifties	in sixties	Percent- age	in fifties	in sixties	entire period
<i>A. Industrial countries</i>						
Austria ..	126.6	94.3	25.5	5.6	3.4	4.5
Belgium ..	112.2	93.3	16.8	1.7	2.6	2.1
Canada ..	113.1	94.7	16.3	2.3	2.4	2.4
Denmark ..	134.2	91.0	32.2	3.6	5.0	4.3
France ..	147.9	95.6	35.4	5.8	3.7	4.7
Germany ..	117.5	96.0	18.3	1.0	2.4	1.7
Italy ..	128.2	94.5	26.3	2.4	3.6	3.0
Japan ..	138.1	92.3	33.2	2.7	5.1	3.9
Luxembourg ..	110.7	95.0	14.2	1.9	2.1	2.0
Netherlands ..	125.2	91.5	26.9	3.6	3.8	3.7
Norway ..	129.5	92.9	28.3	4.7	3.4	4.0
Sweden ..	132.1	92.8	29.8	4.1	3.6	3.9
Switzerland ..	117.1	94.3	19.5	1.1	3.1	2.1
United Kingdom ..	127.2	93.8	26.3	4.1	3.3	3.7
United States ..	113.1	95.7	15.4	2.1	2.3	2.2
<i>B. Other developed countries</i>						
Australia ..	123.5	94.3	23.6	6.0	2.3	4.1
Finland ..	142.5	88.7	37.8	3.3	4.7	4.0
Greece ..	128.2	96.2	25.0	6.1	1.8	4.0
Iceland ..	162.6	80.2	50.7	6.4	9.4	7.9
Ireland ..	125.8	91.4	27.3	3.6	3.7	3.7
New Zealand ..	125.8	93.0	26.1	4.7	3.0	3.9
Portugal ..	115.6	91.7	20.7	0.8	3.9	2.3
South Africa ..	120.3	94.6	21.4	3.6	2.1	2.9
Spain ..	159.5	87.0	45.5	5.7	5.4	5.6
Turkey ..	203.3	90.4	55.5	7.5	5.5	6.5
<i>C. Less developed countries</i>						
Argentina ..	74.2	58.3	91.7	19.8	18.8	19.3
Bolivia ..	381.7	86.8	77.3	36.0	5.7	20.9
Brazil ..	1,063.8	30.1	97.2	14.5	31.1	22.8
Ceylon ..	108.1	96.6	10.6	1.2	2.2	1.7
Chile ..	565.0	52.0	90.8	26.7	19.2	23.0
Columbia ..	216.5	82.4	61.9	7.6	9.7	8.6
Costa Rica ..	119.2	98.7	17.2	2.5	2.1	2.3
Dominican Republic ..	112.5	102.7	8.7	0.8	1.2	1.0
Ecuador ..	117.8	94.0	20.2	1.4	3.8	2.6
El Salvador ..	106.5	98.4	7.6	4.1	0.4	2.3
Ghana ..	133.2	82.0	38.4	3.6	6.3	5.0
Guatemala ..	103.5	99.9	3.5	1.8	0.4	1.1
Honduras ..	111.2	94.9	14.7	2.5	2.1	2.3
India ..	125.8	81.0	35.6	1.8	5.4	3.6
Iran ..	152.4	96.6	36.6	3.7	2.5	3.1
Iraq ..	111.6	100.2	10.2	(—) 0.5	2.0	0.7
Israel ..	171.2	92.4	46.0	9.0	4.9	6.9
Korea ..	279.3	72.6	74.0	34.2	11.1	22.7
Malayasia ..	100.4	99.6	0.8	1.9	0.7	1.3
Mexico ..	144.1	94.3	34.6	6.7	2.6	4.6
Morocco ..	138.5	98.9	28.6	4.3	2.6	3.5

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HUMAN RESOURCES AND ECONOMIC GROWTH

SURESH R. CIRVANTE

THE economic development of a country depends, to a considerable extent, not only on the availability of physical capital but also on human capital. Nevertheless, physical capital deficiency, which is conspicuously reflected in the small amount of capital per worker in a developing country, is often singled out as the main factor retarding economic growth.

Capital in the form of steel plants, railways, factories and dams is considered essential for accelerating the growth of an economy. Consequently, it is felt that people in developing countries are condemned to a low rate of economic progress for they generally display a high propensity to consume and spend their meagre savings out of their low incomes in short-term speculative investments rather than productive investment in capital goods.

This view of development which stresses the importance of physical investment is being gradually modified since factors like education, health, management, organisation, administration, research and technology are also recognised as playing a dominant role in economic growth. This has led to the widening of the concept of capital in the capital-output model to include besides physical investment, investment in human resources or 'investment in man.'

Notwithstanding the massive economic aid to various underdeveloped countries, their development has been far below expectations as there was too little investment in human capital as compared to the investment in plants and equipments. On the other hand, the Marshall Aid Plan in Europe was a great success in rebuilding the war shattered economies, thanks to the rich educational capital of the West European nations.

It is obvious that education is a very vital form of investment. It is the recognition of this fact that has led nations like the United States of America, Japan and the Soviet Union to provide educational facilities to their people on a systematic basis and to attain remarkable economic progress. In the several States of the U.S.A. their constitutions have incorporated the right of all children to free elementary education. Japan has given immense importance to education in order to emulate and even excel the industrial progress of the West. The Soviet Union has increased educational facilities at all levels apart from making huge investment in steel and heavy industries and the Scandinavian countries have legislated on universal and compulsory education.

Productive Investment

Education is a highly productive form of investment that will often bring a greater increase in national income than an equal amount invested in railways, dams or other tangible goods. The overwhelming importance given to physical investment has often led to a low priority being given to genuine and radical reforms in the sphere of education.

There is a tremendous wastage in all forms of education in developing countries like India. The situation calls for a judicious use of resources and not merely an increase in the volume of resources. Scarcity of well trained teachers, low quality standards and wrong orientation of schooling result in enormous amount of mis-education. All schooling should be modernised to include technical and scientific subjects and a large number of students should choose technical and professional schools for their advanced education in order to accelerate the process of economic development. It is obvious that an oversupply of generalists has led to the growing number of educated unemployed, especially in India.

The situation calls for a radical change in the entire educational system of developing countries like India. Scarcity of suitable teachers and essential facilities besides resistance on the part of students, parents and even teachers have hampered the progress of vocational and professional education. A dislike for manual work and a desire for securing white-collar jobs have affected the way people approach education. The notion that education provides an escape from manual work should be rooted out.

The entire basis of education must, therefore, be revolutionised and an army of good teachers, well informed, well paid, competent and devoted to their duty must be secured. It is clear that spread of literacy and education on a mass scale can make a signal contribution to economic development.

A country must be sure that its educational investment is adapted to its needs and these needs must be translated into suitable courses and good academic discipline, so that the kind of educational capital most appropriate to the needs is secured at the lowest cost. In this connection, the Government of a country may as well direct the course of education to ensure that there are more economists, doctors and engineers than lawyers, philosophers and historians.

Health and Nutrition

Health is no less important than education and the two cannot be isolated. A child is able to take adequate benefit of schooling provided he enjoys good health and similarly an adult is able to use his knowledge and experience to the extent he is physically fit and alert. Thus efficiency of labour and consequently the quality and volume of output largely depend upon the state of a nation's health.

Serious undernutrition and malnutrition among the masses in India and some other developing countries have led to their ill-health besides bodily and mental weakness, although they spend more than half their income on food. Moreover, they do not have adequate clothing, housing and sanitary facilities to keep them reasonably fit. In these circumstances, rise in consumption of essentials, especially food, can improve their health and productivity and accelerate the development of the economy. To

"The destiny of our beloved land lies not in us, the parents, but in our children" —Mahatma Gandhi



In Rourkela, Durgapur and Bhilai where its steel plants are located Hindustan Steel has set up 79 schools for the workers' children.

On this occasion of Gandhi Centenary, we shall be presenting more than a thousand Gandhi Memorial Awards to those children of our employees who come first in their classes. Also more scholarships are being earmarked for meritorious but needy students, striving to acquire higher education. Additionally it is planned to provide assistance to voluntary efforts in the form of employees educational trusts.

On what was greenfield site or wilderness less than two decades ago, Hindustan Steel today is engaged in two basic pursuits—to produce more steel that will accelerate the country's development, and to create more wealth that will make a strong India.



HINDUSTAN STEEL

raise the productive power and efficiency of the people in developing countries, diets must be improved and the incidence of debilitating diseases reduced. This formidable task can be accomplished by provision of nourishing food, proper medical facilities, provision of safe water supplies, slum clearance, better housing etc.

Apart from the need for substantial investment in human resources and physical capital, there is a crying need for development of entrepreneurial capital to ensure a rapid growth of a developing economy. A variety of obstacles hamper entrepreneurship such as unstable political conditions, restrictive effects of traditions and customs, lack of response to monetary incentives and high risks involved in new enterprises. This situation calls for development of entrepreneurial capital through various pilot projects which may be undertaken by the Government to demonstrate the utility of technical innovations and to train administrators and technical personnel in the skills of applying modern production methods.

Agricultural research and the spread of agricultural extension services can teach modern techniques to the farmer and would yield bigger returns. However, unless land reform is introduced, improved farming methods may have little chance of application. This may require legislative and administrative measures which may hurt vested interests and cause political difficulties. Nevertheless, they can play a significant role in economic growth

to the extent they broaden entrepreneurial horizons and help diffusion of enterprise.

Entrepreneurship

Government can indirectly stimulate entrepreneurship by establishing secure property rights, maintaining economic and political stability, providing the requisite infrastructure of roads and power supply and introducing favourable fiscal and monetary policies. Training of skilled personnel at various levels besides training of Government officials in administrative skills and of businessmen and industrialists in skills of management and organisation can make a valuable contribution in imparting the necessary skills for entrepreneurial activities required for rapid economic growth. Such training can be secured through public administration institutes, management institutes and business schools.

Thus the development of entrepreneurial capital besides physical and human capital can step up the rate of economic growth in developing countries. With the development process becoming cumulative, a large supply of entrepreneurs will be generated. As entrepreneurship contributes to development so will development contribute to entrepreneurship. The concept of capital in the capital output model may well be further widened to include entrepreneurial capital besides physical and human capital to make it more realistic and relevant especially in the context of developing countries.

PUBLIC COOPERATION

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which small projects for construction of village dispensaries, community centres, panchayat-ghars, libraries, roads, culverts, wells and minor irrigation projects made good progress.

agricultural production, village industries, sanitation and hygiene, construction works, welfare of the weaker sections, and women and child welfare and youth programmes.

A review of the latter trends would indicate that from a project-oriented programme, public cooperation has emerged into an approach and a strategy to be used in all areas of planning and development. It is realised that with so much poverty and ignorance in the country there is no limit to the scope of public cooperation and voluntary service in mitigating the hardships of the underprivileged. Accordingly, the emphasis of voluntary service has shifted from welfare, in the restricted sense, to the realisation of broader socio-economic aims. Voluntary organisations are today expected to play a part in creating a climate and conditions favourable for smooth and effective functioning of panchayats and cooperatives, and extend their activities to rural areas for programmes of social education,

The wider aims of public cooperation are today set at creating a sense of oneness and a common outlook by engaging people in simple activities of service to the community, promoting progressive socialisation and cooperative growth as a basis of social and economic order to be created in the country; and creating a desire to work for the good life which all can share. Thus, public cooperation has come to be viewed as a mass movement for social change through people's effort. It is a response to the call of social revolution confronting the country. Perhaps this is the reason for decentralisation of the administrative organisation for promoting public cooperation from the Planning Commission to various Ministries and Departments at the Centre and in the States.

The need for imparting training to leaders of voluntary organisations and conducting research into the problems of public cooperation was recognised from the initial stages. The National Advisory Committee on Public Cooperation, therefore, recommended the setting up of the Central Institute of Research and Training in Public Cooperation which was established in February, 1966.

The main functions of the Institute are to study, strengthen and promote voluntary action through voluntary organisations; to develop ways and means of promoting people's participation in national development plans; and generally to act as a liaison between Government and voluntary organisations by interpreting one to the other. The Institute performs these functions by providing training to voluntary workers and officials, conducting research on subjects related to public cooperation, and publishing suitable literature.

New pilot projects to help

Optimum Use of the Country's Water Potential

FOUR new pilot projects for efficient soil and water management have been launched during the current financial year. The new projects will be located at Kakrapara in Gujarat, Girna in Maharashtra, the Rajasthan canal area and Mananadi Delta in Orissa. These would be in addition to the existing three projects at Bellary in Mysore, Azamgarh in Uttar Pradesh and Patiala in Punjab. Some are proposed to be set up within the next two or three years with the ultimate object of having one such project in each State.

The water and soil management projects are designed to increase the utility of the available water resources as water is the most essential input for Indian agriculture today.

Recent studies have proved that with efficient methods of irrigation, proper levelling of fields and a knowledge of water requirements of crops and cropping patterns, the productivity of a given quantity of water can be increased by 200 per cent. The loss of water caused by unregulated irrigation of paddy, for instance, can be as high as two-third of the quantity applied. The excess is not only a waste of water; it damages the soil when drainage is inadequate and salinity exists. This hazard has already become evident in many States. Again, in the case of Mexican wheats, it has been found that four irrigations applied at critical periods of growth are almost as productive as six or more given at regular intervals. In certain situations where soils are sandy, the lining of field channels or the use of the sprinkler system can bring a saving of 30 per cent of the water. The lining of canals and distributaries is also called for when seepage losses are unduly heavy and water is scarce. The use of even limited quantities of groundwater to grow paddy nurseries in the command areas of Nagarjunasagar Project has permitted the utilisation of surface water for an earlier *rabi* crop and enabled two crops to be grown instead of one.

In view of these advantages of water management, it was decided to set up pilot projects in the States in the Central Sector to introduce better methods of water utilisation and irrigation practices. The first three projects, in Mysore, Uttar Pradesh and Punjab, each covering an area of about 4,700 hectares, were launched in 1968-69 with USAID technical collaboration. It has been successfully demonstrated, under these pilot projects, that a good wheat or groundnut crop can be raised on sand dunes with the aid of sprinklers. The benefits of land-levelling, underground pipelines and lining of irrigation channels have also been established and the farmers are showing enthusiasm to adopt these measures. Under this programme officers and technicians from States are also being trained in the techniques of water management.

These projects are under the supervision of the Water Management Division which was started three years ago under the Union Department of Agriculture. It also examines the water utilisation aspects of the new irrigation projects before they are sanctioned by the Central Water and Power Commission. This Division is manned by irrigation and drainage engineers, irri-

gation agronomists and soil scientists. Technical bulletins and guidelines on various aspects of irrigation and water management are also issued periodically.

Researches have to be undertaken at the State level to identify problems in different areas so that corrective measures may be adopted for the improvement of water management to meet—the local needs. Ultimately each one of the 585 irrigation projects—109 major and 476 medium ones—will have to be subjected to proper water management studies, the responsibility for which will devolve on the States. For this it is proposed to initiate joint Centre-State studies in a few project areas.

Programme for the integrated development of ten selected major command areas has also been centrally sponsored under the Fourth Plan. This programme, aimed at a balanced all-round development of the areas, emphasises the optimum utilisation of available water as the prime necessity. Under this programme, the Central Government provides financial assistance for strengthening infrastructure facilities with regard to rural communications and market complexes.

DEPRECIATION OF MONEY

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Pakistan	119.5	90.1	24.6	1.8	3.5	2.7
Panama	103.1	98.0	5.0	0.1	1.0	0.5
Peru	181.5	78.1	57.0	7.7	9.0	8.3
Philippines	120.3	92.0	23.5	0.5	3.9	2.2
Syria	110.9	94.9	14.4	(—) 0.3	1.8	0.7
Thailand	120.2	95.7	20.4	4.9	1.8	3.3
Tunisia	112.7	91.3	19.0	4.1	2.3	3.2
UAR	100.0	86.0	14.0	0.8	3.2	2.0
Uruguay	432.9	18.3	95.8	10.4	30.1	20.3
Venezuela	108.8	96.4	11.4	1.6	1.0	1.3
Viet Nam	145.1	53.9	62.9	8.3	14.0	11.1

Note :—For India the Working Class Consumer Price Indexes have been used, the source being the Labour Bureau of the Government of India.

Source :— International Financial Statistics (IMF)

PRESS IN INDIA

INDIA is a country of continental proportions : everything here seems to have a Himalayan dimension. We are the most populated democracy with the largest number of illiterates while paradoxically we have the largest number of students on roll. Therefore, little surprise that we also have the largest Press—10,281 to be precise, excluding 2,545 other periodic publications not classified as newspapers. In respect of dailies, India ranks second in the world with 650 of them. The number of languages—52, (11 of them foreign) in which these papers are published also appears to be the largest anywhere. Fifty per cent of these papers are concentrated in Maharashtra, Uttar Pradesh, Delhi and West Bengal. Hindi with 2,508 publications leads not only in the number of papers published but also in the list of fresh arrivals. Both Hindi and English account for two-fifths of all the papers published in the country.

Though there has been nearly 68 per cent rise in the number of papers since Independence, there are 14 newspapers which have clocked a century—seven of them in English, four in Gujarati and one each in Marathi, Tamil and Portuguese. Those halfway to this performance number over 200. "Bombay Samachar", a Gujarati daily from Bombay, founded as a weekly in 1822 and converted into a daily 115 years ago, is the oldest existing newspaper. When it comes to copies sold we probably touch another record figure—but in the reverse direction. The total circulation of these papers is a mere 27 million, one-fourth of it claimed by the daily press. The largest readership—over 50 per cent—belongs to Hindi, English and Tamil papers.

The ownership pattern is also revealing. Sixtyfive chains owning 222 newspapers commanded a circulation of well over six million or more than one-fourth of the total overall circulation. Their hold on the daily press is more eloquent—well over five million

or one-fifth of the total circulation. However, individual ownership was as high as 59.5 per cent. Nineteen political parties owned 84 papers circulating 137,000 copies. Out of 398 official publications, 224 are brought out by the Union Government, more than half of them from the Capital. Foreign missions in India with only 111 publications commanded a circulation as good as 14,18,730.

The legion of correspondents was as large as 3,153 associated with 180 dailies. Over a hundred Indian correspondents are based overseas. The desk has a rather sad bargain with a comparatively lower figure of 2,809 of them working in 287 papers. Another sad feature is that 104 of the 650 dailies were hand-composed as against a restricted number of 'big' dailies using rotary. Yet a commendable breakthrough in technological advance was achieved by the "Hindu" which introduced facsimile method of printing for bringing out its Coimbatore and Bangalore editions. The "Hindu" is also the only Indian daily to have won the World Press Achievement Award given by the American Newspaper Publishers Association. The Capital has its own share of pride in that it is the home of the largest number of papers—1,153.

The subjectwise analysis of the vast expanse of the Fourth Estate is quite rewarding. As against the largest number—3,259 with a circulation over five million—of papers devoted to news and current affairs, those devoted to religion and philosophy number 1,098 approaching two million in circulation. Commerce and industry being the areas of post-Independence expansion, 444 papers in this category enjoying a circulation of 431,000 do not seem to fare well in comparison to the film press which, though 286 strong, commands a circulation of over one and a half million. The more specialised categories obviously have a more modest record: engineering & technology (184 papers circulating 176,000 copies),



IGNORAMAN

Wants to Know

Whether
Office Attendance Registers
should be kept
in Canteens

agriculture and animal husbandry (167 papers selling 347,000 copies), science (106 papers with 161,000 copies sold), transport and communications (99 papers totalling a circulation of 187,000), insurance, banking and cooperation (96 papers accounting for 124,000 copies sold), finance and economics (76 papers selling a total of 96,000 copies), art (41 papers reaching 32,000 households), sports (39 papers with 57,000 copies in circulation) and radio and music (38 papers enjoying a circulation of 159,000 copies). However, law and public administration (206 papers with a circulation of 259,000 copies), labour (204 papers totalling a circulation of 226,000) and education (199 papers with 207,000 circulation) seem to be doing a shade better. Women and children appear to be more tenacious. Women's magazines numbering barely 68 command as big a circulation as 383,000 while children's magazines, numbering 128, outsmart them with a circulation nearly three times as high. With only 29 women on editorial staff in 1969, the educated women in this country have every reason to complain that journalism too is a man's world. A tip for the champions of Women's Lib!

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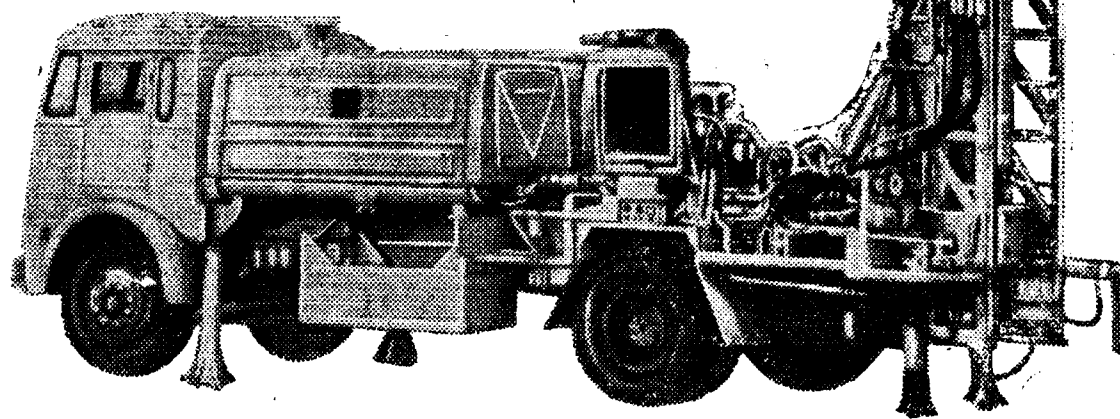
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CONSUMER CREDIT

A PROMISING AREA OF OPERATION FOR NATIONALISED BANKS

V. A. VASUDEVARAJU

CREDIT diversification is one of the main objectives of nationalisation of banks. This is being realised by the expansion of the operational activities of the public sector banks to the 'priority sectors' such as agriculture, small scale industries, road transport, self-employed persons and retail traders. The nationalised banks were advised to so formulate their schemes for diversified small lending as not to create an impression that the affluent classes only are being helped into more 'conspicuous consumption', while many socially and economically productive needs of the poor people remain unsatisfied.

During the last one year the nationalised banks made fresh advances to the priority sectors as follows: Agriculture—Rs 54 crore; Small Industries—Rs 51 crore; Retail Traders—Rs 48 crore; Road Transport Operators—Rs 17 crore. The total advances made to the priority sectors which stood at Rs 202 crore by the end of June 1969 rose to Rs 345 crore by the end of July 1970. The number of the 'constituents' of these banks has also increased considerably during the past one year, contributing to a great extent in 'fostering the banking habit' in the hitherto neglected sectors of the economy.

But the public sector banks, it seems, feel shy of extending their operational activities to an equally important area i.e., Consumer Credit. Of course, one or two banks were already popularising consumer-credit instalment scheme and almost all other public sector banks followed suit soon after nationalisation came. With the initial enthusiasm having disappeared the consumer credit now is more or less a 'forgotten element' with these institutions. As the policy makers are not giving any importance to consumer credit, bank managers have, by and large, developed cold feet to this important aspect of the banks' operations.

Does Consumer Credit deserve this tepid-motherly treatment? It may,

therefore, be pertinent to look at the problem from a different angle. The present policy of making advances only to the priority sectors ignoring the importance of consumer credit is fraught with serious consequences which are likely to effect adversely the very growth and development of the priority sector itself.

Basis of Production

Consumption is not only the end but also the basis of production. Hence the importance of developing an expanding market for the products of the priority sector. Both in rural and urban areas the market for industrial goods is found to be very small at present as a result of low purchasing power. To expand the market for their products in spite of the low purchasing power of the people, some imaginative firms are offering 'incentives' to the buyers. Obviously they do not face any difficulty in marketing their products. Similarly private commercial firms are also doing good business by providing the facility of instalment-purchase-scheme to the consumers. But the 'coverage of consumers' by them is small as they mostly operate in big urban areas and that too under heavy financial limitations. They are also not able to meet the needs of 'consumer preference'. Despite these limitations the success of such firms only points to the fact that there is also a considerable scope for tapping the internal market for the products of the priority sector industries. It would, however, be difficult for them to further marketing of their products if consumption is not suitably supported by bank credit.

There is a good lot of 'pent-up demand' in our country for the new industrial products, which needs to be converted into 'effective demand'. Most consumers, particularly the middle class people, possess a keen desire to consume new industrial products like modern domestic appliances. However, these 'potential consumers'

cannot always afford to make cash purchases. The end result is the poor turn-over of the firms producing these goods.

Inflationary Trends

It may be argued that extension of credit facilities on a large scale to the consumers to buy such products would accentuate inflationary trends and any further 'created demand' for these goods would certainly push up the already high prices. But it is only a lopsided thinking. 'A big margin of profit on small sales' being the present operative policy of most firms, which coupled with the 'time-lag' between production and marketing of the goods and other stringent financial conditions, compels them to fix the prices of their products at higher level. A fall in prices of these new products can, therefore, be confidently hoped for with an increased 'intake' by the market. The industrial firms would then adopt a policy of 'small margin of profit on large sales'. A good example of this trend is already noticed in the case of transistors. There has been a 25 per cent fall in prices of certain varieties of transistors and radios in the past three years. The marked fall in prices of transistors is, by and large, due to increased sales. This trend can very well be achieved in other industries too provided the public sector banks take steps to create and expanded market for new products by providing credit facilities to consumers. Therefore, easily acceptable Consumer-Credit-Instalment-Scheme deserves top priority in the lending operations of the nationalised banks.

This new service by the banks would certainly lead to a great increase in the number of their 'constituents', and foster the banking-habit among the consumers to a great extent, and start paying good dividends to the nationalised banks after a few years. By providing financial assistance to the consumer, banks can also reduce the pressure for credit by the industrial

firms. As days pass on it would become necessary to extend consumer credit facilities for the purchase of agricultural produce such as paddy, dal etc., in order to absorb the increased production in agriculture as a result of the green revolution.

In the absence of consumer credit the whole exercise of 'credit diversification' by the nationalised banks is likely to fail, sooner or later, due to market limitations. It is necessary that the State Bank of India should take a lead by opening 'Consumer Credit Cells' in all its branches. Similar action is also called for on the part of other public sector banks. A healthy competition in this sphere of lending operations will go a long way in increasing the tempo of economic activities in the country.

Banks should not rest content with the assumption that their ultimate responsibility is only to 'create optimum production' in the economy. They should also consider it as an equally important task 'to create optimum consumption' in the country and fill up the void caused by lack of purchasing power. Consumer credit will generate more productive and viable employment. It would impart a 'sense of participation' to the various sections of the community which have so long been outside the pale of banking.

Credit Cells

By creating 'Consumer Credit Cells' and increasing the staff, public sector banks could render a great service to the consumer and the economy. 'Consumer Preference' and 'Consumer's

sovereignty' which are the determining factors of the market mechanism will assert their full force in the economy as a result of the banks' consumer credit service.

If the banks were to be reluctant to expand their lending operations in this area the government should think in terms of creating a 'Consumer Credit Corporation' which would specialise in this line and also provide financial assistance to the private commercial firms operating hire-purchase schemes of consumer goods. It is also desirable to fix the target in respect of consumer credit as it has been done in respect of the priority sectors. This is essential to create an expanding internal market for the increased production.

A TRUSTEE AND COMPANION IN PROGRESS

LIFE INSURANCE IS 'A SUCCESS STORY'

The life insurance industry founded and run by Indians completed one hundred years on December 3 last year. The first Indian Company—the Bombay Mutual—was formed in 1870 to insure Indian lives without any special limitations or disabilities. In 1956, the life insurance industry was nationalised with the establishment of the Life Insurance Corporation. The nationalised life insurance industry has been playing a vital role in the transformation of the country's economy—mopping up savings from the millions for their future welfare and investing it into productive channels.

Pratima Ghosh

while 1.5 lakh agents, in addition, are engaged in bringing the service of insurance to the very door-step of the people.

With the growth and expansion of life insurance, the rural areas have also come to benefit from it. In 1969-70 around 4,61,468 policies, constituting one-third of the total number of policies issued in India were taken out by rural people, the amount assured being Rs 251.76 crore or one-fourth of the total new sums assured within the country. This, however, does not exhaust the immense possibilities of business expansion in rural areas. Rather, in the wake of green revolution and the widespread changes in these areas, more and more people are becoming savings-conscious and as such there is further scope for mobilising rural savings through life insurance.

The LIC's dynamic role in the nation's economy can be assessed from its diversified and multilateral participation in economic development. It has not only mobilised the surplus purchasing power from the pockets of the prodigal consumers and acted as his trustee for his future welfare, bringing in turn a salutary effect on the continuously rising price level, it has also rechannelised the funds into productive investment, thus stimulating the country's economic growth.

During 1969-70, the LIC invested Rs 233.97 crore in private sector industries as wide-ranging as co-operative housing societies, railways, mining, shipping and transport, managing agents, insurance, banks, investment trusts, vegetable oils, food, drink and tobacco, plantations, coal, rubber products, jute, mineral oil, textiles, sugar and breweries, dyes, chemicals and pharmaceuticals, paper and boards, aluminium, electrical goods, cement, iron and steel, electricity, and engineering.

The Corporation is lending a helping hand in building up a suitable infrastructure. Large resources are being earmarked for rural electrification. For this, a massive amount of Rs 133.46 crore was made available to the State Electricity Boards during 1969-70. Thus, LIC is not only protecting life but also bringing light to rural homes. For providing protected water supply and underground drainage, the corporation has granted loans amounting Rs 24.94 crore to the municipal and government water supply schemes during 1969-70. Over 27 per cent of the urban population is covered by the scheme which will later be extended to cover rural areas.

YOUR welfare is my responsibility'—this motto inscribed on the symbol of 'two hands protecting the flame of life' amply sums up the dynamic role played by life insurance in the lives of millions of Indian. At present, the Life Insurance Corporation (L.I.C.) is paying off a thousand claims per day on death or maturity. Against a thousand departures, there are five times more entrants. Since its inception as a nationalised undertaking, the Life Insurance Corporation has paid off Rs 600 crore by way of claims. Its new yearly business within the country has shot up to Rs 1,025.80 crore under 13,96,593 policies as against Rs. 277 crore in 1957.

A glance at the latest report of the LIC reveals that at home and abroad during the year 1969-70, 14,72,529 proposals were received for assurances amounting to Rs 1,090.17 crore and 14,01,254 policies were issued assuring Rs 1,036.08 crore. The corresponding figures for the previous year were 15,23,585 proposals for Rs 980.15 crore and 14,54,298 policies assuring Rs 929.35 crore. The average sum Rs 5,110 in 1965-66 to Rs 7,394 in 1969-70. There was considerable expansion in the number of new offices—from 281 in 1957 to 699 at the end of March, 1970. The number of trained development officers has increased to 7,838 building up a dynamic sales and service machinery,

During the last 14 years, life business in force in India registered a remarkable growth. As against Rs 1,128 crore of business in force in India covering 45.16 lakh policies at the end of 1955 and Rs 2,176 crore under 74.56 lakh policies at the end of 1960, the life business shot up to Rs 6,303 crore covering 139.39 lakh policies in 1969-70. The total income from insurance business went up from Rs 66.48 crore in 1957 to Rs 260.41 crore in 1969-70, while the life insurance fund at the end of at the year stood at Rs 1,611.04 crore at against Rs 1,434.47 crore during the previous year. The profits from the General Insurance Business on the other hand were Rs 290.28 crore in 1969-70 as against Rs 135.30 crore during the previous year.

Table I tells the story of the expansion of the insurance industry in the past 14 years.

In the perspective of the growth of national income during the years of planning, this growth of life insurance industry acquires a wider significance.

Table 2 shows the comparative growth of net national product with growth of life insurance in force.

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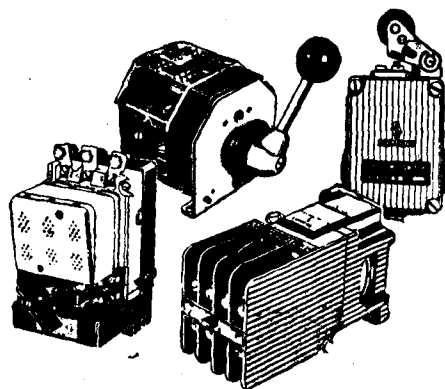


TABLE I—Growth of Life Insurance in India

	(Rs in crore)		
	New Business	Business in force	Total Premium income
1957	277.67	1,374	66.48
1958	339.06	1,584	73.63
1959	419.70	1,855	84.93
1960	487.84	2,176	97.55
1961	598.79	2,623	112.94
1962-63			
(15 months)	734.72	3,051	151.05
1963-64	692.55	3,458	146.73
1964-65	690.03	3,766	162.25
1965-66	789.29	4,282	179.76
1966-67	757.94	4,606	196.98
1967-68	835.40	5,116	213.01
1968-69	920.41	5,606	234.78
1969-70	1,025.80	6,303	260.41

ments were utilised mainly for middle income housing scheme, the rental housing scheme, the villages housing projects, the low income group housing scheme, the plantation labour housing scheme and the land acquisition and development scheme.

Other specific schemes of the LIC for bringing a better life for the millions include the salary savings scheme in industrial areas making insurance premium the first item on the budget of the wage-earners and deductible in easy monthly instalments. The superannuation schemes and the group schemes for industrial houses are also likely to prove quite beneficial.

New Schemes

The LIC plans to extend further the range of its activities. With a view to improving people's health, it proposes to start a pilot scheme of health insurance for the policy-holders on payment of an extra-premium. To begin with, a large hospital is proposed to be set up in Bombay, which would also undertake essential researches in mortality.

Another new scheme is to build model townships all over the country. A beginning in this direction is made with the proposed 4,000-flat LIC centenary township at Borivli near Bombay. During the next three years 50,000 new homes will be built under the 'Own Your home' scheme. In the agricultural sector, the Corporation proposes to finance storages to be built by the agricultural departments.

The Corporation's subscription to the public borrowing programme will be Rs 1,505 crore during the Fourth Plan.

In spite of its vast and diversified participation in different fields of development as 'companion in progress', the Corporation's coverage is still very modest, taking into account the fact that out of a population of 54 crore only over 75 lakhs are insured. This works out a ratio of 1.5 per cent as against over 80 per cent in developed countries.

Appropriately, however, the Corporation has recently decided to remove all extra premia on occupational hazards imposed on the socially weaker sections of the community. Under the new scheme, people engaged in conveyance work or those employed in useful works like tailoring will not be required to pay an extra premium any more.

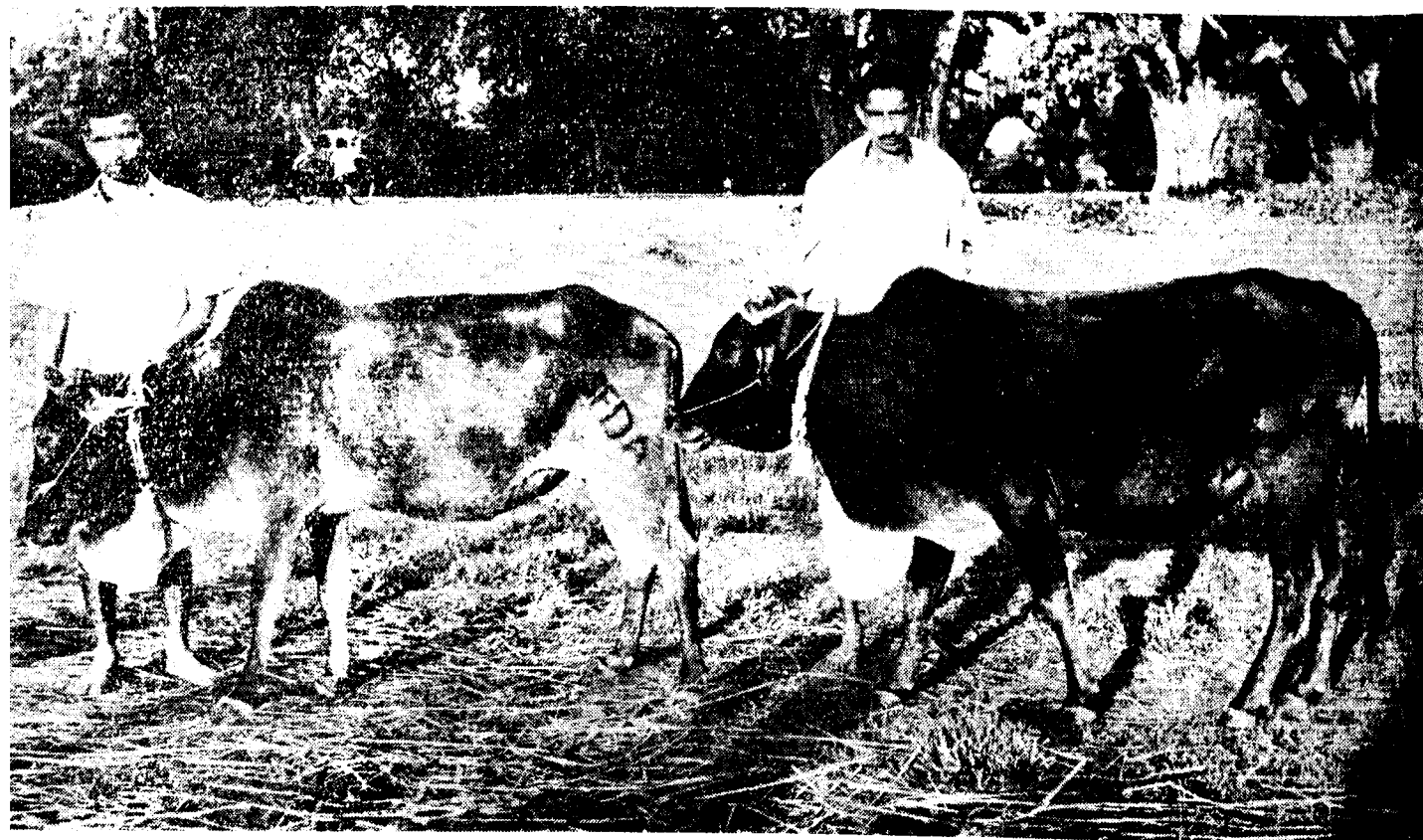
TABLE II

	Rs in crores					
	Net national product current price	Index No.	Life Ins. in force	Index No.	Total Premium Income	Index No.
1950-51	9,530	100	744.7	100	37.7	100
1955-56	9,980	105	1,122.7	151	53	141
1960-61	13,308	140	2,176	292	91.9	244
1965-66	20,586	216	4,282	575	173.6	460
1966-67	23,647	248	4,606	618	189.7	503
1967-68	27,922	293	5,116	687	206.1	547
1968-69	28,061	294	5,606	753	226.7	601
1969-70	30,306	318	6,303	846	252.3	669

Housing

Under its 'Own Your Home' scheme, the LIC is helping millions of people to build their homes. The huge investment in this scheme amounts to over Rs 258 crore. It has also committed Rs 100 crore to different housing boards for their house-building activities during the Fourth plan. In April, this year the scheme for providing houses was further extended to help the people affected by earthquake at Broach in Gujarat, and Kancheepuram in Tamil Nadu.

Institutionwise, the flow of assistance in this field amounting to Rs 63.57 crore during 1969-70, can be accounted for as follows—The biggest chunk of Rs. 59.97 crore goes to cooperative housing finance societies. Loans to State governments for financing co-operative housing come next with a total of Rs 3.29 crore. Thus co-operative housing has received a big fillip with a total financial support from LIC of the order of Rs 63.26 crore. The remaining 30.40 lakh rupees were allotted to the housing boards. The loans advanced to State Govern-



SMALL FARMERS DEVELOPMENT AGENCY

Out of four lakh cultivating families in Purnea in Bihar, a lakh are small farmers, holding between 2.5 to 5 acres of land.

The Small Farmers Development Agency helps such families to maximise output with inputs tailored to their specific needs. The Agency has been operating in Purnea as a pilot project since 1969.

These pictures tell the story of 50,000 small farmer families of Purnea who have been brought under the purview of the Agency.



Subsidiary occupations to fill free time and raise incomes: The Bihar Industries Department provided the loans to buy these buffaloes. Above: Given the input that meets his specific need, the small farmer is as productive as his big brother in agriculture. Medium term loans to buy these bullocks—their primary source of power, came from the District Central Cooperative Bank.

New Schemes for Agricultural Extension and Rural Employment

OVER 50 lakh people in the rural areas are expected to get employment under several programmes most of which have already been initiated and are being extended on a top priority basis.

An outlay of Rs 67.5 crore has been provided in the Central sector of the Fourth Plan for setting up Small Farmers' Development Agencies in forty-six selected districts all over the country. Of these 42 have already been approved. Each of the agency, getting Rs 1.5 crore under the scheme, will generate three to four times



more money from the institutional sources (cooperative and commercial banks). It will identify viable small farmers holding from 2.5 to 7.5 acres, formulate production programmes for them, and help them with adequate and timely inputs. Twentyfive per cent of the assistance on production programmes will be subsidy and 75 per cent in the form of loan.

Marginal Farmers

Under another scheme, Rs 47.5 crore have been provided to set up similar agencies for marginal farmers

The State Bank of India has come to the area, and these farmers come to the Bank for their needs. Below: A small hand-operated tube-well helps the farmer to grow vegetables, to grow into viability and greater independence.



and agricultural labourers in forty selected districts in various States. Generating supplemental occupations through animal husbandry, vegetable growing and similar occupations, the scheme will benefit about 10 lakh families. One third of the production expenditure will be paid as subsidy and the remainder as loan. Of the forty projects, twenty-two have already been approved, covering most of the States and the selection of areas in the rest will be finalised very shortly.

To generate large-scale employment in the chronically drought affected areas of the country a provision of Rs 100 crore has been made for launching rural works programme.

For this purpose labour intensive schemes for irrigation both medium and minor, soil conservation, afforestation and rural communication, will be undertaken in 53 selected villages and will help 25 lakh people. These schemes will be so integrated with

the on-going Plan schemes in these districts as to create long-term infrastructure assets in the areas. The entire expenditure is hundred per cent grant to the States except with regard to soil conservation measures in the fields of private cultivators where 25 per cent is subsidy and 75 per cent is loan, repayable in easy instalments.

Rural Employment

A crash programme for rural employment, similar to the rural works programme, is also being undertaken. Costing Rs 50 crore, it will concentrate on providing roads, drainage and embankment works which can be completed within two working seasons. The programme, entirely subsidised by the Centre, is expected to benefit over four lakh people, providing employment to about a thousand persons in each district.

Another scheme for establishing 5,000 agro-service centres, is being initiated for the mechanisation of

agriculture and for providing employment to engineering graduates and diploma-holders. The Agro-Industries Corporations which have already been set up in every State, will give preference to young engineers in the hire-purchase of mechanised agricultural equipment, reduction in the initial deposit money from the prevalent level of 20 per cent, State assistance in obtaining loans from commercial banks, training facilities and in possible employment as agents of the Corporations in rural areas where they have no workshops at present.

When fully implemented, the scheme will provide employment opportunities for about 50,000 engineers and diploma-holders and, in addition, to an equal number of non-technical persons. Small and medium farmers cultivating about 140 million acres, will also benefit from the scheme which will help them modernise their farming operations and step up their production.

UPHOLDING THE RIGHTS OF MAN

JOSE ROLZ-BENNETT

*Collective Action in 1971 to
Combat Racism and Racial
Discrimination*

WHEN the Conference of San Francisco met in the spring of 1945 to draw up the Charter of the United Nations, there was a strong public demand for broad guarantees of human rights but in fact little effort had been made to reach a common understanding as to the scope of those rights or the means by which their enjoyment might be ensured. Observers from a number of non-governmental organisations convinced governmental representatives of the need to elaborate on the original human rights provisions of the Dumbarton Oaks proposals, urging in particular that the proposed Economic and Social Council should be authorised to consider matters relating to human rights, that a Commission on Human Rights be established, and that at least some minimum agreement on the scope of the rights and freedoms to be protected should be incorporated in the Charter pending the preparation of a full

and adequate International Bill of Rights.

As adopted, the Charter expresses the determination of the peoples of the United Nations "to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small". It sets out, as one of the purposes of the Organisation, "to achieve international cooperation in promoting and encouraging respect for human rights and fundamental freedoms for all without distinction as to race, sex, language or religion". The Charter relates this purpose to the functions and powers of the General Assembly and of the Economic and Social Council, and lists it among the basic objectives of the International Trusteeship System. The Economic and Social Council, empowered to make recommendations for the pur-

pose of promoting respect for, and observance of, human rights and fundamental freedoms, is authorised to "set up commissions in economic and social fields and for the promotion of human rights".

Bill of Human Rights

The Commission on Human Rights, composed originally of experts representing eighteen countries under the Chairmanship of Mrs Eleanor Roosevelt, began its work in January 1947, and immediately plunged into the task of preparing an International Bill of Human Rights. Some members of the Commission felt that the Bill should take the form of a proclamation or manifesto; others favoured an international convention. As a compromise it was decided that the Bill should have three parts: a Declaration proclaiming general principles, a "Covenant or Covenants" embodying those principles in a form which would become binding on States which ratified them, and "measures of implementation" establishing the international machinery necessary to ensure the application of the Covenants.

So effectively did the Commission perform the first part of its task that the General Assembly was able, less than two years later, on December 10, 1948 to adopt and proclaim the Universal Declaration of Human Rights. In this unique document—hailed as one of the most significant accomplishments of the United Nations—the meaning of "human rights and fundamental freedoms" is spelled out in terms which all may accept and understand. More important, the Declaration vests a responsibility for the promotion and protection of those rights and freedoms in the international

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Equal Justice
Equal Opportunity
and Equal Dignity
Without Discrimination



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on 25th anniversary of the United Nations
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community as a whole, and deals with the individual not only as a citizen of a given State but as a human being and also as a citizen of the world.

Since 1948, the Declaration has become "a standard of achievement for all nations and all peoples". The date of its adoption December 10, has been proclaimed as "Human Rights Day" and is celebrated every year around the earth. The national constitutions of many countries, drafted since 1948 have taken their human rights provisions from it.

The preparation of the Covenants on Human Rights was a far more difficult task, as it was necessary not only to define each right and freedom in terms which were *legally precise and universally acceptable*, but also to agree upon some arrangements for dealing, on the international level, with complaints that certain rights or freedoms were not fully recognised of enjoyed in this or that country or territory. The Commission started on this job in 1947, but it was only in 1954 that it was able to submit preliminary texts to the General Assembly and only in 1966 that the Assembly could adopt the Covenants and open them for signature and ratification or accession.

The completion of the Covenants undoubtedly was hastened by the successful preparation and approval, in 1965, of the International Convention on the Elimination of All Forms of Racial Discrimination, to which the General Assembly accorded "absolute priority". The Convention provides *inter alia* for the establishment of the first United Nations body especially set up to deal with allegations that human rights are being violated in independent countries and territories. This body, the Committee on the Elimination of Racial Discrimination, is composed of experts of acknowledged impartiality and is authorised not only to consider reports from States Parties on the legislative, judicial, administrative and other measures which they have adopted and that give effect to the provisions of the Convention, but also to deal with allegations which may be brought by one State Party to the effect that another State Party is not giving effect to the provisions of the Convention. Further, the Committee may, in certain circumstances, and upon special acceptance of one of the Convention's provisions by the State concerned, deal

From the Preamble to the Universal Declaration on Human Rights

... Recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world.

... Disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people.

... It is essential if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law.

with communications received from individuals, or groups of individuals, within the jurisdiction of a State Party, claiming to be victims of a violation by that Party of any of the rights set forth in the Convention. The Convention came into force in 1969, and the Committee on the Elimination of Racial Discrimination began its work early in 1970.

Less than a year after the General Assembly had completed the Racial Discrimination Convention it was able to adopt, and open for signature and ratification, the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, and the Optional Protocol to the Covenant on Civil and Political Rights. The Covenants provide international protection for a far ranging catalogue of human rights and freedoms, and will be legally binding on those countries which ratify them. They will come into force when 35 States have become Parties.

Civil and Political Rights

The International Covenant on Civil and Political Rights contains implementation measures along the lines of those which appear in the International Convention on the Elimination of All Forms of Racial Discrimi-

nation. States Parties to the Covenant will elect an 18 member Human Rights Committee, which will consider reports submitted by the States Parties and may address general comments to those States as well as to the Economic and Social Council. The Committee may also consider communications from State Party alleging that another State Party is not fulfilling its obligations under the Covenant, but only in accordance with optional provisions which will come into force when 10 States Parties have accepted them. The Committee may also consider, under the Optional Protocol, which will also come into force only after acceptance by 10 States Parties, communications from private individuals claiming to be the victims of a violation by a State Party to that Protocol of any of the rights set forth in the Covenant. The reports of the Committee are to be communicated to the States concerned; the Committee will also report to the General Assembly each year.

The adoption of the Covenants and of the Optional Protocol marked the completion of one of the most complex and difficult tasks undertaken by organs of the United Nations in its 25 year history. Its main significance was that the general references to human rights which had been inserted in the Charter, and which had been proclaimed as principles in the Universal Declaration of Human Rights, had at last been made the subject-matter of legally binding obligations in international treaties. The adoption of both Covenants in the General Assembly by a unanimous vote of those participating is a significant element.

This was not, however, by any means the only tangible achievement of the United Nations in the field of human rights in that period of two and one-half decades. The International Bill of Human Rights was supplemented by a whole series of international instruments designed to promote and protect the enjoyment of various rights and freedoms.

Equality of Opportunity

First, the right of peoples and nations to self-determination, clearly affirmed in the Charter, is reaffirmed with vigour in the Declaration on the Granting of Independence to Colonial Countries and Peoples, adopted by the General Assembly in its resolution of December 14, 1960, which empha-

sises the necessity of bringing colonialism in all its forms and manifestations to a speedy and unconditional end in order to ensure to all peoples their inalienable right to complete freedom, to the exercise of their sovereignty, and to the integrity of their national territory; and which sets out a series of measures designed to end the subjection of peoples to alien domination and exploitation.

Secondly, the International Convention on the Elimination of All Forms of Racial Discrimination, referred to above, is now buttressed by a whole series of international instruments designed to ensure recognition and enjoyment, in fact as well as in law, of the principle of equality and non-discrimination. As early as 1951 the General Conference of the International Labour Organisation adopted the first international Convention implementing this principle, Convention Concerning Equal Remuneration for Men and Women Workers for Work of Equal Value. In 1958 the ILO General Conference prepared the Discrimination (Employment and Occupation) Convention, by which States Parties undertake to declare and pursue a national policy designed to promote equality of opportunity and treatment in respect of employment and occupation, with a view to eliminating any discrimination in respect thereof. Two years later the General Conference of UNESCO adopted the Convention Against Discrimination in Education, by which States Parties undertake to formulate, develop and apply a national policy which will tend to promote equality of opportunity and of treatment in the matter of education. The two latter Conventions were adopted following initiatives originating in organs of the United Nations.

Another important instrument in this field, and indeed the forerunner of the International Convention on the Elimination of All Forms of Racial Discrimination, is the United Nations Declaration on the Elimination of All Forms of Racial Discrimination, which the General Assembly of the United Nations adopted unanimously on November 20, 1963. This Declaration, like the Convention which followed two years later, deals with one particular type of discrimination, that based on race, colour or ethnic origin. It characterises such discrimination as

an offence to human dignity, and condemns it as a denial of the principles of the Charter, as a violation of the human rights and fundamental freedoms proclaimed in the Universal Declaration of Human Rights, as an obstacle to friendly and peaceful relations among nations, and as a fact capable of disturbing peace and security among peoples; and solemnly affirms the necessity of speedily eliminating such discrimination throughout the world, in all the forms and manifestations, and of securing understanding of and respect for the dignity of the human person.

Right to Life

With reference to the first and most important of all human rights, the right to life, the General Assembly adopted, on December 9, 1948, the Convention on the Prevention and

Human rights are not granted: they are asserted by individuals who are aware of them.

—Edvard Hambro, President of the U. N. General Assembly.

Punishment of the Crime of Genocide, which established a new crime in International law; the destruction of a human group—national, ethnical, racial or religious—as such, either by killing members of the group, by causing serious bodily or mental harm to them, by deliberately inflicting upon them conditions of life calculated to bring about the physical destruction of the group in whole or in part, by imposing methods intended to prevent births within the group, or by forcibly transferring children of the group to another group. In accordance with the provisions of the Convention, States Parties undertake to prevent and to punish this odious crime.

With reference to freedom from slavery or any other form of servitude, the United Nations in 1953 assumed the duties and functions which had been vested in the League of Nations under the Slavery Convention signed at Geneva on September 25, 1926.

Three years later, in 1956, a Conference of Plenipotentiaries prepared and opened for signature and ratification the Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices similar to Slavery, extending the prohibition of crude slavery and of the slave trade to a number of similar institutions and practices, including debt bondage, serfdom, the purchase or inheritance of women, and the exploitation of young persons or of their labour. Under the Convention, States Parties undertake to cooperate with each other and with the United Nations to bring an end to slavery, the slave trade and all similar institutions and practices.

With regard to a more subtle form of servitude—prostitution and the accompanying evil of traffic in persons for the purpose of prostitution—the United Nations in 1949 consolidated a number of instruments designed to suppress the traffic in women and children, and approved the Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others.

With reference to forced labour, also a form of servitude, in which the Government *de facto* is the master and its citizens the slaves, the General Conference of the International Labour Organisation adopted in 1957 the Abolition of Forced Labour Convention, under which each ratifying State pledges to take effective measures to secure the immediate complete abolition of forced and compulsory labour, and not to make use of any form of forced labour either (a) as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system, (b) as method of mobilising and using labour for purposes of economic development, (c) as means of labour discipline, (d) as a punishment for having participated in strikes, or (e) as means of racial, social national or religious discrimination.

Problems of Nationality

With regard to problems of nationality, statelessness and refugees, the United Nations has completed four international Conventions: the Convention on the Nationality of Married Women, opened for signature and ratification by the General Assembly

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On January 29, 1957; the Convention on the Reduction of Statelessness, adopted on August 30, 1961 by a Conference of Plenipotentiaries convened by the General Assembly; the Convention Relating to the Status of Stateless Persons, adopted on September 28, 1954 by a Conference of Plenipotentiaries convened by the Economic and Social Council; and the Convention relating to the Status of Refugees, adopted on July 28, 1951 by a Conference of Plenipotentiaries convened by the General Assembly. In addition, it has prepared and adopted the Statute establishing the Office of the United Nations High Commissioner for Refugees, adopted by the General Assembly on December 14, 1950. By virtue of this Statute the United Nations High Commissioner for Refugees provides international assistance, under auspices of the United Nations, to specified categories of refugees, and endeavours to find permanent solutions for the problem of refugees.

With regard to the rights of women, several important instruments have been prepared. The Convention on the Political Rights of Women, opened for signature and ratification by the General Assembly in 1952, implements the principle of equality of rights for men and women contained in the Charter by ensuring that women residing in Contracting States are entitled to vote in all elections, are eligible for election to all publicly-elected bodies, and are entitled to hold public office and to exercise all public functions, on equal terms with men, without any discrimination. The Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages opened for signature and ratification by the General Assembly on November 7, 1962, provides for measures with a view to abolishing certain customs, ancient laws and practices relating to marriage and the family which are considered to be inconsistent with the human rights principles set out in the Charter and the Universal Declaration of Human Rights. States Parties undertake to ensure complete freedom in the choice of a spouse, to eliminate completely child marriages and the betrothal of young girls before the age of puberty, to establish appropriate penalties where necessary to end these evils, and to establish a civil or other register in which all marriages will be recorded.

Down with Apartheid

The policies of apartheid, especially in territories still under a colonial regime, grossly offended the conscience of mankind and impair the life of large sections of the human race. They must be eliminated for the benefit of mankind. In the wider perspective of the coming decade, which we have solemnly dedicated to development and disarmament, each of us should be determined to contribute his share to the attainment of the United Nations objectives of peace, justice and progress. For these objectives hold the promise that all human beings may ultimately enjoy all the rights proclaimed in the Universal Declaration of Human Rights.

—U Thant

Other Human Rights Conventions completed by the United Nations or the specialised agencies during the 25 year period include the Convention on the International Rights of Correction, opened for signature by the General Assembly on December 16, 1952; the Convention on the Non-Applicability of Statutory Limitations to War Crimes and Crimes Against Humanity, adopted by the General Assembly on November 26, 1968; the Freedom of Association and Protection of the Right to Organise Convention, adopted by the International Labour Conference on July 9, 1948; the Right to Organise and Collective Bargaining Convention, adopted by the ILO General Conference on July 1, 1949; and the Convention concerning Employment Policy adopted by the ILO General Conference on July 9, 1964.

Rights of the Child

Among the major statements of Principle promulgated during this period were the Declaration on the Rights of the Child, proclaimed by the United Nations General Assembly on November 20, 1959; the Declaration and Understanding Between Peoples, proclaimed by the General Assembly on December 7, 1965; and the Declaration of the Principles of International Cultural Co-operation, proclaimed by the General Conference of UNESCO on December 4, 1966.

Thus it may be seen that the task of building a world-wide system of law and of insuring the protection of human rights and fundamental freedoms—a vast and complicated under-

taking—has progressed rapidly and significantly. But this task is far from being finished, even at the 25 year mark. And—far more important—the monumental job of making a reality of the principles which have been proclaimed by giving full effect to the international agreements which have been concluded is only at its beginning.

The responsibilities concerning the human rights activities of the United Nations have been borne principally by the General Assembly, the Economic and Social Council, the Commission on Human Rights and its Sub-Commission on Prevention of Discrimination and Protection of Minorities, and the Commission on the Status of Women. The endeavours of these organs have received approval from time to time by action taken in the Security Council on matters where human rights were at stake—the situations in South Africa, Southern Rhodesia, and the Portuguese Territories in Africa, for example—and by the continuing activities of the Trusteeship Council, the Special Committee of 24 and the Council for Namibia, which have proposed a number of substantive measures aimed at the promotion of human rights and the elimination of racial discrimination in Non-Self-Governing and Trust Territories.

Denial Persists

By these endeavours, the United Nations in 25 years has succeeded in making peoples everywhere conscious of their human rights and fundamental freedoms. It has encouraged, nationally and internationally, the re-

cognition and protection of those rights and freedoms. It has adopted precise standards in this field, against which domestic legislation and practices can be reviewed and measured. It has established a comprehensive network of international machinery, designed on the one hand to guarantee and ensure the enjoyment of human rights generally, and on the other to implement international agreements for the solution of particular problems.

This progress, while encouraging, is still far from adequate to meet the need. Many practices denying human rights persist and are matters of grave concern to the international community. They are widespread, and the resources available to deal with them are still too limited to the magnitude of the task.

It is understandable, and indeed imperative, that the major efforts of the United Nations and of its affiliated bodies should, at this critical period, be directed mainly against racial discrimination, including and against institutions and practices—such as slavery and other forms of servitude—which deprive men and women of their freedom and destroy their human dignity. This positive drive to achieve the maximum freedom and dignity for each individual is to be emphasised in 1971, which the General Assembly has designated as the International Year to Combat Racism and Racial Discrimination.

But it would not be correct to assume that full recognition and enjoyment of human rights and fundamental freedoms can be attained through international consideration and recommendation alone.

In the final analysis, as Mrs Roosevelt once pointed out, all human rights begin "in small places, close to home—so close and so small that they cannot be seen on any map of the world. Yet they are the world of the individual person; the neighbourhood he lives in the school or college he attends; the factory, farm or office where he works. Such are the places where every man, woman and child seeks equal justice, equal opportunity, equal dignity without discrimination. Unless these rights have meaning here, they have no meaning anywhere. Without concerted citizen action to uphold them close to home, we shall look in vain for progress in the larger world".

Bright Prospects for Tractor Industry

A. K. NANDI

AGRICULTURAL methods are changing at a fast rate in our country. The use of tractors has increased considerably during the past decade—from a mere 3,877 in 1961-62 to about 20,000 in 1969-70. This includes domestic production as well as imports.

The production of tractors in the country began in 1960-61. Earlier the demand, totalling over 4,000 tractors per year, was met through imports. But now the major part of the demand is met through domestic production. There are at present five manufacturers in the private sector producing tractors of various sizes ranging from 25 H.P. to 50 H.P. All these manufacturers have a collaborator each from abroad. This is because the designing and manufacturing of tractors needs specialised knowledge and technical know-how.

A target of 129 million tonnes of foodgrains production has been fixed for 1973-74. This calls for intensive farming with better seeds, fertilisers and increased mechanisation. Agricultural tractors and other machinery and implements have a very important role to play in this process. Therefore the demand for agricultural tractors is on the increase. According to the Planning Commission Group on Agricultural Machinery, the demand for them during the Fourth Plan period will be as follows:—

Year	Demand for Agricultural Tractors in nos.
1969-70	36,000
1970-71	42,000
1971-72	49,000
1972-73	58,000
1973-74	68,000
TOTAL (Fourth Plan)	2,53,000

SOURCE: Handbook of Statistics (IEA-1968-69)

Of the total estimated demand for 68,000 agricultural tractors in 1973-74, 21,000 will be in the range of 12-20 H.P., 38,000 in the range 21-35 H.P. and the remaining 9,000 tractors above 35 H.P.

Tractors form an essential component of mechanisation in agriculture. The future prospects of this industry are quite bright as the demand is increasing at a fast rate. Therefore new capacities have to be created either by having net units or by expanding the existing ones. In order to meet the demand for agricultural tractors below 20 H. P. range, which seem to be more suited to Indian farms, the Government proposes to establish a public sector project at Ramnagar in U.P. for the manufacture of 12,000 tractors annually. For this purpose a sum of Rs 5 crore has been allotted in the Fourth Plan. There is a vast scope for the private sector also in this field. Increased capacities, both in the public and the private sectors, will also lead to the development of more ancillary industries and more employment opportunities to the people.

INDIA WINS SILVER MEDAL IN STAMP EXHIBITION

India has won a silver medal for its Philatelic exhibits in the London International Stamp Exhibition 1970, in September last.

This philatelic expo in which, India participated for the first time, is the largest international stamp exhibition held anywhere.

The Indian exhibits included old collections from the National Philatelic Museum, New Delhi, which included Scinde Dawks' early essays, proofs and lithographs of 1854; East India postage stamps and general issues. A rare sheet of a ten-rupee Indian service stamp on Mahatma Gandhi attracted large crowds.

Growth with Distributive Justice Alone can Lead Society

FROM STATIC STABILITY TO CREATIVE INSTABILITY

S. L. PARMAR

IN a fundamental sense, the central goal of development may be called 'self-development'. Up to a point this would correspond to the concept of self-sustaining growth of self-reliance. But these are essentially economic concepts. Self-reliance means the ability of a country to maintain a desired rate of growth through its own resources. Its savings should suffice to meet its investment needs. A part of such savings is converted into exports to fetch enough foreign exchange to finance current imports and debt obligations. Hence such a condition indicates a freedom from foreign loans or grants.

Self-reliance does not mean self-sufficiency. Trade and investment continue to have significant roles in development. But through them the economy should be helped to acquire sufficient productive power and savings capacity to meet its international obligations. Obviously a high rate of growth in national and *per capita* incomes is essential for achieving the goal of self-reliance.

But self-development does not mean only a high rate of growth. It also implies a more equitable distribution of resources and economic power, and new relationships between social groups, so that development of one does not depend upon or lead to deprivation of the other. A high rate of growth could go with exploitation of the many by the few, as was the experience of today's industrial nations in their predevelopment period. Not only was there a pauperisation of the proletariat within the country—England, France, Germany, even the USA—by a handful of owners of means of production, but there was also an extension of such exploitation to other nations in the form of colonialism. While developing nations have neither the possibility nor the inclination, and certainly not the power to embark on colonialism to sustain their economic progress, they can, and sometimes, do, pursue exploitative policies domestically and have a fair rate of growth. In some erstwhile colonies, it is being said that we have exchanged foreign imperialism for 'domestic imperialism'. A few of these nations have even shown better economic performance than many other developing nations. Clearly, such a situation could not be described as 'self-development'. Social justice reflected in greater equality of opportunity, a more egalitarian social order, a diffusion of economic and political power from the few to the many is the most important element of self-development.

The central goal of development can be interpreted as consisting of three interrelated objectives: economic growth, self-reliance and social justice. It is submitted that primacy should be accorded to social justice not

simply on ethical grounds but in order to ensure a high rate of growth over time and steady progression toward self-reliance. This would be different from the generally prevalent approach in which the rate of growth is singled out as the most important goal of development.

Economic growth, by which is meant a steady rise in the standard of living, is vital for developing countries. Pressure of population, massive poverty, rising expectations, the fact that political consciousness has preceded economic ability to meet aspirations, etc., make rapid economic growth an imperative and the rate of growth itself is more important than the fact of growth.

There are, however, a number of problems with this approach. First, it reduces development to a purely economic phenomenon. Second, it assumes that injection of sufficient resources like capital, technique, and so on will by itself bring about development. This is too much of a *laissez-faire* approach in relation to the situation in developing countries. Resources can give results only if adequate institutions are set up for utilising them. If all this is to be done quickly, it calls for radical structural changes.

Third, it presents a yardstick for measuring development that dooms most developing countries to permanent poverty. According to certain projections, in the year 2000, India—even if it achieves a 5 per cent annual rate of growth—will be poorer in comparison to developed nations than it is today.

Each developing nation is really competing with itself. Its present performance should be an improvement upon its earlier performance. In the process, if it comes nearer to developed nations, well and good, but even if it seems to lag behind, that should not be taken as lack of achievement. We have, therefore, to evolve a concept of development which will give us a sense of equality and dignity even with relative poverty.

Fourth, one finds that in many countries of the third world a satisfactory rate of growth has not contributed to the stability and well-being of the nation. That shows that people are seeking something more than statistical evidences of progress.

As one looks at the contemporary scene in the third world, it seems that political problems have assumed greater importance than the economic. After three five-year plans, India has made only marginal dents in her massive poverty. Unemployment, rising prices, debt obligation, deficits in balance of payments and demographic burdens continue to plague the economy. If con-

certed efforts are necessary to deal with these problems the need for economic planning is greater, not less.

The upheavals witnessed in Pakistan in mid-1969 show that it is in a similar predicament. During the sixties Pakistan had a higher rate of growth than most Asian countries, excepting Taiwan and South Korea. Similarly Nigeria, Kenya, Indonesia, Malaysia, Brazil, to mention a few other developing countries, provide instances of fair rates of growth and instability going together. It is not intended to suggest that lack of social justice is the only cause of upheavals in many developing nations. There are a variety of causes. But if one goes to the root of the matter, it would be seen that many of these struggles even though they take ethnic, tribal, cultural and linguistic forms constitute a part of the quest for equality and human dignity.

The most important component of social justice is a just distribution of the national product, that is, distributive justice. It is often argued that pursuit of welfare and distributive justice will slow down the rate of growth. Welfare measures in the field of health and sanitation have brought down the death rate sharply in most developing countries. Even with a constant or slightly reduced birth rate, population is increasing at a much faster rate than before, necessitating larger demographic investments. A substantial portion of the increased national product is diverted to the maintenance of additions to population and cannot, therefore, be used for productive investment that would accelerate the rate of growth. Welfare almost becomes a brake on development.

This may appear to be so from a narrow point of view. But if we take a nation's long-term interest, as we should, an improvement in the health of the people improves the quality and productivity of human resources. It also subscribes to the tenets of social justice by providing facilities to the lower income group. This is sometimes described as a shift of income from the traditionally saving group to the traditionally non-saving group. As such it slows down the rate of capital formation and consequently the rate of growth. From this, it is argued that policies of distributive justice should be postponed till such time as self-sustaining growth has been achieved. This argument has many flaws.

To begin with it operates with a static concept of saving and non-saving groups. Thus, if investment efforts of the so-called saving groups were really effective the problem of production should have been solved by now, and we should have been in a position to introduce a better distribution of national income. That it is not so shows that the savings efforts of the traditionally saving class are inadequate. This approach also ignores the role of government in mobilising savings through taxation, consumption regulation, public borrowing and deficit financing. In developing countries it is not possible to meet the investment requirements demanded by a high rate of growth through voluntary savings; therefore, forced savings become essential for our economies.

The experience of developed nations provides a helpful parallel at this point. In the early stages of their development, savings were not voluntarily coming forth through the free play of market forces, although this is a cherished myth. Savings were forced from the economy. Some of it was squeezed from the working class and the peasantry in the form of surplus value. One may disagree with the theoretical ramifications of Marx's theory of surplus value, but he was right in showing that the owners of means of production built up their savings by exploiting labour. Forced saving thus became a common feature in the pre-development experience of today's industrial nations, and the present experience of developing nations. But there the similarity ends. Developed nations forced savings from those who had less capacity to save; the policy of distributive justice suggested for developing countries would force savings from those who have greatest ability to save and, in the process, build up the saving potential of the less privileged groups.

Growth Vs Distribution

Two phrases are often heard when the 'growth versus distribution' bogey is raised. One is, 'you cannot distribute poverty' and the other, 'production first then distribution'. If these were valid the primacy of social justice as a goal of development could not be maintained. It sounds plausible to say that poverty cannot be distributed. But a nation can certainly distribute what it has. If that happens to be poverty, one must begin with that.

Such an argument clouds the real issue. It is not poverty which is to be distributed but riches which exist within an overall situation of poverty. The process of welfare and distributive justice takes from those who have more and will continue to have more relative to others even after such deductions.

In most of the developing countries we find islands of affluence surrounded by unrelieved poverty. This is a result of existing patterns of distribution of economic and political power. At the end of three five-year plans economic inequalities have increased in India. A vicious circle of this kind can be broken only by more equitable distribution. Otherwise, even when the few rich continue to grow richer, they can still say: 'you cannot distribute poverty', because the nation as a whole will be poor.

Distributive justice is important from the point of view of efficient use of resources. We all recognise that underfed people cannot work efficiently, hence they are unable to make full contribution to social production but the same holds true for overfed people. Both conditions are unhealthy and weaken productive capacity. The economy as a whole should function more efficiently if the overfed have less and the underfed more and both are restored to health. And yet we have the strange spectacle of economic policies that favour the better-off sections more in the name of 'incentives,' and neglect or even deprive the weaker sections in the name of 'sacrifices necessary for development'.

The slogan 'production first then distribution' is a clever smokescreen for perpetuating social injustice and

power of the possessing classes. If these groups resist redistribution of resources today, does it not stand to reason that when production has increased they will resist redistribution even more? It is also not clear at which level of production we begin to say that now we have enough to start redistributing. As already mentioned, most developing nations will be relatively poorer in comparison to developed nations by the year 2000. It would then be said that we must postpone distributive justice till we have produced enough to narrow the gap between rich and poor countries.

There would, however, be some justification for leaving resources in the control of better-off sections in developing countries, if these groups followed austerity measures to maximise savings and invested resources according to national priorities. But, their behaviour so far has been rather different. Generally they indulge in conspicuous consumption, which is a waste of resources in economies of scarcity. An unfortunate consequence of this is that it distorts consumption in general, and tempts the low-income groups to follow suit. In traditional economies one of the problems is the high propensity for social consumption on ceremonies, festivals and the like. This is evident from the present pattern of consumption in Indian villages. Increased agricultural production and rise in incomes have caused a spurt in wasteful consumption, thus reducing resources for new investments. Theoretically one could make out a case for no ceiling on incomes, provided it was assisting the process of capital formation. If this does not happen in practice, one could still allow high incomes, but ensure savings by imposing curbs on consumption. That would, in effect, become a way of redistributing the real resources of the country.

From the experience of developed nations it is proved that welfare policies contribute to increased production and ensure better balance between different sectors of the economy. Price support policies, agricultural subsidies, unemployment insurance are examples. These illustrate a process of more equitable distribution of resources by taking from those with ability for the sake of those with need. Welfare is not a leakage of national resources but a contributor to productive capacity.

The Disinherited

When we talk of incentives we are usually thinking of special encouragement to the owners of capital, and entrepreneurial and organisational ability. What about landless labourers, small farmers and the working class? They are vital parts of the productive process, but it is seldom that their interests determine incentives. Similarly, we operate with a highly nonegalitarian notion of property. All wealth is created by the cooperation of capital and labour, and property is part of this wealth. But the right of inheritance vests only in the descendants of one partner in production, namely capital, without recognising the right of the other.

The thrust of these arguments is to show that a high rate of growth which alone can lead to self-reliance is dependent on distributive justice. Today, in all parts of the world, not only in developing countries, there is

a revolt of the disinherited. Unless society gives them their due the productive process will be constantly disrupted. Pursuit of policies based on social justice is the only way to overcome the dissatisfaction of the masses and ensure their full support of development programmes. It needs to be pointed out that this view of social justice as the overarching goal of development is different from the 'Welfare State' approach. The concept of social justice is not based on enlightened self-interest of the dominant groups, but on the basic right of all people to equality and human dignity.

It is believed, and rightly, that development will lead to stability and conditions of lasting peace. But many have distorted this idea and interpreted it to mean that only stability can ensure development. By stability they mean an undisturbed continuance of present political, economic and social structures. But it is precisely this kind of stability that is change-resisting, hence, development-denying. Development cannot take place without radical changes in economic and social relationships, and diffusion of political power. Such changes are accompanied by instability, disorder, upheaval. We completely misunderstand the process of development if we equate it with static stability.

One Structural Approach

Thus understood, development is revolution. Revolution means a radical change in the values and structures of society. It is neither a state of perennial anarchy nor necessarily a call to violence. Non-violent revolution is a new phenomenon in human history and I believe that it represents the wave of the future. The objective of revolution is to acquire power in order to establish institutions and policies that will lead to certain social goals. The anti-institutional kind of revolution is as self-contradictory as the stability kind of development. If revolution is for gaining power and using power, how can it operate without organisation and institutions? One can be against this or that kind of 'establishment' but one has to be for some kind of 'establishment.' A purely anti-institutional view of revolution is *laissez-fairist* and reactionary. It assumes that tearing down existing structures will of itself bring about progress. How is this different from the classical idea of the 'invisible hand'?

A revolutionary approach has to be a structuralist approach—first tearing down then building up. It is true that one cannot make an omelette without breaking eggs. But it is equally true that one can break an egg and not necessarily have an omelette. Some other ingredients and a minimum of culinary skill are necessary for converting the egg into a more delicious dish.

Revolution is goal-directed; it is not an end in itself. And development is both an adjunct of and goal of revolution. Where a development versus revolution debate is carried on it is due to a misunderstanding of both. The two should be seen as mutually sustaining. Together they lead society from static stability to creative instability.

(Reprinted extracts from CERES, the F.A.O. Review)

Fourth Plan Eludes Justice with Social Growth

an increase in disparities among the three tiers of workers (the organised and the unorganised, among the employed and the non-employed).

The remedy for this situation is to change the strategy of trade union activity. Instead of demanding a wage-rise, which would be entirely for their own benefit, they should ask for the equivalent benefit in a different form. They might be justified in demanding a higher wage either to compensate for a rise of prices or to ask for a higher share of wages out of the total income of the industry, or to take the benefit of increased productivity. Instead of asking for more wages, they should ask for a lump-sum benefit equivalent to the capitalised value of the contemplated increase in wage payments. The benefits may be given in the form of issue of bonus shares of the concerned enterprise. It is hereby suggested that one-third of these shares may be given over to the trade union of that particular industry for the common benefit of all its members; another one-third to a central trade union. The recurring income that would be accruing to this central organisation may be invested in expanding the trade union movement in unorganised industry and other constructive activities.

Workers' Trust

The remaining one-third of bonus shares may be invested in an organisation, like workers' investment trust, which should be set up under an act of Parliament. The ownership would be a collective one. The trust can be entirely managed by the representatives of workers and its main objective should be to expand investment in all spheres of essential activities. There should be no declaration of dividend. By expanding its investment, it should try to bring out the non-employed population out of the cockpit of poverty, as early as possible. The Government need not levy any direct taxes on this trust, and it may be given priority in the issue of licenses and other facilities.

In course of time, the Trust would gain an increasing share of ownership of wealth and property in the country and would gradually bring about the structure of production in the mixed economy nearer the state called "Propdem," which is short for Property Owning Democracy, describing an

B. SATYANARAYAN

IN India, we have chosen the democratic type of planning in the context of a mixed economy, calling for a compromise between "growth" and "welfare" objectives. Hence, the rate of growth cannot be, *prima facie*, as high as we find in a fully planned economy, such as in the Soviet Union. We have a vast population and equally widespread unemployment. The land-man ratio is very low. The capital equipment as well as its accumulation is low. The technical progress is not very high. A major chunk of the population is either at the subsistence or semi-subsistence wage level. All these factors go against Indian planner's wishes in making the path of economic development a smoother one. It cannot adopt the Russian type of technology or planning techniques wholesale in mechanising either its agricultural processes or industrial activities, insofar as the production of consumer goods is concerned. It has to choose and innovate an altogether different type of techniques. Above all, the general wage level in India is relatively very much lower than it was in Soviet Union. And yet the overall framework of our planning is still based on the Russian model, which is in turn based on the Mahalanobian Growth Model.

All planning should lead to a high standard of living whether in terms of cultural goods or physical comforts or wasteful luxuries. It requires a technological base to produce in required quantities for a large and increasing population at full-employment. Thus, capital accumulation in the key industries which produce mechanised equipment for manufacturing consumption goods is a basic element of the affluent society. To obtain this high degree of capital per man for the future, it is found that a high degree of restraint upon non-essential consumption per man employed is of utmost importance.

The attitude of modern development economists towards the consumption levels is related to the existence of non-employment and disparities among individuals. During the process of development some industries come to possess a highly-organised labour movement while other industries do not have strong trade unions. The degree of organisation is a function of the nature of the industry as regards its concentration in a few places and the easy availability of substitute labour. Whenever the trade union action succeeds in increasing the money wages up to the level of the rise of prices, the further rise of prices decreases the real wage back to the previous level, and the only effect is that one has moved the economy one step higher in the ladder of the wage-price spiral. Further, the effect of these rising prices would be felt by the unorganised section of workers, since the bargaining power of these people would be relatively weak to get necessary redressal. Thus, one finds that the trade union action has little effect upon decreasing the disparity between workers and entrepreneurs in organised industries, but only increases the disparities between the organised and unorganised sections of workers.

All these actions might lead to a rise in the standard of living of the workers in the organised sector, along with the general price rise. Under these circumstances, the real cost of labour to the private as well as public undertakings rises, thereby the surplus for investment tends to get reduced below the level, compared to the one, if the rise in real-wage were not to take place. Thus, the rate of growth of both investment and employment would be slowed down. The particular effect would be mostly felt by an even less-fortunate section of the public than the workers in unorganised industries; namely the non-employed workers whose expectancy to become employed in the near future is reduced by this action. Thus, the base of the labour movement gets shifted from its original purpose of egalitarianism to

**A family you have planned
is a family you can provide for**

Tell me brother, how can you live so well while I can hardly make both ends meet?

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egalitarian society where there will be no differentiation between management class and workers as the firms would be owned by the workers themselves whose wages would more or less be uniform.

Upto this time, India has followed the strategy of manufacturing luxury consumer goods, such as crockery sets, transistors, tape-recorders, cameras, water heaters, pressure cookers, electric ovens, dunlopillo cushions, refrigerators, and air-conditioners in the name of "incentive goods" to a number of classes, like technicians invited from abroad, business-executives and the elite. It is justified on other grounds, like import-substitution, demand being high for these goods, etc. Under these circumstances, there seems to be no escape from the proposition that economic development requires the readiness to refrain from the luxury consumption by which one would be able to effect the transfer of investments from the equipment for manufacturing the luxury consumer goods to the equipment for manufacturing of investment goods. This is what the community as a whole has to achieve, and the burden of achieving it must fall upon that part of the employed population which is above the standard of necessities in their occupations and upon the higher consumption group among the entrepreneurs. If there is a deviation from this policy, the burden shifts to the non-employed and lower-consumption groups.

Since there is no provision in Indian planning for any of the above-mentioned factors, one would be left with no other conclusion than that the twin objectives of "Growth and Social Justice" are not being properly and adequately looked after. Even the Fourth Five Year Plan also makes no specific provision for any of these cherished goals, except in theory.

INDONESIA IMPORTS INDIAN ENGINEERING GOODS

Indonesian imports of Indian engineering goods have steadily increased during the last three years. From 374 million Indonesian rupiahs in 1967-68, the value of imports from India rose to 468 million rupiahs in 1968-69 and to 868 million rupiahs in 1969-70.

Engineering goods constituted 42 per cent of India's total exports to Indonesia during 1969-70.

A NATIONAL STRATEGY FOR RURAL HEALTH

For the first time, the problem of rural health is to be tackled in its widest perspective

A master plan is being evolved to build up a suitable infrastructure in order to provide integrated services for health and medical care, family planning and maternity and child health service for the entire country. This will remove the present imbalance of health services between the urban and rural areas.

Under the plan, primary health centres (PHC) supported by a chain of sub-centres would be set up in rural areas. Each primary health centre would cover 80,000 to 1,00,000 persons while the sub-centres would serve a population of up to 10,000. This complex is proposed to be linked with rural hospitals, having at least 25 beds and three specialist doctors proficient in surgery, obstetrics and gynaecology.

To begin with, the Master Plan would identify areas with over one lakh or more of population but without hospital facilities. There are about 2,200 such areas, inhabited mostly by tribals and other backward sections. These areas will be marked in red on the map. These will be marked in green when the hospitals and other health facilities are provided there.

It is necessary to link the infrastructure of primary health centres with hospitals to which the patient could be referred for treatment. Recognising this need, the Master Plan seeks to provide a minimal structure of static and mobile hospitals where in addition to medical care adequate follow-up services for the acceptors of family planning and their families would be provided. The hospital unit will be so located that one can take a patient to the hospital and return home to attend to other business of life the following morning.

With a doctor-population ratio as low as 1 : 50,000 in some of these rural

areas, which generate nearly 70 per cent of the gross national product of the country, rural health is not only important but urgent. Therefore, a multi-purpose scheme of the mobile training-cum-service hospitals to be run by medical colleges, has been launched. Twentyone such units will be on the move in the next few months. If the experiment succeeds, the scheme will be extended to involve all the 95 medical colleges. During the second phase of the scheme, approximately 3,000 post-graduates available every year will be given in-service training in these mobile units for one or two months by turn. This will incidentally provide specialist consultancy service to areas covered by the primary health centres and dispensaries. This scheme should be able to provide employment to a large number of medical graduates and post-graduates.

There is still a great scope for voluntary effort which must be encouraged to put up miniature hospitals in villages and small towns. It is proposed to extend grants-in-aid to the extent of one-third by the Central Government and one-third by the State Governments so that the voluntary agency has to spend the remaining one-third on expanding these facilities.

In addition to institutional support, health care on a nation-wide scale calls for other field operations like periodically organised State-financed special camps like eye camps, dental camps, and sterilisation camps for the rural people. Some States have already gone ahead with these operations. For this purpose voluntary services of experts can also be obtained.

The health services can only be effective when these are supplemented by educational effort to make people conscious of environmental hygiene so that they can take full and better advantage of facilities created for them.

REPORT FROM YOJANA BHAVAN

Inadequacies of High Yielding Varieties Programme in 1968-69 Rabi Season

Supply of Inputs and Demonstration Need Improvement

THE High Yielding Varieties Programme launched in the agricultural year 1966-67 has paved the way for achieving a breakthrough in food production. Because of the importance of the programme, the Programme Evaluation Organisation, at the instance of the Planning Commission, initiated an appraisal of the programme from the Kharif season of 1967. Continuing this exercise, PEO has completed its study for the Rabi 1968-69. The main observations made by it on the basis of a study carried out in 32 development blocks and 96 sample villages are given here.

Inadequate and untimely irrigation in Rajasthan, stoppage of canal water supply, frequent power failures during the crucial months in Bihar, delayed irrigation in Orissa, and non-adherence to irrigation schedules in Mysore, were some of the problems which affected the cultivation of high-yielding varieties of wheat, paddy and jowar during the Rabi season 1968-69.

The 210-page report suggests that the planning authorities at the State level should devote greater attention to the problems of irrigation, especially advance assessment of availability of irrigation water during the Rabi season, timely intimation to farmers, and assessment of the potential created under the minor irrigation works. The report points out that lack of proper coordination between the agriculture departments, on the one hand, and the irrigation and hydel departments, on the other, has adversely affected agricultural programmes in Uttar Pradesh, Rajasthan and Orissa. It adds: "There seems to be urgent need to lay down proper working arrangements for achieving effective

coordination between such key departments, right from the State level, down to the village."

The report confirms an earlier observation that new varieties of seeds, such as IR-8 and TN-1 paddy and CSH-I and CSH-II jowar, fared much better during Rabi than in the Kharif season.

In Rabi 1968-69, a few new Rabi paddy varieties, namely Jaya, Padma, Hamsa and CR-28-25, had been released for trials in Tamil Nadu, Andhra Pradesh and Orissa. A new jowar variety, Swarna, was also given trial. S-227 and S-308 had become the most popular wheat varieties in all the wheat-growing States practically replacing the pure Mexican varieties introduced earlier.

Research

The Programme Evaluation Organisation's studies have underlined the need to equip agricultural research stations in the country with modern equipments like greenrooms, quality testing instruments, electronic microscopes and computers. At the same time, it is necessary to post technical staff, such as plant pathologists, entomologists, etc., at these stations. There is also the need for accelerating the feedback process from field to the research stations, in the light of experiences gained in cultivation processes under different conditions.

In many areas where the Organisation conducted its study, the soil testing programme was found to be weak and thinly spread out. There was no appreciable increase in the number of soil samples sent for testing, results of sampling received back, and the number of participants reporting for

soil tests. The PEO study calls for more vigorous measures to intensify soil testing programmes to obtain more meaningful results and to help individual farmers.

Demonstrations

According to the PEO report, demonstrations are the most important extension method, even more significant with the prospect of newer varieties of seeds being released in the coming seasons.

The detailed training programmes envisaged at different levels in the initial year of the Programme have become more or less a routine affair. This was also true of training camps held at different levels during the year. The Centrally-sponsored training programme was being initiated and strengthened in some of the Southern States. But no such institutional training was being thought of in most of the other States, especially the wheat-growing States. The Organisation recommends a more systematic and effective training programme.

The Organisation is also of the view that a coordinated and unified effort in mass communication is also necessary. At present, a number of agencies are carrying out a number of audio-visual publicity campaigns according to their own priorities. This effort has, however, to be coordinated at the district and lower levels. Field experience had shown that the existing facilities had not been put to effective use, mainly due to the lack of up-to-date films, cinema projector operators, and other causes. The broadcasts of All India Radio had, however, proved to be a very effective medium.

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PERCOLATION TANKS A BOON TO SCARCITY HIT KUTCH

M. P. DAIYA

For long, the villages in the Kutch district of Gujarat were affected by repeated droughts. Not now. Over 169 percolation tanks, constructed recently in the district have brought smiles to the dry fields. Following is the story of Kokalia, one of the villages, witnessing significant change after owning a percolation tank.

PERCOLATION tanks, constructed as part of scarcity works, have proved to be a boon to the people in Kutch, the border district of Gujarat. The farmers of Kokalia, a hamlet with a population of barely 550 in Mandvi taluka, have testified to the 'immense' benefit they derived as a result of a percolation tank constructed near the village. On being interviewed, Natubha Sangaji Jadeja, Sarpanch of the village, said: "One has only to imagine what joy it was for five villages in the belt of this percolation tank to see crops grow up to their full measure in our fields where not a blade of grass grew for two years. Today, pumps work round the clock in our farms and I am not exaggerating when I say that we shall be earning the maximum possible profit from our produce."

Natubha was almost in tears when he narrated his experience of the past two years of famine in Kutch. "These years were totally dry", he said, "I did not get a single paisa from my 32 hectares of land. Only 50 of my



A progressive farmer of Kokalia, amidst the blooming cornfields. Irrigation by the percolation tanks have brought an end to the sufferings of the peasants like him.

300 goats and sheep and 20 out of 35 cattle survived. The village also lost about 150 of its 400 cattle."

Adhubha Tejpal, a small farmer, owning 8 hectares of cultivable land corroborated this tale of woe. "We even sold our ornaments to salvage our crops," he said, describing how agriculture had become a difficult proposition during this period of trial.

It was a pleasure to see the living monument which human endeavour had constructed in the shape of the percolation tank at Kokalia. A vast sheet of water could be found at a place where even drinking water was hard to get. Water ran almost 6 metre deep in an area of 2.59 square kms. Villagers had done 11.58 metres of earthwork to construct an embankment to prevent rain water running out into the sea which was only 11 km. away. The villagers were so enthusiastic that immediately after the first showers in the area they volunteered free labour to conserve every drop of water that had collected in the tank.

The storage capacity created at the site can provide irrigation three to four times over a minimum of 120 hectares of land. This will benefit about 2,100 maunds of crops which will fetch an income of more than Rs. 35,000 to the villagers.

Kokalia has one of the 169 percolation tanks which have been completed out of a total 197 undertaken as scarcity works in Kutch district. A characteristic feature of such works is that they involve less expenditure, running into a few thousand, as against minor irrigation works costing lakhs of rupees. They help to bring the level of water up in the village wells, enrich the sub-soil layer and help the afforestation process. One percolation tank creates a potential for a minimum of 20 villages in the area under its command.

To Our Contributors

Articles which are not accepted for publication in Yojana will be returned only if they are accompanied by self-addressed stamped envelopes.

Unsolicited articles will not be acknowledged.

Contributors are requested to use only metric system of weights and measures.

LAND TO THE LANDLESS IN GUJARAT

B. N. Tripathi

IN Gujarat with the operation of the law to abolish the interests of intermediaries, as many as nine lakh 'bona fide' tillers have acquired occupancy rights either without an occupancy price or with only nominal occupancy prices. The passing of the Devasthan Tenure Abolition Act, the last in the series of agrarian laws, completes the process of elimination of intermediary interests in the State. Under the provisions of the Land to the Tiller Act more than seven lakh tenants have already become the owners of their land with effect from April 1, 1957.

To plug the loopholes, if any, in implementing the tenancy act, major amendments to the Act were made in 1965 providing extension of time-limit for payment of instalments. Besides, 40,000 farmers who could not, under duress of the landlords, appear before the Agricultural Commission, or had otherwise forfeited their rights by refusing to purchase the land, were

offered another opportunity to make such purchases. Yet another loophole to get the land released from the tenant by entering into a new agreement, under the return of the land to the holders for self-tilling purposes in 1965, was also removed.

To avoid delay in timely payment of the price to the landlords, the Government extended credit facilities to the tenants and saved them from forfeiting their rights.

Owing to this amicable and strict enforcement of land reforms, the 'Land Grab' movement did not gain any support in Gujarat.

The Land Ceiling Act, framed in 1961, was also satisfactorily implemented in the State. Out of 20,250 hectares of cultivable land declared as surplus under the Act, 14,175 hectares were taken by the Government. Of this 72,150 hectares have already been distributed on priority basis among the farmers. The question of the remaining 6,075 hectares of land which could not

be taken possession of due to court injunctions, was likely to be settled by the end of next July.

So far as the problem of Pardi Grass lands was concerned and which drew country-wide attention, landlords themselves came forward and voluntarily gave away more than 32,400 hectares for distribution among landless Adivasis, besides contributing to the fund collected for tilling the land.

The State Government has since 1960 disposed of more than 2.025 lakh hectares of waste land among about 85,000 Adivasis and Harijans in the State. The remaining 60,750 hectares are expected to be disposed of by April next. These wastelands are given without auction to Adivasis, Harijans, and the backward and middle classes at concessional rates. Thus over 30 lakh sq. yards of land have been given to the Adivasis and Harijans at concessional rates for house building purposes.

To solve employment among the landless agriculturists a co-ordinated programme for establishing industries in the heavily populated areas has been initiated. Accordingly, an industrial estate has been set up at Vapi, where the landless Adivasis of Bulsar have been provided with employment.

The Sangham gets Rs one lakh every year from the State Government as grant. This amount is distributed among affiliating libraries according to their classification. Any public library with a stock of 10,000 books and an annual lending of 15,000 titles is eligible for financial assistance up to Rs 1,200. At the other end of the scale, a small library which adds a minimum of 750 books to its collection a year will get Rs 180 from the Sangham.

Nearly 2,500 libraries in Kerala cater to the needs of special groups like neo-literates, women and children. Many of them also have extensions for cultural activities, sports and adult education programmes. The year 1970 was observed as Library Year in the State.

Started in 1945 with only 47 libraries, the Kerala Granthasala Sangham is today India's largest and most popular library movement.

SILVER JUBILEE OF LIBRARY MOVEMENT IN KERALA

KERALA has more than 3,700 public libraries, all affiliated to the Kerala Granthasala Sangham, which celebrates its Silver Jubilee towards the end of December. Nearly six per cent of the literate sections of the people of the State use these libraries. Two thousand of them are housed in their own buildings, big and small. The Sangham has among its affiliates the Kerala University Library as well as the Government Public Library at Trivandrum.

Kerala's population is 207 lakh and nearly 6.2 lakh of these are library members. Libraries under the Sangham have a total collection of 67 lakh books valued at Rs 1.2 crore. These libraries lend nearly 1,50,00,000 books a year. On an average, every village in the State has two libraries. This works out to nearly one public library for every 3,000 of the population. Nearly 75,000 people give

their services free to these libraries on a voluntary basis.

Each of these libraries functions under a freely elected committee, the office-bearers of which are purely honorary. These local libraries are coordinated at the Taluk level by a Library Union, which in turn is governed at the apex by the State level Sangham and its governing body.

Integrated Agricultural Extension In Maharashtra

Avinash Godbole

Our Bombay Correspondent

AFTER 20 years of planned development, it was realised that the small farmer in the State owing less than two hectares of land could not benefit adequately from the numerous development programmes introduced in the agricultural sector. Therefore in May 1965, the State Government put into operation an Integrated Area Development Scheme which was designed to help the small farmer not only financially and technically in increasing his yield but also to secure for him additional employment during the lean period of about 200 days a year. Popularly known as Page Scheme, after the name of Mr V. S. Page, Chairman of the State Legislative Council, who conceived it, the main purpose of the scheme is to make the small landholder family an economically viable unit.

The first pilot project was started in 11 villages in Tasgaon block in Sangli District. Encouraged by its success it was, in April 1968, extended to the entire Tasgaon Panchayat Samiti area. In 1966-67 all the 90 villages in the four blocks of Karad, Sangmeshwar, Pusad and Kaij were brought under the scheme. During 1969-70 six more blocks were added into the periscope of the scheme. The ultimate aim is to extend the scheme to all the 25 districts of the State with the scheme covering one Panchayat Samiti area in each district by the end of the Fourth Plan. The anticipated expenditure is of the order of Rs 25 crore.

The actual implementation of the scheme has now been transferred to Zila Parishads so as to enable them to take active part in regard to their respective districts.

Under the scheme, agricultural programmes like land improvement, and mechanical cultivation with a central service station, joint use of agricultural implements, minor irrigation works, digging and repairing of wells,

intensive cultivation in accordance with package practices and horticulture are taken up in an integrated manner.

The animal husbandry programme includes establishment of small dairy units on loan-cum-subsidy basis with marketing facilities, supply of good breed of buffaloes and cows and necessary veterinary aid. The programme also includes establishment of sheep and goat units and small poultry units on the same basis.

Under the scheme loans are given to farmers who are not able to obtain the same from usual sources under normal schemes. Additional assistance is provided to reinforce the other schemes in operation so as to help the beneficiaries reap maximum benefits from these schemes. Supplementary subsidies are also provided for practically all land development and irrigation schemes so that the quantum of repayment is reduced, making it possible for the small landholders to participate in and get benefits from those schemes. In the case of irrigation programmes, the capital expenditure is fully met from the block funds and the beneficiary is required to pay charges only to cover the expenditure of taking water to his fields.

For setting up dairy units, the quantum of subsidy is one-third, the loan being the remaining two-thirds. For poultry and sheep breeding 50 per cent subsidy and 50 per cent loans are sanctioned. Seeds, fertilisers and horticultural needs are met with 50 per cent subsidy.

Though a quantitative assessment of the benefits obtained by small holders is yet to be made, an idea of its usefulness can be had from the fact that soil conservation works have been undertaken in 10,590 villages with a total expenditure of Rs 22.70 lakh. In all, 110 lift irrigation works have been undertaken so far. 75 poultry units have been established and 5,337 milch cattle have been distributed to the agriculturists.

A programme of digging 313 community wells was undertaken in the scheme area in 1965 and was extended all over the State. The total amount spent on this programme upto 1968 was about Rs one crore. This programme is now restricted to block areas, with Rs 5 lakh allotted for this purpose in 1968-69. On the basis of reports received from all the Panchayat Samiti areas, a total of 260 community wells have been dug so far.

From the preliminary surveys made in the areas covered under this Scheme, some visible improvements in various aspects of agricultural activity can be noticed, as compared with conditions in previous years. Measures such as contour bunding, reclamation of land, tractor ploughing, eradication of weeds, toning up of land are being undertaken by the participants on a larger scale as compared with the non-participants.

In regard to the use of irrigation facilities, it can be observed that the proportion of area irrigated holdings to the cultivated holdings recorded a substantial increase over the previous years as against practically no change in the case of non-participants. In the sphere of intensive cultivation and the use of inputs too, the participants seem to have an edge over the non-participants.

Employment

An Employment Guarantee Scheme was launched in each village of the original five IAD blocks in 1969 to ensure employment to agricultural labour mainly.

The guarantee under this scheme is restricted to provision of only unskilled manual work to all able-bodied residents of the village. Municipal areas have been excluded from the scope of this scheme which is entirely voluntary.

Works like contour bunding, irrigation work, construction of roads, afforestation and development of pastures are undertaken under this scheme. The concerned village panchayat prepares advance plans with estimates of works which can be taken up for providing employment to all unemployed persons in that village.

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M. B. B. S. with MD/MS/M. Sc. with two years' teaching/practical/research experience in the line after acquiring the above qualifications.

(d) For Odontological After-Training, Periodontics

Graduates/Masters from Dental Faculties with two years' teaching/practical/research experience in the line after acquiring the above qualifications.

(e) For International Ship Inspection

B. Sc./Master's degree in Naval Architecture or Master's degree in Mechanical/Marine Engineering with a first class at either Bachelor's or Master's level with two years' teaching/practical/research experience after acquiring the above qualifications.

AGE

International Ship Inspection Course candidates should be between 24 and 30 years of age on 1st September, 1971 and for other Courses between 25 and 40 years of age on 1st September, 1971.

VALUE

(a) Those who are Ph. D. and are accepted for post-doctoral research will be entitled to:—

- (i) Stipend. Kr. 1,500 per month (Rs 1579/- Approx.)
- (ii) Initial Allowance. Kr. 1,000 (Rs 1052/- Approx.)
- (iii) Other Expenses Covered. Social Insurance fees.

(b) Those who hold a Master's degree and are accepted for advanced studies/training will be entitled to :

- (i) Stipend. Kr. 1,350 per month (Rs 1,421/-Approx.)
- (ii) Initial Allowance. Kr. 1,000 (Rs 1,052/-Approx.)
- (iii) Other Expenses Covered. Social Insurance fees.

PASSAGES. For (a) and (b).

Travel expenses by air (Tourist Class) between India and Norway for both ways.

Last date for receipt of complete applications is 28th December, 1970 and last date for supply of applications(blank) is 22nd December, 1970.

For each course a separate application will be required. One application giving order of preference for two or more courses will not be entertained.

For prescribed application forms and other particulars write enclosing an unstamped self-addressed cover (23 cm × 10 cm) for each course to the Ministry of Education and Youth Services, Government of India, Section ES-3, Shastri Bhavan, 5th Floor, 'B' Wing, Room No. 516, Dr. Rajendra Prasad Road, New Delhi-1.

The envelope should be superscribed "NORWEGIAN GOVERNMENT FELLOWSHIPS, 1971-72."

AGRICULTURAL LABOURERS OF AMRELI

THOUGH in recent years, due to the various land reform measures undertaken by the Government, there has been a considerable change in the socio-economic structure of the village, the lot of the agricultural labourers, in general, remains the same. This is the conclusion reached by the Planning Forum of the K. K. Parekh Commerce College, Amreli, Gujarat.

The Forum made a random survey of eight villages in the Amreli taluka of Gujarat. Their findings show that in the past ten years there has hardly been any change in the total working population. However, more agricultural labourers are employed in the cultivation of commercial crops than in the case of non-commercial crops. In fact in the case of the latter, the number of agricultural labourers employed is constantly decreasing.

Though the Government has distributed fallow land to 25 per cent of the labour families, nothing has been done by these families to bring it under profitable cultivation. Perhaps this is due to the lack of capital.

Another striking fact brought out by the Survey is that as the income of the agricultural labourers improves their women folk tend to remain at home. The number of female labourers is thus more in the small income groups.

In the small income group where, the annual income per family ranges from Rs 500 to Rs 1,500, the average per capita income in "Govadaka", an otherwise rich village, was Rs 320 and in 'Vavadi', a poor village it was Rs 220. In the higher income group (Rs 1,500 to Rs 4,000 per annum per family) the average per capita income in a rich village "Vadera" was Rs 448 and in "Keria-Nagas", a poor village, Rs 272.

As regards their mode of expenditure, it was found that nearly two-thirds (70 to 75%) of their expenditure was incurred on food and 10 per cent on clothing. Considering their meagre incomes some of the families were also found to be spending a good amount on tea and cigarettes. Hardly two per cent of them saved anything.

Majority of the families were under debt. The average indebtedness amongst small income families came to Rs 966, and among high income group to Rs 1,313. As regards the purpose of the loan, it was chiefly taken for unproductive purposes. Though agriculture was the chief source of livelihood of the landless labourers, it was insufficient to support them. Majority of them supplemented their income from other sources. Seventy-five per cent of the families kept either cows or buffaloes and sold milk.

The condition of the mud-houses in which these poor labourers live is simply deplorable. Most of the houses are one-room tenements without any kitchen, bathroom or latrine or even proper ventilation facilities. Investment in house construction is hardly about Rs 500 per family.

Family planning programmes have not made much impact on this section as most of them regard children as inevitable. Since their children start earning very early in life, they are not regarded much of a liability.

LETTER

ECONOMICS OF D.A.

I endorse the view expressed in your editorial 'The Economics of D.A.' (Yojana, of November 1), that "instead of feeding the all consuming fire of dearness with lumps of D.A. neutralisations, it would be worthwhile to provide the fixed income groups, especially the lower income brackets, with subsidised transport, housing and food supplies and full coverage for educational expenditure". But this presupposes efficient economic management. The experience of the much-publicised consumers' co-operative stores, started to fight inflation, has not been encouraging.

Two other ideas strike while pondering over this problem of rising prices. The first is to take up the adjustment of basic pay every five years and not on an *ad hoc* basis

everytime a strike is organised. The higher wage bill would necessarily involve the laying off of surplus staff (due to better organisation, management and automation) and stoppage of fresh recruitment as an economy measure. Secondly, the cost of administration should not be permitted to devour the entire public revenue. In Madhya Pradesh, the total wage bill of government employees during 1969-70 was nearly 70 per cent of the revenue from the State's own sources.

A consolidated salary gives a better idea of the actual wage packet than the split-up between basic pay and dearness. At the present rate, a situation will arise—and it did in the case of textile workers—when the D.A. will exceed the basic wage. This tends to obliterate the distinction between a more efficient and a less efficient worker.

The question of Dearness Allowance now deserves a thorough examination in all its implications and a policy for the whole country has to be evolved. Dearness agitation must not be permitted to become a normal feature of the nation's economic life and damage the working of the administration and economy. Such terrible setbacks may hinder the progress of the nation.

Bhopal

P. C. Malhotra



A PIONEER FARMER

KOTIL Sankarankutty Marar, now 60, has been a farmer for 34 years. Marar's farm is in Kannara, a village 16 kilometres north of Trichur in Kerala.

When as a young man he came to Kannara the place was a thick jungle infested with wild animals. So, he faced all the odds of a pioneer. He used to be up at dawn and go into the jungle armed with a bill-hook to clear the wilderness and a big stick to handle the cobras. As he cleared the land and started farming, wild boars and elephants proved to be a menace. He also had to fight malaria. And yet, he succeeded in converting 80 of the 140 hectares of forest into rich farmland.

Marar started cultivating food crops, especially Paddy, his first love.

Besides paddy, he grew 'Nendran' variety of banana, tapioca and a wide range of vegetables.

But as he gathered experience, he found that mixed farming was better suited to Kerala conditions. Now he grows quite a few cash crops like arecanut and coconut along with food crops. Then he has an orchard of mangoes and jackfruit. He has also a fine herd of cattle and has quite recently adopted the deep litter system of keeping poultry. He helped introduce the Key Village Scheme in Kannara. This has helped upgrade the cows and buffaloes in the area.

Marar thinks the success of farming lies in the amount of interest one takes in farming. He does not believe in intermediaries supervising farm

operations. "The difference between profit and loss in farming lies in your readiness to be with the workers or not."

Nearly half the paddy produced in his farm is paid as wages to the labourers. When Kerala was in the grip of acute food shortage, the labourers on his farm always had two square meals a day.

Marar has organised a Young Farmers' Club. The club has been given 50 cents of land where different types of vegetables, which are used for the mid-day meals for the students, are grown.

It is his ambition to upgrade the school into a high-school where children can take up farming as an optional subject.

Marar also intends to continue reclaiming the forest land. He wants to raise a coconut garden and plant choice varieties of mangoes and jackfruit. He intends to build a one-kilometre bund and plant it with arecanuts. His pioneering zeal keeps him going in quest of new opportunities.

—SHUKLA HAZRA

MOBILE SOIL TESTING LABORATORY FOR RAJASTHAN

A mobile soil testing laboratory has been made available to Rajasthan by the Central Government. Equipped with modern testing appliances the laboratory can test 100 samples a day. It also has projection accessories for showing agricultural films.

GROUNDNUT CULTIVATION IN RAJASTHAN

After the introduction of the intensive groundnut cultivation programme in the Rajasthan canal area three years ago, groundnut cultivation has been expanded from 167 hectares to 472 hectares. Another 2,000 hectares are to be brought under groundnut cultivation during the year 1971-72.

BOOKS

Monetary Economics

A Course in Monetary Theory by D. M. Mithani. Published by Somaiya Publications (Pvt.) Ltd., Bombay. Pages 686. Rs 20.

R. C. Saxena

ONCE the process of development sets in, it must strive for an optimal size of the financial structure. This effort, at any moment of time, would, however, depend upon the forces that affect the marginal cost and social benefit curves of finance. Among these forces, some may be those which lie behind the long-term growth of primary securities, money and other indirect financial assets. In any case, the ultimate choice, from amongst the vast range of available techniques of allocating resources for mobilising savings, would depend on the benefits and costs of each technique. In this context, therefore, some countries might concentrate on techniques other than finance because finance may prove to be of a too low-return quality. In other words, it may prove expensive in terms of skilled and educated labour which will have to be deployed for the operation of this technique as compared to the benefits derived from it. On the other hand, with a view to accelerating the growth of capital stock of the country, the technique of employing resources in finance can be a paying proposition to the point up to which its marginal productivity compensates its marginal cost. Additional resources in finance, which may be in the form of additional branches of banks, expansion of middleman activities in security market, expansion of the existing institutions and the quality of services offered etc., can be a paying proposition only if they induce such financial flows which help in earning a net profit for the financial system and the economy as a whole. The incremental financial flows may, however, result in more loans than are really conducive to economic development, e.g. loans for consumption and speculative purposes. In view of the position explained above, the public authorities,

namely the Central Banking Institution, Ministry of Finance, the financial intermediaries like deposit banks, discount companies and other financial institutions pursue some monetary policy for regulating money phenomenon that encompasses the volume and prices of various financial assets and liabilities and the impact of changes in them on the general economic activity.

In view of what has been mentioned above in regard to the techniques of allocation of resources in finance, the book under review provides a wide

Monetisation In Kerala

Monetisation in Kerala by V. R. Pillai and P. G. K. Panikar. Department of Economics, Kerala University, Trivandrum. Pages 176. Rs 20.

S. M. Shah

The study sponsored by the Research Programmes Committee was confined to a sample of 360 households selected from 12 villages at the rate of 4 each from the talukas of Mukundapuram (district Trichur), Perinthannanna (district Palghat) and Badagara (district Kozhikode). From each village 30 households were studied, the survey covering one full year from July 1962 to June 1963.

The average size of holdings was 3.75 acres. Dry land comprised 53.6 per cent and wet land 46.0 per cent. Paddy occupied 44.65 per cent and coconut 40.97 per cent of the total area operated. Intensity of cropping was high. Area leased was as high as 46 per cent. About 31 per cent of the working population was in agriculture, 19 per cent in manufacturing industries and 38 per cent in services, the most dominating sector.

range of information in respect of various problems arising out of different aspects of money. It has been divided into three parts. The first part spells out different theories of money and its role in the regulation of the economy along with the role of the banking system. The second part is devoted to the analysis of Keynesian economics and the third one to the analysis of trade cycles. The book provides valuable and interesting reading not because it offers new solutions to the problems arising from monetary analysis but for having incorporated in it the latest trends and concepts that have helped enriching the science of Monetary Economics. The outstanding feature of the book is that the author develops each topic with so much clarity and ease that macro aspects of the study do not get sacrificed in the process of development of fundamentals. The addition of numerous diagrams further helps to make the book easy of comprehension.

Of all the cultivation expenses, 42 per cent were monetised. Cropwise, the highest level of monetisation was noticed in coconut cultivation where cash expenses comprised 58 per cent, the corresponding proportion in paddy being 39 per cent and for other crops 46 per cent. About 58 per cent of coconut output was sold, 38 per cent of paddy output and 46 per cent of output of other crops. Cash expenses as a proportion of total livestock maintenance cost worked out to 54 per cent for milch cattle, 33 per cent for draught cattle and 16 per cent for poultry. The proportion of milk output sold was more than 60 per cent, the corresponding poultry output sold being 42 per cent.

The proportion of cash expenditure to total consumption expenditure of the sample households worked out to 64 per cent. Occupation-wise the proportion of cash expenditure was highest, namely, 77 per cent, among agricultural labourers and the lowest, 58 per cent among cultivators. Of the gross receipts, 68 per cent were cash and 32 per cent non-cash. In the sample of 60 small industries units studied, the

proportion of cash expenditure was 60 per cent of the total.

Yes, a traditional subsistence agriculture can as well be highly monetised as is revealed in this study. A high level of monetisation should heighten the sensitivity and responsiveness to economic stimuli. Why then the region is poor—the average consumption expenditure per capita was Rs 277? Are investment opportunities low or unrevealed or do resources need to be re-allocated for optimum results? Processing industries need to be organised to make commercial agriculture pay better. Higher production potential levels could be achieved by intensifying the use of modern inputs such as fertilisers, pesticides, improved seeds and instituting a close network of farmers' organisations and rural institutions.

The present study is an analytical work based on empirical research. There are some printing errors which mar the reading. Aply conceived and competently analysed this study may well prove to be a forerunner of similar studies in other States. Data from selected households do not represent statistically the features of Kerala; nevertheless even as a type study of 12 Kerala villages the results are useful both to the research worker and to the policy-maker.

Assimilating our Heritage

Indian Painting by C. Sivaramamurti. Published by the National Book Trust, New Delhi, Rs. 7.

Krishna Chaitanya

Culture does not cling to the soil and the most pitiful victims of the fallacy that it does are those who are always making the bellicose claim that the heritage of the land which had the doubtful distinction of giving birth to them is, or has to be, the greatest in the world. On the other hand, the legacy becomes real only in remembrance and assimilation, afresh by generation. Here what the French call *haute vulgarisation* can play a great role. After an initial phase of ambiguous performance, the National Book Trust has in recent years achieved a splendid breakthrough, especially with

its series: "India—the Land and People." The book under review is a welcome new issue in the series.

Summative presentation, helpful clarity in narration and the elimination of the strain of scholarship in the communication to the reader were the features of Dr Sivaramamurti's book on Indian sculpture brought out some years ago by the Indian Council for Cultural Relations. The same features distinguish the present work too, which can be regarded as an ideal companion volume. The scale and style of the book cannot help implying some limitations. The transition from mural to manuscript illustration, the derivation of the Rajput and Pahari miniatures, their relation to Moghul painting and the latter's modulation on the Persian tradition are issues which have yet to be definitively solved. But one cer-

DEVELOPMENT AND LOCATION OF INDUSTRIES

Indian Industries—Development and Location by Dr. M. R. Chaudhuri. Published by Oxford and I.B.H. Publishing Company. Pages 230. Rs. 16.

A.K. Bhattacharyya

The book in its present edition has been revised and enlarged with the addition of three new chapters. In the preliminary chapters the author has discussed the significance and implications of Indian industrialisation, the associated problems and prospects, the Industrial Policy Resolutions of the Government of India and Planning of industries, the growth of industries over periods of time and the successive Five-Year Plans for industrial development. He has then discussed various factors deciding industrial locations. The determining factor of location of industries are availability of raw materials; of fuel and power; of skill and labour; of machinery and equipment goods; of financial facilities and of markets. The relative importance of these factors will vary according to the nature of industries.

The author has made a thorough and critical analysis of the various types of industries like metallurgical, engineering, chemical and allied, textile, food, cottage and small-scale. He has given the latest facts about the major large-scale industries.

Industrial location and Regional Planning in India has been discussed and the author has tried to assert that steering of basic industries should be made from technical and economic considerations. Areas which have got the best growth potential should be selected and regional dispersal of industries is to be aimed at for salvaging the depressed pockets where unemployment is chronic and persistent. The book presents an appraisal and exposition of the development and location of industries in India.

TO AUTHORS AND PUBLISHERS

Authors and publishers who desire their books to be reviewed in YOJANA are requested to send two copies of each publication to us.

tainly can admit the expediency of sidestepping such vexed questions in a volume the primary object of which is to stimulate the layman's interest in a fine heritage and to encourage him to probe further.

This, the brochure does excellently well. Dr Sivaramamurti's forte is his deep knowledge of the literary sources for reconstructing the history of the tradition of Indian painting and his sections on the painter, the techniques and the tradition, built up of such material, are revealing. The notes on this kind of material and the glossary are thoughtful additions, usually absent in such popular presentations. If the illustrations are not completely satisfying in number, quality and selection, fairness demands that the reader also keeps the low price in mind.

Transport Planning and Area Development

Regional Transport Survey of Mysore State. Published by the National Council of Applied Economic Research, New Delhi. Pages 570. Rs 50.

P. P. Lakshmanan

The Transport Survey of Mysore State forms part of the Tamil Nadu-Mysore-Kerala Regional Transport Survey that the National Council of Applied Economic Research has undertaken with financial assistance from the Research Programme Committee of the Planning Commission. The survey gives a good analytical account of the transport inventory in the State for all modes—rail, road, inland and coastal waterways and air transport. The Council estimates traffic in a base year and makes projections for 1970-71 and 1975-76 on the basis of the anticipated increases in the State's population, production and income, by sectors and by districts.

On the basis of the transport requirements of Mysore State for 1970-71 as visualised by the Council, it recommends investments totalling Rs 111.1 crore. The methodologies followed in traffic projections and the assumptions made have been explained by the Council. All the assumptions made may not hold good today and the recommendations made need to be examined particularly in regard to the phasing of the investments proposed.

This is the first comprehensive transport survey of Mysore State. The survey needs to be repeated periodically. Transport planning is not a one-shot affair but a continuous process. It would be unfortunate if the survey is not repeated for want of funds. A repeat survey is likely to cost much less than one per cent of the total investments required to be made in the State for a plan period which may be five years, ten years or even longer. A long-term transport plan would be meaningful because transport investments are frequently

large and lumpy and have longer life. While a short-term plan is often aimed at maximisation of return on investments already made, a long-term plan can seek to correct the imbalances in transport created by reorganisation of the State and cater to the development of areas with regard to their resource endowments. The Bangalore area in the State has benefited from the establishment of a good transport and communications system during the British regime. Inadequate water supply and distances of raw material supplies may, however, limit industrial expansion of this area, whereas other areas in the State have greater growth potential. Particular mention may be made of the Bhadravati-Davangere-Harihar belt in the State which has all the facilities such as supply of raw materials, power, skilled labour, and efficient and cheap means of transport. This area is likely to over-shadow other areas of the State, and such possibilities tend to be over-looked in this and similar studies attempting to project, on the basis of past trends, future economic development and transport requirements.

PEST CONTROL

Insect Pests of Crops by S. Pradhan. Published by National Book Trust, New Delhi. Pages 208. Rs 7.50.

K. M. Singh

The book under review has been brought out in the series 'India—The Land and People'. All the thirteen chapters of the book are written commodity-wise covering the bionomics and control of the various pests. Although this book contains just over two hundred pages, all the sixty-two pests have been described very well. The plates well illustrate the life-histories of the pests and the damage they cause to materials.

The crop-wise description of pests gives an over-all idea of the pest menace to a particular crop and will provide a rational approach to pest control in order to avoid economic injury to the crops caused by a particular pest or group of pests.

The novelty of this book lies in the integrated approach to pest control suggested by the author at the end of each chapter. These ideas appear to be quite original and will help the reorientation of the modern entomological research. Dr Pradhan is an eminent authority on entomology, having devoted a life-time to the study of insect pests. The language used by him is simple and the layman and non-specialist can very well understand the philosophy of agricultural entomology.

As such the book will help the agriculturists in his crop protection operations.

HYV PROGRAMME

from Page 47

Seed processing centres have been started in many States, but there is considerable scope to expand them. Generally, seed supplies were adequate and timely and no shortages were reported from any of the areas under study. The bulk of the requirements of paddy and wheat seeds was met through natural spread. But, the quantity of treated seed supplied through this means was very small as compared to supplies arranged from departmental and cooperative sources. The PEO report calls for urgent attention to this aspect of the matter. It feels that the use of 'untreated' seed, specially for paddy, is likely to increase the vulnerability of the new varieties to severe pest attack.

Though supplies of chemical fertilisers were adequate, and in some cases in excess of requirements, there were problems of distribution. These related to non-availability of preferred varieties, part-time functioning of depots in some States and inadequate storage capacity. The most important reason for the poor offtake of chemical fertilisers was the unwillingness of farmers to use fertilisers in recommended doses.

While there is no shortage of cooperative credit, the extension of such credit is affected by defaulting members, defunct societies and procedural delays. The State Bank of India has launched farm finance schemes on a pilot basis in some of the selected districts of U.P. and Tamil Nadu. But, by and large, commercial banks in other States have yet to make headway in this field.

SHEEP DEVELOPMENT PROGRAMME

Progress at Hissar Farm

THE pace of work at the Central Sheep Farm at Hissar in Haryana is proceeding satisfactorily, rather ahead of schedule in certain aspects. The Hissar Farm is meant for pure-breeding of Australian Corriedales. When fully developed, it will have 16,000 sheep, yielding 2,500 rams every year for cross-breeding. The farm will introduce modernised sheep-breeding which will include land development and irrigation facilities for pasture and cereal feed for animals; and training of personnel in new extension work in the adjoining areas.

The farm land covers 2,828 hectares of which 808 hectares have already been completely fenced as per Australian pattern in a record time of 2½ months, ruling out any intrusion by stray or migratory cattle. The threat of soil erosion has also been stemmed.

It has at present 1,030 sheep. The next consignment from Australia is expected in November 1971.

Equipment for land development has been received from Australia and the Government of India has provided indigenously available machinery like jeeps and tractors.

According to the schedule, 161.6 hectares were to have been brought under irrigated crops in 1970-71 and a further 202 hectares prepared for cultivation in 1971-72. The work has progressed ahead of schedule and 191.9 hectares have already been prepared for cultivation during the next season. About some 121.2 hectares have been brought under gram and 50.5 hectares under oats, and the crops hold promise of a good harvest by March/April when the grain silos will be ready for storage.

The seven-year project in Hissar was started consequent upon an exchange of letters on May 29, 1969 between the Governments of India and Australia, agreeing to the establishment of a Centrally administered sheep breeding farm with the assistance of the Australian Government under the Colombo Plan.

The average annual wool production of Indian sheep is about 0.9 kilogram as against 5 kgs in some of the important sheep-raising countries such as Australia and the USSR. Whereas good quality sheep bred in these countries yields from 18 to 25 kilograms of meat within four months, in India double-purpose sheep hardly yield 12 to 17 kg of meat after about a year. The remedy to the situation lay in cross-breeding with which both the wool and meat yield can be stepped up. But in view of the prohibitive landed cost of a good quality foreign sheep, it has been decided to lay emphasis on pure-breeding of available foreign stock for multiplication. The progeny of subsequent generations can then be used for an extensive cross-breeding programme. While the Hissar Farm will be devoted to the breeding of Australian breed, the other two Central Sheep Farms in Gujarat and Jammu & Kashmir will be meant for the pure-breeding of Russian Merinos.

MANAGING AGENTS *from Page 4*

the right to receive a dividend, in the event of a divisible profit available for the purpose. The interest payments should be treated as expenditure. It may be argued that there are other ways to ensure minimum return from investment,—debentures, preference shares and the like. But the advantage of the proposal is that the shareholder would be entitled to share in the fortunes of the company, in addition to the interest. He thus becomes part owner and part lender. This, in effect, is recognition of the fact that a shareholder is, under the present altered conditions, a passive agent who merely expects a fair return for his investment. The fuller recognition of this fact would also strengthen the capital market.

Another myth is the election of directors by the shareholders. The fact is that directors either elect themselves or are nominated by the Government. The management of industrial companies in the private sector, no less than the public sector, should be considered as a public responsibility. Board of Directors should be appointed not by, but on behalf of the shareholders by the company. When thus appointed they will function with a greater sense of responsibility and with more effective control over the Managing Director.

The best system of management would be to have an internal Board of Directors, consisting completely of

heads of departments of the industrial unit. There should be a financial director, a technical director, a marketing director and a general director who can be designated Chairman or Managing Director. Directors should also be appointed by the LIC and the Unit Trust, who might supervise the work of the Managing Director. If, however, it is felt necessary to have an outside element in the Board of Directors, it would be desirable to constitute a Board composed of internal directors and two or three supervisors from outside the company. This system is bound to bring better results than the present board system of management. What we need is a whole-time board of directors with just two or three nominated directors to bring the larger social and governmental elements into the functioning of management. The supervisors and the outside members would be appointed on the strength of their past experience and knowledge.

In conclusion, the supreme fact to be recognised is that industry, whether of the public sector or of the private, is a social responsibility. A private enterprise may differ from its brother in the public sector in that its affairs are not accounted directly to Parliament through the machinery of the Estimates Committee. For the rest, both have responsibilities to the Government, to labour and to the community at large.

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ENGINEERING NOTES

GRAVITATION MOTOR

Mr K. K. Paul Choudhury, an instructor at the Gauhati Cottage Industries Training Institute, spent about one and a half decade to develop a machine, which, he claims, will minimise the cost of generating power in the industries and save the labour.

The contrivance is based on the theory that a wheel moving over a circular plane under the force of gravitation will continue moving without stop, provided the circular plane also moves in opposite direction at the same speed relentlessly.

While developing this theory, it was found that the weight load on level pivoted on the circumferential point of a circular plane—with the fulcrum point of the lever resting and moving over a stationary circular base—drives the lever through one quarter of a revolution, pushing the circular balance upward at an angle of 45 degrees. Since the wheel can be moved upward to a certain degree by the lever system acting under the force of load it can be assumed that a complete revolution of the wheel could be obtained by the simultaneous actions of so many different levers acting under the weight load. Matters are to be so arranged that when one lever has moved the wheel a second lever begins to operate, followed by a third lever and so on. Thus, the eight levers, fitted over the wheel, will fulfil the purpose of a full revolution of the wheel in continuity.

The "gravitational motor", so called because it relates to the gravitational force creating mechanical energy for rotatory motion. It creates an automatic source of constant power in producing a never-ending rotatory motion with a view to putting it in exchange of power engines of the age for eliminating the huge expenses of fuel, as is consumed for obtaining mechanical energy for power of motion. This device can be utilised for running a table fan without any fuel cost.

According to the inventor, the cost of a proto-type gravitational motor will not exceed that of a bicycle.

LT Sulphuric Acid Plant

First of its kind in India

The Gujarat State Fertilisers Co. Ltd., as placed an order with Larsen & Toubro Limited for a sulphuric acid and oleum plant with a capacity equivalent to 220 tons per day of acid. The plant will be the first of its kind in India to work on the double absorption system. This system utilises the latest technique in reducing the content of sulphur dioxide in effluent gas.

It will produce 85 tons of sulphur dioxide and 85 tons of oleum. The latter two products will be utilised to produce caprolactum, which is now being imported by the nylon industry. The Gujarat Complex will produce 20,000 tons of caprolactum besides other byproducts and, when in operation, will save the country foreign exchange worth Rs 8 crore per annum.

Dunlop Conveyor Belting Neyveli

Neyveli Lignite Corporation has just placed an order for Conveyor Belting worth Rs 1.5 crore on Dunlop India, including Rs 88 lakh worth of 1500 mm. wide overburden belting specially developed for this project. This is the largest single order ever placed on any manufacturer of Conveyor Belting.

Dunlop was the first in India to manufacture rubber conveyor belting in large sizes and also was the first to manufacture fire-resistant and anti-static PVC conveyor belting.

Gravitrol 1500 to help Marine Industry

From our Bombay Correspondent

The Sharples Gravitrol 1500, a machine discharging oil-free sludge and moisture from heavy fuel, has been manufactured by a firm in Bombay.

Though adapted to 100 per cent automation, it can also be operated manually. During automatic operation, the control panel takes corrective actions against all possible faults, simultaneously giving audible and visual alarms.

The Sharples Gravitrol 1500 with a stainless steel bowl and built-in pumps, has many important features. In fact, this machine can be the only answer to the present need of post to post non-stop operation of uninterrupted voyages. It has a capacity of 3 tons per hour for high viscosity fuels and lube oils.

It has only 25 per cent imported components and with planned production and progressive import substitution, the present requirements of India's entire marine industry can be met.

NEW AIR PUMP

Mr Lucien George Dubern of Calcutta has invented a novel air pressure hand-operated pump which can draw water even from a depth of 75 ft. as against 27 ft. for the conventional tubewells. The limitation of depth is due to the fact that the water barometer reads 29 ft. for normal atmospheric pressure.

This invention provides an air-pressure pump comprising lever means connected to a first piston through a connecting rod, the said piston being reciprocable within a cylinder characterised in that the connecting rod is also fixed to a second piston which reciprocates within an air chamber. The bottom of the cylinder is in communication with the water level underground by means of a first pipe. The first piston is connected to a hand lever by a connecting rod which is also connected to a second piston reciprocable within an air chamber mounted above the cylinder so that the axes of the cylinder are in vertical alignment. The main advantage of this invention is that due to the extra pressure head water can be even drawn from a depth of 75 ft. obviating the handicap of conventional type of tubewells.

Another advantage of the invention is that by making a pressure in the tubewell, fine sand particles, which would otherwise be sucked in under vacuum, do not choke the filter at the bottom of the well. The result is that air-pressure pumps constructed according to the invention have longer life whereby maintenance costs are appreciably reduced.

One more important advantage is that no prime mover, such as electric or diesel motor, is required to operate the air-compressor, which means that the inventive pump is more economical to use.

Development Diary

- * The Central Building Research Institute (CBRI), Roorkee, has evolved a large size solar water heater with a capacity to heat 600 litres.
- * The Indian Airlines made the highest net profit of Rs 2.28 crore in 1969-70. The foreign exchange earnings of the airline amounted to Rs 8.50 crore, the highest ever against Rs 7.61 crore in 1968-69.
- * A handy, mobile soil-testing kit has been developed by a small firm in West Bengal, which gives on-the-spot results and is easy to handle, even by illiterate farmers.
- * The State-owned Biological Products Institute in Bhubaneswar has started producing vaccines for Ranikhet disease, which claims a large number of animal population in the country every year.
- * The Planning Research & Action Institute, Lucknow, has developed an expeller, which will raise sugar recovery from cane up to 9%.
- * During 1970, the ore traffic through Mormugao Port, the leading ore port of India, crossed the 10 million tonne mark.
- * Under a Rs 10.98 crore agreement signed with a Japanese firm, India will import a facility for exploiting under-sea oil resources. The facility, capable of drilling oil wells at a depth of 80 metres under water, will be used for the development of under-sea oil resources in the Gulf of Cambay.
- * Plant protection measures were extended to 17 lakh hectares of land in Haryana in 1969-70 as against 6 lakh hectares covered during 1967-68.
- * The Hindustan Housing Factory, a public sector undertaking, has achieved a record out-turn of the value of Rs 1.98 crore during 1969-70 as against Rs 1.93 crore in 1968-69, Rs 1.80 crore in 1967-68 and Rs 1.43 crore in 1966-67. During 1969-70, the Factory also made a record profit of Rs 26 lakh as compared to Rs 20 lakh in 1968-69.
- * According to an analysis undertaken by the Directorate General of Technical Development, the production of 112 items selected for study of import substitution has registered an increase of 9.9 per cent in real terms in 1969 over that in 1968.
- * Indian Railway Engineers are to assist the State Railway of Thailand in increasing the speed of passenger trains.
- * India has signed a five-year (1971-75) trade agreement with USSR which envisages a significant increase in the two-way trade exchanges. Introduction of progressive diversification in exports to each other is a notable feature of the new agreement. The agreement also contains new clauses providing for joint co-operation in third countries and exploration of new avenues of industrial cooperation, which will promote increased trade exchanges in existing and additional fields.
- * Under an agreement signed with Denmark the Indo-Danish cattle development project at Hassarghatta in Mysore State has been extended up to March 1975. The project, which was started in May 1963 with Danish assistance, has contributed substantially to the development of dairy farming, cattle development and cross-breeding in and around Hassarghatta. Besides strengthening the existing centre at Hassarghatta the agreement also envisages the establishment of three subcentres in Mysore State.
- * The per capita availability of cloth since 1950 has gone up by nearly 40 per cent. In 1951, the per capita availability of cloth which comprised cotton cloth only was 10.99 metres. In 1969, it had risen to 15.10 metres.

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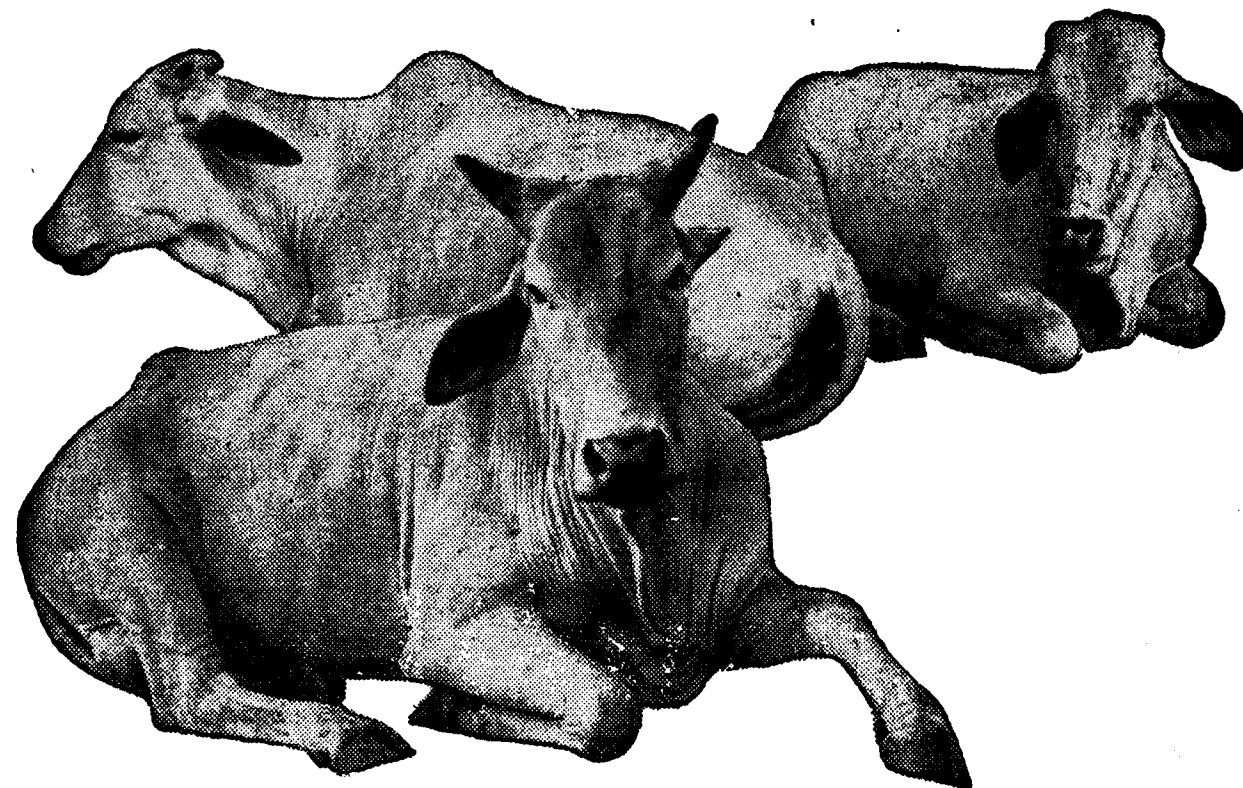
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India's cattle population— the highest in the world

Two hundred and thirty-one million to be precise. That's one fourth the world's cattle wealth. Yet India does not flow with milk and honey. As for milk—we need far more. Forty-one per cent more. That's if each of us has just 6 ozs. of milk a day. And 6 ozs. is only a little over half the minimum nutritional standards. How to ensure a better yield? The answer is better feed—the kind that provides maximum nutrition with minimum feeding labour. One way to achieve this is by installing cattle feed plants complete with storage units, molasses mixing, pelletising, sacking off and dust control.

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LEST WE FORGET

The three important goals in human relations in industry are to get people to cooperate, to produce, and to gain satisfaction from their work. When these goals are achieved, the result is a successful group effort.

Keith Davis

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NATIONAL PRODUCTIVITY COUNCIL

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PRODUCTIVITY IN A DEVELOPING ECONOMY

EVERY developing country must recognise that productivity is one of the essential factors in the process of economic growth. While the production function is important, it should be stressed that economic growth is caused by a large number of factors, the importance of which differs from country to country and from time to time. At the same time, the qualitative components of growth can also be assessed which will lead to the idea of productivity function also acting as a determinant. The approximate mix of inputs and the full impact of management and technology along with other influences on productivity movement contribute to the rate and pace of economic growth.

The productivity movement received a great fillip in the first year of the Decade of the 'Seventies. Along with other member-countries of the Asian Productivity Organisation, India also observed the Asian Productivity Year in 1970. The objectives of this effort were not merely to increase the consciousness of productivity but also to achieve greater prosperity through productivity and to accelerate economic growth. A founder-member of the APO, the Government of India entrusted the implementation of the APY programmes to the National Productivity Council which, since 1958, has been playing a pioneering role in the nation's life. It is on record that in several fields the NPC achieved new levels of performance. The utilisation of its specialists touched a new high and the organisation's revenue, too, showed an upward trend. But the outstanding contribution of India to APY-1970 is the introduction of the Supervisory Development Scheme. It has been found that as in India, in other developing economies too, the main bottleneck in achieving higher industrial productivity is weak and ineffective supervision. The response which the Scheme received is a testimony to the fact that it was properly conceived. The NPC proposes to hold every year a National Certificate Examination in Supervision and the proposed syllabus of study is designed to help both existing supervisors and new entrants to acquire the requisite professional knowledge. Another welcome feature is that the Scheme provides an opportunity to skilled workers to become supervisors. This has a special urgency in our country in the present stage of its development.

In developing countries, there is always a danger that in their drive for increased productivity so much emphasis is placed on quantity that quality and reliability are regarded as of secondary importance. The APO, therefore, quite appropriately, chose

"Quality Reliability" as the theme of APY, and the NPC, on its part, intensified its drive to stimulate greater participation in QR programmes through conferences, seminars, training programmes and film shows. Compulsory application of SQC technique is desirable particularly in respect of export-oriented industries as this can contribute to the achievement of the highest possible quality, maintenance and building up of export orders, and also help sell successfully in the highly competitive world markets. If the drive for achieving quality and reliability gathers momentum in India it may be possible to earn a name that "Indian product is best".

Like India, many other Asian countries are impatient to raise their living standards by taking advantage of the available technology and resources in a limited time span. Happily for some of them this urge is matched by a favourable trend in world affairs, that is making foreign aid available from more affluent nations to those less affluent. We should not forget that it was the lack of productivity that was responsible for the stagnant condition of Asia for a long time when the Western countries were developing.

So far as India is concerned, the National Productivity Council has contributed significantly to the acceptance, adoption, and application of the various productivity techniques in the fields of industry, public utilities and administration. In fact, the APO has declared that Indian's productivity services are "a model for the rest of Asia to follow." While encomiums are welcome, we in our country have yet to do a lot in several sectors of our economy. For instance, much greater emphasis needs to be given to intensify productivity actions in the cooperative sector. Apart from finding out industry-wise what is most needed to be done to eliminate impediments in the productivity field, information activities have to be stepped up further. The creation of productivity consciousness is important, because this consciousness creates hunger, and hunger, in turn, creates a demand for services. Therefore every effort should be made in India and other developing countries to intensify the spread of productivity consciousness in all sectors of the economy from top administrators and managers down to artisans and farmers. It is to be hoped that before we move on to the Decade of the 'Eighties, it would be possible to tackle to a great extent the age-old problem of low productivity and consequent low living standards in Asia and to usher in an era of prosperity and plenty.

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SECRETARY-GENERAL OF ASIAN PRODUCTIVITY COUNCIL

WRITES TO YOJANA

ON behalf of the Asian Productivity Organisation, of which India is one of the founding members, I take pleasure in extending our very best wishes to the *Yojana* Journal on the publication of its special issue on the Productivity of India.

To me, India is not a strange country. I was in New Delhi as the Japanese Government Overseas Representative and, later on, as Counsellor of the Japanese Embassy shortly after the war. My latest visit to the country was in last December, which was also my first visit as the Secretary-General of the APO. The progress of India in all aspects has been impressive and I believe much of it is attributable to the productivity movement which was initiated there nearly 13 years ago.

Productivity represents a state of mind, a constant endeavour to get things done better and is synonymic to prosperity and progress. It is particularly needed in a developing country which is trying hard to bridge its gap with the more advanced countries in economic development and in the standard of living of the people. It should not only be the concern of technicians, but has to become a national campaign involving the entire population.

Productivity encompasses such a wide field that it is impracticable to discuss it in any more details in this short message, and I am sure that it will be more fully covered in this special issue of the Journal. I only hope that through this and other promotional efforts, the productivity concept will permeate deep into the thinking and behaviour of the people in all walks of life and that whatever they think, plan and put to action will be in line with productivity ideas and concept.

The promotion of productivity drive, be it on national or international level, should lay stress on concentration on key areas and intensification of efforts, though the focal points may be shifted with the process of development. The exchange of experience and the transfer of technology through mutual co-operation on bilateral or multilateral basis will certainly shorten the time required and save a lot of efforts. This is the reason behind which the APO was created by eight Asian governments one decade back and still is the *raison d'être* of the Organisation. The usefulness of this regional cooperative effort has been proven by the increase of its membership from eight to fourteen. And it is expected that more Asian nations will join hands in this meaningful campaign and thereby accelerate its pace of progress

STIMULATING ECONOMIC GROWTH

The year 1970 marked the celebration of the Asian Productivity Year in India. In fact, along with India 13 other Member-countries of the Asian Productivity Organisation (of which the Government of India is a Founder-Member) also celebrated the occasion, the objectives of which were not merely to increase the consciousness of productivity, but also to achieve greater prosperity through productivity and to accelerate economic growth.

N. N. WANCHOO

AFTER the attainment of Independence the basic objective of Indian development was to provide the Indian people the opportunity to lead a good and happier life. This certainly was not an easy task when one considers the size and the magnitude of the country and its tradition ridden population.

Eradication of poverty of the masses called for a massive effort of gigantic proportions in a planned way. Therefore the magnitude of the problem of economic development can be gauged from the situation as it existed in 1947 and from the weakness of the infra-structure and the elemental handicaps which the Indian economy then faced.

Except for a few industries, like textiles, jute, cement and a limited quantity of iron and steel, most of our requirements were met from abroad only 20 years ago.

With regard to foodgrains, the Indian economy had long been stagnant, with an annual output fluctuating around 50 million tonnes, and the other basic necessities like education, housing and health facilities were woefully inadequate. Literacy was as less as 14 per cent. The following table will further clear the position in respect of per capita availability of indigenous output:

Electricity	0.0063	Kilowatt
Machine Tools	0.0083	Rupees worth
Steel	0.0027	Tonnes
Railways	0.0001	Kilometre
Crude Oil	0.0007	Tonnes

The primary requirement of the situation was, therefore, to bring the

economy into balance before it could receive any large injection of productivity and create the necessary infra-structure. Within this context productivity policies were evolved both at macro and micro levels. At the macro level the objective was to raise the standard of living by dynamic resource mobilisation. At the micro level, it aimed at the development of training, consultancy, research, and other services so as to create a climate for the use of the tools and techniques of productivity on a physical plane.

The main requirement of the country, however, was to create a whole new industrial structure, for without it a productivity policy would be operating in a vacuum. This was sought to be done through a series of Five Year Plans.

Productivity at Micro Level

As an extensive infrastructure for growth was being laid, the Government thought of initiating productivity programmes at micro level. A series of productivity missions were accordingly invited from the International Labour Office to work in textile mills in Ahmedabad and Bombay and in engineering units in Calcutta. The recommendations of the ILO missions led to the establishment of the Productivity Centre at Bombay under the Union Ministry of Labour. There were many other organisations and institutions which were taking active part in increasing industrial pro-

ductivity but no real productivity movement as such was to be seen in the country.

In 1956, the Government sent a productivity delegation of industrialists, government officials and research workers to Japan to study the work of the productivity centre and other organisations there. On the recommendations of this delegation, the National Productivity Council was set up in February 1958 to:

- spread productivity consciousness at all levels;
- provide productivity services by way of training, consultancy and research on a continuous basis;
- promote productivity movement in different regions with the cooperation of employers, employees, technocrats and government officials; and
- promote technical exchange and cooperation between different regions and with foreign countries.

An autonomous body, the Council comprises national organisations of employers and labour, and concerned ministries and their representatives enjoying parity in both the Governing Body and the General Body of the Council. Professional organisations, local productivity councils, small scale industries and other interests are also represented on it. Since its inception, the NPC has developed a network of 46 local councils. The Council provides training, productivity survey and implementation service (PSIS), fuel efficiency service and foreign training, besides arranging seminars, conferences and symposia, research, and publications and publicity.

The NPC has by now attained a position of distinction in providing techno-managerial coverage in depth in those critical areas which impede productivity in an enterprise. It has perfected the methodology of enterprise-level training and consultancy service, specifically for the

developing countries. Though it can provide such coverage in any techno-managerial subject, it has built up specialised knowledge and expertise, conforming to the requirements of the highest international standards in some selected fields and is providing such services to some developing countries.

The NPC is the apex productivity organisation in India and works through its six regional directorates and 46 autonomous local productivity councils. In addition, there are now 26 other organisations which are engaged in this field and are helping to increase productivity at macro and micro levels.

Impact of Productivity

It can now be said that an extensive infrastructure for growth has been laid and a variety of economic activities have been generated. The improvement in the economic situation in recent years which has led to the formulation of an ambitious plan, involving an outlay of nearly Rs 25,000 crore during the Fourth Plan period ending 1973-74, is almost entirely due to a productive orientation of the economy.

The 6 per cent increase in industrial output during 1968-69 over the preceding year is not due to any marked increase in investment or employment, but mainly due to harnessing the unutilised capacity. The same is true for the expansion of exports.

As against this, the growth rate prior to the planning period was only one per cent per annum. The output of electricity, machine tools, steel and crude oil during 1967-68 as compared to 1950-51 indicates substantial improvement as is seen in the following table:

	1950-51	1967-68
Electricity	2.30 million K.W.	13.09 million Kw
Machines Tools	Rs 3 million	Rs 240 million
Steel	1 million tonne	4.15 million tonnes
Crude Oil	0.26 million tonne	5.8 million tonnes
Food production	54.9 million tonnes	

Today, we are producing not only the full range of consumer goods but have also set up basic industries like iron, steel, fertilisers, chemicals, machine tools, petrochemicals, heavy engineering, etc. India is exporting some of these goods to the very countries from where these were being imported barely 20 years ago.

Agricultural Productivity

Insufficient emphasis on agricultural extension and, what is more important, agricultural productivity was a weakness not only in India, but in several other developing countries. Admittedly, modernising agriculture requires a good deal of industrial inputs, which meant a reasonable degree of industrial progress.

During the last few years there has, however, been positive evidence of a breakthrough in agriculture with markedly high levels of productivity. What is called the Package Programme in the new agricultural strategy is nothing but an injection of a massive dose of productivity into the agricultural system. We have now over nine million hectares under high yielding varieties. This, however, does not give an idea of the contribution of what may be called the New Agriculture, or what is popularly known as the Green Revolution, to the availability of agricultural produce; for in some of the dwarf varieties of wheat, a yield of 5 to 6 tonnes per hectare has been recorded as against a normal yield of about two tonnes even in irrigated areas. Though not so spectacular, yet substantial increases in the yield of other cereals have been achieved through improved varieties. At the moment,

THE PRODUCTIVITY OF BILLY ROSE

Billy Rose achieved fame in several fields till he died in 1966. What was the secret of his productivity?

The first line he chose was shorthand. Even as a boy he would pay his sister, Muriel, to read to him so that he could practise. He won several cups and medals, but was not satisfied. He wanted to win the metropolitan shorthand championship. A night before, while skating, his right thumb was seriously injured; and a normal man would have taken it as an act of fate, but not Billy Rose. He struck a pen through a potato and found that by holding it just right he could still write. He spent most of the night practising, and the next day went out and won the championship.

we are nearly on the point of a breakthrough in paddy which had so far proved intractable. It is, therefore, reasonable to claim that the sharp increase in annual foodgrains output of nearly 20 to 25 million tonnes over the levels of 1965-67 is due to an increase in agricultural productivity. It is on this account that the Planning Commission has decided to make the 'application of science and technology to agriculture' as 'the keynote of the strategy for the Fourth Plan'. We are increasingly realising that agriculture far from being the least productive sector, in fact, provides not only the maximum scope for productivity rise, but also many indirect growth benefits by way of enhanced real wages and expanding national markets. Tractors and farm implements and a higher standard of living seen in some parts of India are the outcome of the application of the productivity techniques.

Now that an extensive infrastructure for growth has been laid upon which a wide variety of economic activities has been generated, the importance of productivity services in the field with requisite professional depth is even greater. Hence during the Seventies, the NPC's work at macro and micro levels calls for both enthusiasm and optimism.

MECHANICS OF A NATIONAL INSTITUTE OF MANAGEMENT

B. N. BHATTASALI

MUCH of the halting progress in the spread of managerial knowledge in developing countries has been attributed to their weak technological base. Yet, a number of fundamental techniques of scientific management can be adopted by these countries irrespective of the stage of their technological development.

Low capital bases, inadequacies of the technical services and skills, shortage of capital equipment, raw materials and infrastructure in general, poor purchasing power and restricted size of the national market with a low standard of living of the people, social resistances and stratifications,—all these substantially affect the colour and content of the managerial problems in developing countries. Broadly, these pertain to three major areas of economy: (1) Resource Development; (2) Resource Mobilisation; and (3) Resource Utilisation.

The broad scope of management actions involved in all the above three spheres of activities would, however, get narrowed down when it is strictly confined to the direct responsibilities of an industrial manager i.e. resource utilisation.

In providing various categories of services for solving the long and short-term problems of industrial management, a national management institution must concern itself with the effective utilisation of the resources placed at their disposal. This means the adoption, adaptation and development of proper techniques of planning, direction, coordination, motivation and control of the activities of an enterprise so as to raise the level of its productivity. What precisely constitutes a short and a long term problem? Such management problems as can be resolved by introducing better systems and better working methods within a short period without any appreciable new financial investments could be treated as short term. These problems are essentially concerned with better utilisation of available resources, whereas long term problems involve resource development and resource mobilisation over a period of time.

To begin with, publicity and training programmes must have precedence over all activities in a national management institution for initiating its programmes and for ensuring the smooth functioning of the other services developed by it. Essential for creating awareness of managerial weaknesses in enterprises, they reduce the incidence problems in industrial enterprises by having a more enlightened and competent cadre

of employees. When a problem actually arises, it is much easier to solve it through enlightened employees than ignorant ones. First, productivity consciousness should be aroused on an extensive scale by propagating its basic tenets in a simple forthright language.

In order to create a national movement, conventional and unconventional methods of publicity can be employed. Such a widespread productivity consciousness can motivate individual and group activities in industrial enterprises. It can also help in resolving employer-employee disputes. It will also prepare the much-needed base for training and consultancy work for progressive improvements in enterprise operations.

The essence of progressive management is continuous surveillance over cost and quality, and the prevailing situations in enterprise operations which affect them. Techno-managerial publications, therefore, go a long way towards solving the problems of industrial managers, who, through a process of self-exertion, pick up a good deal of professional knowledge in their applied context. It is essential to have an adequate number of illustrations and case studies, preferably indigenous ones, for ease in communication and assimilation by the readers.

A national management institute could publish journals and periodicals to supplement its publicity programmes, so that practising managers are able to talk about their experiences in solving different management problems.

Apart from audio-visual aids, like slides, film strips, etc., films on different management topics could also be used. A film library covering quality, cost, health, safety, waste elimination, labour-management cooperation, and other subjects will be of reference value.

The important role of training by competent staff, in preventing the incidence of problems as also in resolving those which had arisen, hardly needs any elaboration. Planning, direction, coordination, motivation and control—all these essential ingredients of management presuppose team work which is essentially dependent upon effective communication both ways. A large number of short-term problems in industrial enterprises by way of delays, dislocation, miscalculation and frictions, can be attributed to the inadequacies of training at different levels of management.

A national management institute however, cannot meet all the training needs at different levels of management for all the enterprises. It must, therefore, adopt

a selective approach, which has the following alternative possibilities.

1. *Short-term courses for top management* : It is well known that without brain-storming the top management and making them appreciative of the values of managerial training, little progress can be achieved in driving home the tools and techniques of industrial management at the different levels of an enterprise. A short seminar on general management or on a particular aspect of it can bring in such key personnel within the orbit of management development.

2. *Training and retraining of trainers*: No organisation is better suited for undertaking this important responsibility than a national management institute. Apart from facilities of adaptation of managerial themes through research and development, a national management institute would have the resources and capacity for equipping the trainers with the requisite standard of professional knowledge needed for generating the multiplier effect throughout the country, along with importing knowledge of modern teaching techniques.

Major industrial establishments should be encouraged to have their own training departments, particularly for middle management and supervisory training, by providing training and later on retraining facilities to their enterprise-level trainers. Small and medium-scale industries do not generally have their own training departments, but need assistance from other local bodies and institutions. The trainers from such corporate bodies and institutions interested in management development could also be trained along with the enterprise-level trainers, which would facilitate cross-fertilisation of ideas between different sections of industries.

3. *Model Training Courses* : To ensure qualitative excellence of management training, a national management institution could locate these basic areas which give most of the headaches to industrial managers and organise short-term training courses on these. Proper development and publicity of course contents and development of training manuals and kits are essential prerequisites in this process.

4. *Training courses in new areas* : The art and science of management are progressing every day. New ideas are emerging and new methods are being developed, which, after due modifications to suit the country's needs, could be transferred to the enterprises through training and publicity. Such pace-setting courses could be held either at the national management institution itself, or at strategic points, i.e. under the auspices of corporate bodies, leading industrial establishments, etc.

5. *Workshops for middle managers and specialists* : A meaningful spread of managerial knowledge to improve existing practices through exchange of information and experiences and for introducing new topics could take place particularly among the busy executives through short sessions of workshops and seminars.

Publicity, training, and consultancy—all these are important vehicles of assistance to industrial managers

for solving their problems. Publicity seeks to spread managerial knowledge on an extensive scale and at low cost, but the main limiting factor is its impersonal nature. Training seeks to spread managerial knowledge to small groups of executives with a degree of personal involvement of the trainer and the trainees, but cannot assume the specific individualised and specialised form as in the case of consultancy work for an enterprise. An outside consultant, a financial consultant, for example, who may have no better professional qualifications than the financial director of the enterprise, has the all-important advantage of being a detached observer, his mental spectrum spreading over many establishments and his power of observation and ability to locate the critical areas through comparison sharpened on that account.

A faculty member of a national management institution can have the unique advantage of combining in him these three roles, i.e. role of a writer of publicity materials on management, involving the use of analytical and research faculties, the role of a trainer enunciating the latest principles and practices on managerial themes, and the role of a consultant well versed in the techniques of application. The interaction of all these three categories of activities in one and the same person enriches the professional depth and the applied values of all the three services. A national management institution by encouraging its faculty members to participate in these three activities is in a happy position to develop the highest possible professional standards not readily attainable through other means.

Consultancy work is seldom successful without a proper client base, which is far from satisfactory in most of the developing countries. This means concerted efforts to popularise managerial themes over a period of time through publicity and training, so that there is proper assimilation and implementation of the advice given by the consultant.

Private Consultancy

No national management institution can be expected to give coverage to each and every problem of the industrial managers throughout the country from its limited organisational and operational resources. Still the problems of the managers are very real and need expeditious solution. A national management institution could, therefore, encourage the industrial managers to set up industrial engineering and management cells within the enterprises, particularly at the larger enterprises. These cells could systematically audit the enterprise activities and provide consultancy service. For small and medium business, the relevant corporate bodies and service institutions could provide similar consultancy assistance. Promotion of private consultancy work either by individuals or firms through training facilities provided by a national management institution can also be very useful.

Important sectors of national economy, which have challenging problems or problems emanating from the expansion of internal and foreign trade, introduction of new technologies, modernisation, merger, etc.,

call for direct consultancy work to be undertaken by a national management institution.

Even though the operation of an interdisciplinary management clinic with a team of visiting specialists, dealing with organisation, personnel, finance, production and sales problems is no substitute for indigenous growth and maturation of management expertise within a developing country, these clinics could still provide stimulus to such an indigenous growth.

A management clinic may not have adequate time at its disposal to do all the preparatory work as well as systematic follow-up of the implementations of the recommendations in the concerned developing countries. Such problems can be overcome by a management clinic in a two-fold manner. First, by having in the team one or more competent experts whose professional skills had been applied in solving the fairly common problems of industrial managers in the developing countries for a reasonably long period. Secondly, a management clinic can develop intimate collaboration arrangements with the national management institutions for the preparatory work and for the implementation and follow-up of the recommendations made by it. To warm up the general techno-managerial climate of the country, there would be good justification to hold one or two top management seminars or workshops in specific fields under the auspices of the national institution, taking the opportunity of the presence of the team of visiting specialists.

Short and Long Term Problems

In the pattern of cooperation between a national management institution and an interdisciplinary team of visiting experts for operating a management clinic, a distinction has to be made between solving the short and long-term problems of the industrial managers. Most of the short-term problems of industrial managers emanate in the course of resource utilisation for producing the requisite goods and services, whereas most of the long-term problems are related to resource development and resource mobilisation. It is a common experience for management consultants in most developing countries that, except for the very large enterprises, few industrial establishments have systematic cost and other relevant data.

A national management institution perhaps could act as the host and the local agent for management clinic doing the basic groundwork for its visit and proper functioning. Later on the institution could also provide staff training, implementational assistance, trouble shooting and follow-up services after the departure of the members of the clinic. When the clinic is in session and the visiting experts work on examining various problems and suggest their solutions, it is a good thing to involve the representative of the national management institution in the process so that important local variables are taken into account before recommendations are finalised.

The effectiveness of a visiting management clinic in assisting industrial managers in solving their long-term problems is much more dependent on the depth and extent of cooperation received from the national manage-

ment institution or similar local bodies. This is so because, by and large, most of the long-term problems are concerned with the issues emanating from resource development and resource mobilisation. These generally call for systematic data collection and data processing work over a period of time, and a substantial amount of analytical and research efforts for reference and use by members of the visiting management clinics.

The advantages of a management clinic in assisting managers in solving their long-term problems include wider experience and broader mental horizon of the visitors familiar with the state of resource disposition and mobilisation in other countries, apart from professional expertise. Besides the policies and programmes prevailing within the country, visitors could often provide valuable technical and business information upon which many fruitful avenues of international technical and commercial relations could be developed.

Research

The major contribution of research in assisting industrial managers will be in the process of adaptation of managerial ideas and practices developed in the West, improvement and modification of the existing ones in the country and development of new areas. Many industrial establishments have problems which could only be satisfactorily solved through detailed samplings and studies over a period of time. For example, causes of labour troubles, absenteeism, studies on material standardisation or substitution, etc., often involve a substantial amount of research work. A national management institution could undertake a number of these with advantage to serve the interests of the client as well as its own.

Researches on resource development, resource mobilisation and on the managerial implications of the variables mentioned earlier, often produce very useful results, particularly when the findings are highlighted at appropriate quarters for formulating and reviewing policies, which often pay rich dividends in solving the problems of industrial managers, particularly the long-term problems. All industrial managers have stakes in these, and should actively support and cooperate with research efforts of the national management institution.

Another aspect of research which is often sadly neglected is the quality and quantity of the services provided by the national management institution and other techno-managerial institutions in the country along with the location of the weaknesses and the critical areas in such services together with suggestions for improvements.

A national management institution should encourage all its faculty members to contribute a portion of their time in research activities, wherever necessary collaborating with other specialised institutions carrying out inter-disciplinary studies. Research is essential for the maintenance of a progressive temper. And it is upon this temper that the effective solutions to problems of industrial managers and progress in management development largely depends.

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GREAT FILLIP TO PRODUCTIVITY MOVEMENT

L. R. BALA RATNAM

THE advent of the first year of the Decade of the 'Seventies gave a great fillip to the productivity movement in India. It marked the celebration of the Asian Productivity Year (APY), the theme of which was "Quality Reliability", and the principal motto, "Prosperity through Productivity". The decision to celebrate 1970 as APY was taken by the Asian Productivity Organisation (APO). The National Productivity Council (NPC) was entrusted by the Government of India with the implementation of the programmes in the country. It chalked out details of the various promotional and field programmes to be undertaken for wider adoption of productivity techniques in industrial and agricultural sectors, and in public utilities like transport, communications, banks, and offices. The programme was formally inaugurated on January 3, 1970. In all, over 300 training programmes were organised, involving participation by thousands of persons. In the field of marketing, a new programme was launched which related to Productivity in Selling and Salesmanship.

The launching of NPC's new Supervisory Development Scheme on May 1, 1970, may, in fact, be regarded as India's major contribution to APY. Weak and ineffective supervision has been the main bottleneck in achieving higher and higher productivity, and the scheme, therefore, has been evolved so as to—

- (i) equip the existing untrained supervisors with the basic knowledge of the profession; and
- (ii) provide opportunities for the vertical mobility of deserving supervisors to junior management positions, and of deserving skilled workers to supervisory positions over a period of time.

The scheme is primarily intended to enable the existing Supervisors numbering over 3,00,000 and the new entrants numbering about 16,000 annually, to acquire the requisite professional knowledge through self study supported by enterprise-level training programmes. Apart from evolving a syllabus of study for them, the NPC has prepared adequate literature to give them a grounding in several subjects, and also finalised the details of a National Certificate Examination in Supervision to be held regularly every year from November, 1971.

The response to this scheme has been strikingly encouraging. Registrations for the examination totalled 5,000 by the end of the year, and several private institutes even have come into existence to coach candidates for the examination, either through correspondence or regular class lessons. The Hindustan Aeronautics, Bangalore, has decided to include this examination as a desirable qualification for the recruitment of supervisors in their establishments, and several enterprises have volunteered to pay the examination fees of such

of their employees who wished to take the examination. A number of Local Productivity Councils have started organising long-term courses to prepare candidates for this examination.

Two other important programmes organised during APY related to Quality Reliability and Fuel Efficiency. From the commencement of 1970, the NPC made efforts to popularise the APY theme, Quality Reliability, through training programmes, lectures, seminars, film shows, and also essay contests organised through professional and other bodies like the Indian Standards Institution, the South Indian Textile Research Association, the Federation of Associations of Small Industries, and the Institute of Chartered Accountants of India, etc. The NPC also produced a coloured film, with commented tape, on "How to Organise a QR Campaign at Enterprise Level". In respect of the small-scale sector, it worked out a programme in collaboration with the Office of the Development Commissioner, Small-scale Industries, Government of India, and the Indian Standards Institution.

Two films titled "Right First Time" and "According to Specification" were screened for the benefit of the general public as well as for the management and employees of industrial units. These films were received specially for the APY from the British Productivity Council.

The NPC continued to play a leading role in promoting Fuel Efficiency and in assisting selected industries in successfully burning low-grade coal. In fact, APY-1970 marked a period of further growth of its fuel efficiency services. For the first time, an assignment was undertaken at a rayon factory to burn low volatile Madhya Pradesh coal in their stoker-fired boilers with the steam jet arrangement designed by the Fuel Efficiency Consultants of the NPC. Considerable breakthrough was also achieved in embarking on design assignments which had so long concentrated on operational improvements at the shop-floor level.

A national seminar on fuel efficiency was held at Delhi in October in collaboration with the Coal Board, the Central Fuel Research Institute, and the Indian Branch of the Institute of Fuel (London). This Seminar was followed by two Regional Seminars at Bombay and at Bangalore, the latter one concentrating on paper and pulp industries. In the national seminar, top-level engineers numbering over 180 participated.

Participants from both public and private sectors attended an Advanced Management Programme organised by the NPC at Srinagar in collaboration with the Jammu and Kashmir Productivity Council. The Ahmedabad LPC organised a series of "Career Courses" under the relief scheme of the Government

of Gujarat for the educated unemployed. Other important programmes were a 40-day training course on "Financial Management" at Jaipur, a 3-month long course on "Company Standardisation" at Kanpur and a Tool Engineering Programme at Bangalore in May-June.

The concept of productivity was carried to the kitchen by a training programme on "Kitchen Productivity and Home Management" for home-makers, organised by the Tiruchirapalli Productivity Council in December. The programme covered topics like work simplification, kitchen plan, interior decoration and effective time utilisation.

Worker Development

Labour's cooperation in achieving higher productivity is so vital that, during APY, several programmes were organised for them and trade union leaders independently and in collaboration with Workers' Education Centres, Regional Labour Institutes, etc. A course on work study for trade union organisers was conducted at Calcutta. Among other programmes were an inter-company training course on Trade Union Development at Hyderabad, and a course in Industrial Engineering Techniques for Trade Unions at Udyogamandal, Kerala. To infuse in employees the importance of quality, special classes on Quality Reliability were held at some enterprises.

A number of Special programmes were also organised in different enterprises. For instance, the Indian Cable Co., Jamshedpur, organised a "Productivity Month", and this special drive brought about an improvement of 11.5% in the performance index, and workers benefited through the resultant incentive bonus which registered an increase of 13.5%. In the Mysore Region, the "APY-1970 Week" was celebrated in November. A Productivity Campaign Week was celebrated in Belgaum when a team of productivity experts visited about 100 industrial units and suggested to them various methods to improve productivity.

The NPC Consultancy Services, known as PSIS (Productivity Survey and Implementation Service) gathered further momentum during the year. In all, about 70 consultancy assignments, covering 15 areas, including Fuel Efficiency, Organisation and Methods, Work Study, Manpower Assessment and Production Norms, Materials Management and Plant Layout, and Application of PERT were undertaken in both public and private sector undertakings.

To encourage small industries to make use of modern productivity techniques, by availing of the consultancy services of NPC/LPCs at subsidised rates, the Tamil Nadu Government launched a novel scheme under which the Tiruchirapalli LPC undertook work in four small-scale industrial units. The Andhra Pradesh Productivity Council also started this service on a limited scale in the Foundry Industry. At Ludhiana, the NPC Regional Directorate established a small-Scale Industries Productivity Cell with financial assistance

from the Punjab Government to render subsidised services to small units in the State with a view to reducing cost and improving quality and efficiency.

Productivity Cells

Yet another area where the NPC has tried to help industry is in respect of establishing enterprise Productivity Departments/Cells. The NPC sent its scheme to a number of industrial units and also sought the help of the Indian Chamber of Commerce, the Indian Engineering Association and a number of other bodies to circulate it among their members. There was an enthusiastic response, and several enterprises sought additional information in the mechanics of establishing Productivity Cells and the benefits that might accrue there from. A number of industrial units have now set up separate Productivity Cells/Departments, and several others are in the process of forming similar units. The All-India Manufacturers Organisation (AIMO) created a separate cell for Productivity at their Central Office in Bombay and separate units in their offices in other States. As a number of enterprises have sought the help of the NPC for providing qualified industrial engineers to man these cells, it has started since December 1970 a year-long special Industrial Engineering Course in addition to the existing 2-year course at Madras. Twenty-two trainees in all were recruited for this special course.

Educational institutions have not so far utilised productivity techniques, but in some universities the subject has recently been included in the syllabus. The NPC felt that the idea of productivity should be inculcated even from the school stage and, therefore, it organised during APY essay contests for school and college students at national and local levels in collaboration with the LPCs. Essay and elocution contests were held at a number of centres.

International Services

The qualitative excellence of the NPC services is now acknowledged widely as they stand comparison with those of productivity organisations in Japan, West Germany, etc. During APY, the NPC commenced a one-year Industrial Engineering Course at Cairo for training nominees of the Arab League countries. By undertaking this assignment, it has already set the pace for playing an important role in extending productivity service abroad, particularly in the Asian and African countries. Also it organised, on behalf of the APO, two important programmes in Delhi—one on the Measurement of Productivity, early in January 1970, and the other on the Development of Entrepreneurial Talent, in December 1970.

The programme on Measurement of Productivity emphasised the importance of the application of the Concept of Measurement of Productivity in locating the critical areas in an enterprise and offered

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PRODUCTIVITY IN EXPORT INDUSTRIES

H. D. SHOURIE

IT is now universally agreed that a seven per cent compound rate of growth in exports annually is the minimum of the Fourth Five-Year Plan. Seven per cent rate of growth in exports is essential for a variety of reasons. Increasingly larger imports will be necessary during the incoming year to sustain the minimum growth rate in the economy of five per cent per annum, the import bill during the last two years notwithstanding. The enormity of our foreign exchange gap is clear from the figures (in terms of dollars) of our exports and imports for the fiscal year 1968-69. Our imports for that year were estimated at 2,650 million dollars. Our exports for the same period totalled 1,750 million dollars. The obligations on account of interest and repayment charges on debts incurred in the past came to 500 million dollars. Thus, our total obligations, estimated at 3,150 million dollars, constituted almost twice our export earnings for the fiscal year 1968-69.

The estimates of the foreign exchange requirements for the Fourth Five-Year Plan reinforce the preceding analysis. Our total foreign exchange requirements (excluding debt servicing and payments) have been estimated at Rs 10,150 crore. The bill for maintenance imports alone is Rs 9,730 crore. The deficit on account of invisible transactions (excluding official grants and interest payments) comes to Rs 140 crore. The amount due for repayment to IMF has been estimated at Rs 280 crore. A broad picture of the balance of payments position during the Fourth Plan will not be clear unless the debt servicing charges are also indicated. The debt servicing charges have been estimated at Rs 2,280 crore. Since the export earnings during the Fourth Five-Year Plan will not exceed Rs 8,300 crore, the balance of Rs 4,180 crore will have to come from external assistance. That is why the net inflow of external assistance has been placed by the Planning Commission very rightly at Rs 1,850 crore. It follows from this that the foreign exchange resources required to be earned through export earnings during the Fourth Plan at Rs 8,300 crore constitute roughly two-thirds of the exchange requirements.

The export earnings will have to rise from Rs 1,360 crore in 1968-69 to Rs 1,900 crore in 1973-74 (final year of the Fourth Plan) if the target fixed for export earnings for the plan period is to be achieved.

The Planning Commission has made some projections which would have one believe that the target of Rs 8,300 crore of export earnings during the Fourth Plan has a very good chance of fulfilment. The Commission, however, is silent on the bases of these projections. All that the Commission has done is to give us an indication of the commodities from which the bulk of the additional export earnings anticipated during the Plan period will come. The export commodities have been classified by economic categories like ores and minerals, manufactures and agricultural and allied products. Among ores and minerals, a large increase in export value is expected only in the case of iron ore. The Commission has envisaged the largest increases in the category of manufactures. Among the items which share these increases are engineering goods, iron and steel, chemical and allied products, footwear, leather manufactures and jute manufactures. In the category of agricultural and allied products, exchange earnings from fish and fish products and cashew kernels are expected to register very substantial increase.

The Plan document, however, has clearly set out that fulfilment of the export target will depend on the implementation of a number of policy measures by the Government. These policy measures include implementation of the steps designed to achieve the production targets in the agricultural, mineral and industrial sectors, restraint on the growth of domestic consumption to release larger surpluses for export, imposition of minimum restrictions on exports, provision of incentives to exporters, stability in export policies, improvement in port and shipping facilities, efforts for location of export markets, provision of technical and financial assistance for making possible export of machinery and equipment to developing countries and competitiveness in cost and quality.

Cost Reduction

The last of the steps indicated in the preceding paragraph, that is, competitiveness in costs, can be achieved, among other things, through a systematic programme designed to bring about a reduction in the cost of production of exportables. The persistent upward movement in cost and prices in recent years continues to undermine the competitiveness of Indian goods in foreign markets. The devaluation of the rupee was primarily designed to effect realignment of costs and prices in India with those in foreign countries. However, the expectations in this regard have been belied. If anything, inflation and shortage of some crucial raw materials have increasingly eroded the competitive ability even of our traditional goods which form the core of our exports.

The high cost structure of the export industries is an indication of the internal economic maladjustments and cannot be tackled in an isolated manner. Total stoppage of major imports and rising money incomes have ensured a highly sheltered lucrative market for industries catering for domestic demand. There is, therefore, no incentive for these industries to pay any attention to cost reduction. However, our export industries are up against acute competition in foreign markets. Unless the country draws up a systematic programme of cost

Cost reduction alone will not ensure efficiency

reduction, there is a danger of our products being priced out in foreign markets.

It is against this background that effective steps for tackling at least those elements of costs, which are amenable to control in the short-run, assume great importance. It is absolutely urgent to keep cost trends under a close watch with the objective of controlling costs and ensuring maximum efficiency in production. There are three stages of operation in cost reduction:

- ascertaining costs by allocation of expenditure to specific activities, jobs, processes or products;
- locating errors and inefficiencies by setting up standards as a basis for judging actual operating performance; and
- advising on the measures to be taken to rectify errors and inefficiencies and the implementation of these measures at the plant level.

The cost reduction machinery will have:

- to arrive at the cost of production of every operation, process, department or service in selected concerns and develop cost standards;
- to indicate to the industry any inefficiencies and the extent of various forms of waste; whether of materials, time, machinery, labour, etc., and suggest remedial actions;
- to reveal sources of economies in production having regard to methods, types of equipment, design, output, etc;
- to provide actual figures of cost for comparison with estimates and with standard costs;
- to present comparative cost data for different periods and for various volumes of output;
- to give a comparative picture of performance of different firms in the industry and suggest ways of improving the performance of weak firms;
- to secure and maintain data relating to e.i.f. prices of India's export products in international markets;
- to compare cost and price data of different countries to ascertain the competitiveness of Indian goods abroad; and
- to disseminate information to member-concerns.

The elements of cost, however, differ from industry to industry. The complex nature of cost reduction makes the task of designing a machinery for cost reduction very difficult. There are two possible alternatives for the organisational set-up for cost reduction machinery: (i) an all-India organisation of the nature of a

National Institute for Cost Reduction, and (ii) Cost Reduction Units at the commodity level.

The proposed machinery, however, will not prepare the basic documents. It will function only in an advisory capacity and will not take the responsibility for the implementation of the measures. It will be expected to treat the information on costs of individual firms on a strictly confidential basis. It is needless to emphasise that this machinery should concentrate on principal areas of cost reduction and locate points where potential savings are possible.

It is not intended to suggest that measures for cost reduction alone will ensure the efficiency of production in export industries. The implementation of all the policy variables indicated in the plan document are essential not only to enhance productivity in export industries but to ensure the fulfilment of the target of Rs 1,900 crore of exchange earnings by 1974.

PRODUCTIVITY IN INDIA

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participants a better understanding of the problems relating to productivity in the Asian countries. The Symposium on Entrepreneurial Talent created so much interest in the subject that in less than a month the National Alliance of Young Entrepreneurs organised a National Seminar in Delhi on January 15 and 16, 1971,

The APO also organised in Tokyo an Asian Productivity Congress, from August 18 to 21, which was attended by representatives from Governments, management circles, academic circles, labour and other institutions concerned. A four-member Indian delegation attended this programme which was designed to help in bringing about the coordinated effort that should go into the forming of the future action programmes for encouraging productivity.

In the field of publication too the NPC/LPCs brought out a substantial amount of literature in both English and regional languages. The NPC also produced a 35 mm Eastman colour film titled "Prosperity Through Productivity".

The various programmes undertaken by the NPC/LPCs during 1970 were quite purposive and meaningful, and they have created a climate for the much-needed Quality Reliability which was the main theme of APY. The various seminars, lecture meetings, film shows, training and consultancy services have succeeded in infusing in all concerned a determination to lay stress on the quality aspect.

PROBLEMS AND PROCEDURES

Organising Productivity Departments

BRIG K. PENNATHUR

DURING Asian Productivity Year—1970 and earlier in the late sixties, many industries set up their own productivity departments, realising their importance in raising productivity. Having one's own productivity department has many advantages. It is a composite part of an industrial establishment and, hence, a greater *esprit de corps* may be expected of the departmental staff. They would be emotionally integrated with the aspirations of the work force. In a productivity department of a fairly large size, it would be possible to have specialists of different disciplines who would be capable of coping with different types of problems. Such a department is of the most economical service where there is scope for continuous application of productivity techniques.

The right climate to welcome productivity should be created before steps are taken to establish Productivity Cell. The very first task, after taking a decision to establish a productivity department, is to communicate this policy decision to all concerned. The labour leaders and representatives must be taken into confidence regarding this decision at the very outset. The objective behind establishing the department and the way in which the workers would benefit by it should be fully explained. The benefits accruing to the workers include better working conditions, reduction in physical and perceptual strain, higher standards of health, safety and comfort, opportunity for earning incentive bonus, and some share in the gains achieved through productivity.

The top executive must then issue a policy directive to all levels of management explaining the decision. It must be made firmly clear to all concerned that Productivity will be adopted as a standard management practice. Appreciation talks and lectures on productivity and its application by eminent and knowledgeable persons in the field should be arranged for all levels of management, for the labour leaders and representatives (trade union leaders, production committee members, and works committee members), and for the work force.

Organisational Structure

The organisational structure of the Productivity Department needs to be determined carefully. The more the number of people employed in the organisation, the larger will the productivity staff be. Similarly, the greater the range, variety, and volume of products turned out, the bigger should the department be. If the processes and types of activities are varied and complex, a larger complement of specialist staff is called for. The expansion plans and projects envisaged for the future would have a bearing on the size of the staff, because productivity applied at the planning and design stages can yield spectacular results.

In selecting the personnel, the management will have to decide whether all or part of the staff are to be recruited from within the personnel serving in the organisation, or from the open market. The method of recruitment is a subject for management policy. Where

feasible, the head of the department should be recruited from the open market. A highly qualified and experienced person would be able to get the department organised, and some studies initiated with the least delay. Also, about 25 to 40 per cent of the proposed strength of the department may be recruited from outside. This will help in the early establishment of the nucleus over which the department could be built. The remaining staff may be recruited from within, sent on proper training programmes, and apprenticed under the experienced people already recruited. The head of the department should be actively associated with the selection of the rest of the staff, and his views and recommendations given due weightage.

The productivity department could be a homogenous group with people interchanging assignments in field-work training, research, etc., or structured to deal with different facts like work study, quality control, materials management, and operational research. In a small department, the homogenous group is decidedly more advantageous and saves marginal losses in the utilisation of specialists. It renders the specialists more versatile. In a larger department, division by functions enables specialisation in depth, and to that extent the results will be more rewarding.

Productivity is such a vital function that its control must be vested at as high an executive level as possible for it to be effectively applied and implemented. If the top executive does not have the time enough directly to control this department, it should function under the deputy chief executive. Relegating it to anywhere lower down would, to that extent, detract from the scope and value of the service rendered by the department. As a corollary, the head of the productivity department should be of a senior management status.

Large business organisations have factories and establishments spread out in different parts of the states or country. In such cases, it is normal to have a central productivity division at the headquarters and branch productivity departments at the various subsidiary installations.

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Topping their outstanding export performance over 7 years

INDIAN TUBE SET NEW EXPORT RECORD IN 1969-70

	TONNAGE	FOREIGN EXCHANGE (F.O.B.)
LARGEST TUBE EXPORTER DURING 1969-70	29,555	Rs. 279 Lakhs
LARGEST TUBE EXPORTER TO SUCH SOPHISTICATED MARKETS AS THE U.S.A., U.K. AND AUSTRALIA, CUMULATIVE UPTO 31.3.1970	62,794	Rs. 586 Lakhs
LARGEST TUBE EXPORTER, CUMULATIVE UPTO 31.3.70	90,438	Rs. 787 Lakhs

Underlying these figures is the forward looking policy of Indian Tube. The Company started exporting in 1962-63 when there were hardly any incentives for exports, nor was there any industrywise obligation. The Company foresaw that abiding export markets on a long-term view would be the sophisticated markets and not the nearby developing countries which would achieve self-sufficiency within a few years. The Company's export efforts have been mainly directed to the sophisticated markets and the above facts show the measure of success.

The breakthrough to the world's largest and the most sophisticated and competitive market, the U.S.A., was achieved against heavy odds—high ocean freights, low realisation and product development to achieve customer acceptance. Tubes to ASTM A-120, threaded & coupled, from India were introduced to this market in a pioneering effort by this Company. This Company's

exports to the U.S.A. accounted for nearly 75% of total exports to that country from India, between 1.4.64 and 31.3.70.

In the year 1969-70, the Company exported 29,555 tonnes, improving upon the 1968-69 performance by nearly 50% in both tonnage and in foreign exchange earnings. In order to achieve this all-time high for any tube manufacturer in India, the home market was supplied some 7,000 tonnes less than in the previous year, at a sacrifice of more remunerative home market prices. This is the second time that this Company have established new export records. In 1966-67, the Company were adjudged not only the largest exporter of steel tubes but the largest exporter in the entire field of engineering goods. The performance in 1969-70 has established the Company not only as the largest steel tube exporter but also the largest exporter in the entire Commodity Group "Metal Manufactures".



The Indian Tube Company Limited
A Tata-Stewarts and Lloyds Enterprise

PRODUCTIVITY IN SMALL-SCALE INDUSTRIES

K. L. NANJAPPA

PRODUCTIVITY does not merely mean producing more. It means more than an efficient way of production. It steers the very process of production to greater strength and efficiency. It is the ratio between input and output in an industry or an enterprise, where it aims at efficient utilisation of resources available with the unit of industry. In a country like ours, where factors of production are scarce, the concept of productivity assumes vital dimensions.

There is a common belief that the small-scale sector, because of its limited scale of operation, limits productivity in its operations also. This has been amply disproved by the emergence of ancillary production in the small sector. Actually, because of the diseconomies of scale, the large-scale units obtain the required parts and components from the small-scale units. No doubt, there are definitely some industry operations which may not be suited for small-scale operations. The technological levels and the industry inputs required may be such as may call for large-scale operations. There is, however, a large field of production in which technological requirements are suited only to small-scale operations.

The present magnitude of the small-scale sector will give an idea of the sweep of the sector in the national economy. In 1963, it was estimated that 91 per cent of the total number of factory establishments belonged to the small-scale sector. As early as 1961, the total employment provided by this sector accounted for 39 per cent of the total employment in factories. Gross output in the small-scale sector was estimated at Rs 60,420 million in 1968, which was 52 per cent of the gross total industrial output. The growth of this sector in terms of numbers was also phenomenal, from 35,728 in 1961, the total units (registered) grew to 1,78,000 in 1969. If the unregistered units are also taken into consideration, it will swell the figure to 3 lakhs, which is quite an impressive achievement by all standards in such a short time. In terms of products range and sophistication reached in production, this sector has grown considerably.

It is necessary to understand what we mean by a small industry unit in India. It does not refer to the village or cottage type units. It actually refers to factory-type establishments with investment in plant and machinery not exceeding Rs 7.5 lakh (Rs 16 lakh in the case of ancillary units). Modern small units mostly use machinery and power and a system of production based on improved techniques.

As could be seen from its contribution to the national economy, the small industry sector is no more small. Of late, this sector has been active in the field of exports also. Capacities of a large variety of goods and components even for advanced countries like Japan have been identified. And yet, this sector, as compared to the large-scale sector, is chronically handicapped by what is called idle capacity or under-utilisation of capacities. It was estimated that only 40 per cent of the capacities are currently made use of today. This is a tremendous drag on the productive capacity of the sector.

Serious Difficulties

Small industries are having serious difficulties in adapting themselves to greater productivity. There are obvious reasons for this, the foremost among them being lack of resources and limited access to capital. Another equally important reason is that they are usually poorly organised units. Many of them either do not have scientific costing data which impedes them to calculate profitability of their product, investment, and so on. They also suffer from the absence of separate sales policy resulting in ignorance of marketing research, badly organised channels of distribution, etc. Most of the small firms realise the advantages and importance of adopting new methods or techniques of production, and find it difficult to act alone.

The major stumbling block in implementing productivity programmes in the small-scale sector is the absence of productivity-consciousness among the small industrialists. This is mainly due to the seller's market prevailing in the country, and also due to the fact that small industries cater to local markets. The situation, of late, has considerably changed. The seller's market is slowly giving way to the buyer's market. Markets often report glut in production, and absence of competition cannot be taken for granted any more. Hence, there is now an increasing awareness towards productivity.

To achieve better productivity it is necessary to have the cooperation and coordination of the factors of production—capital, labour, and management. Pecuniary difficulty is the fundamental cause of not putting into use sophisticated machinery and equipment thus resulting in low rate of production per rupee of investment. This is being experienced in India, and especially in the small-scale sector. Productivity thus can be increased by reducing or eliminating waste, or by better output per worker.

STANDARDISATION AND PRODUCTIVITY

S. K. SEN

So far we have looked at productivity from the angle of individual manufacturers. From the national point of view, productivity means the maximum utilisation of the resources. Where there is abundant supply of labour, at a comparatively less cost, production techniques from the productivity angle involve more input of labour and less input of machines. This involves the rationale of combining labour-intensive and capital-intensive methods in such a way as to maximise efficiency. In India, where capital is scarce, there is need of proper and efficient utilisation of capital.

Automation

Automation is a controversial term in the large-scale sector, and it is being debated as to what extent automation should be introduced. In the small-scale sector, in view of the smallness of operation, the impact on labour is not intensely felt. In fact, with greater competence acquired with the installation of imported machines, and the resultant increased production for wider markets, more employment is likely to be generated.

Cost and productivity, like the Siamese Twins, are inseparable, so much so that even if one of them is being referred to, the inference of the other by implication is unavoidable. This is so because each one is so closely interlinked with the other that neither has any independent *locus-standi*. Together they form a world of peaceful co-existence, wherein separation, though not entirely ruled out, is somewhat out of tune and meaningless. As the concept of productivity has been defined as the function of producing real goods and services in ever-increasing quantities through more efficient use of men, material, machinery and money, this rests solidly on the foundation of all cost, including selling and distribution costs.

About 90 per cent of the working capital of small-scale units is tied up in inventories. It represents 43 per cent of the capital assets of an industrial organisation on an average. Sales to inventory ratio is quite low in our country indicating low productivity. Material waste reduction is the largest field for cost reduction and improvement of productivity. Even a marginal improvement in materials productivity would make a significant contribution towards reducing overall costs, improving quality of the end product, and releasing productivity capital for more beneficial use, including plant expansion.

Waste Control

With the input remaining static, even going down temporarily due to import restrictions and/or other reasons, it is possible to improve productivity by preventing and controlling waste, or in other words increasing production per unit of input. Waste control is the *sine qua non* of increase in productivity.

To introduce waste control, the first thing to be done is to record each form of waste and analyse the cause and responsibility. This appears simple, but a majority of the small-scale units even do not have a suitable system for ascertaining the extent to which their resources are wasted. To a certain extent, wastage can be considered normal, and some is due to unavoidable and unforeseen circumstances. Small units should

initiate the introduction of a suitable system for continuous recording of wastage at all the operational points, and translating it promptly in terms of money. The effort towards waste reduction has double effect. Primarily it helps to increase profits by bringing down costs. Secondly, it helps to increase output.

The efforts to control one form of waste might clash with similar efforts on another score, and thereby lead to an impasse. Production management might decide, for instance, to maintain a reserve labour force and/or high coverage of stocks and stores for eliminating idle machine hours. The solution depends upon unbiased decisions.

Labour Productivity

While considering the low productivity of the Indian worker, it is necessary to know the factors like working conditions, and the tools and machines on which he works. The productivity of a worker has a direct bearing on these factors. The conditions in which the Indian workers work are not satisfactory—factories are dark and ill-ventilated, there is an absence of primary needs, and the worker besides is ignorant, illiterate, and exploited by the employer. These conditions reduce productivity and corresponding earnings.

A small unit may raise its labour productivity through work study and incentives. This could be carried only to some extent. Beyond that it calls for increased working capital in the form of stocks, work in progress, and debts.

The control of the human element in production is of primary importance. Salaries and wages constitute 25 per cent of the total cost on an average. The time wasted is the difference between the time paid and the production time. Abnormal idle time, as we all know, may be due to a number of reasons: want of material/tools/instructions, plant breakdowns, power failures, etc. Timely corrections on idle time is the first step to be followed up by scientific material and tool control, preventive maintenance of machines, and provision for other shop services.

The difficulty, next only to the inadequacy of the supply of raw materials and modern plant and machinery, is the paucity of finance. The Government has been strenuously attempting to augment the same through the State Bank of India, the State Financial Corporations, the State Directorates of Industries, and recently by nationalising the major commercial banks. All these financing institutions have been set up to generate the climate for extending credit facilities to the small-scale units. The share of total loans so far sanctioned/dispensed by these financial institutions to small-scale units has been not at all adequate. It is felt that with the nationalisation of commercial banks, and the development outlook recently injected, the share of loans extended to this sector is bound to increase substantially. With the availability of ample funds at the disposal of the small-scale units, they would be able to employ certain techniques which enhance productivity.

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NATIONAL productivity is the cumulative effect of several factors. Though productivity of each individual industry is a major consideration, the effectiveness of coordination in inter-industry relationship is no less an influencing factor. The former depends primarily upon the extent to which national interest is allowed to predominate the sectional interest in planning and production. In each of the above factors, wastage is a primary cause of loss of productivity. Lost efforts, lost motions, undue variety of materials and products, ambiguity of concepts are some of the forms in which wastage occurs in the industry. They represent to a large extent avoidable wastage which may be eliminated substantially by standardisation. The scope and utility of standardisation are not limited to any particular aspect of industrial activities as will be seen from the following discussion.

The functions of an industrial organisation in this context, can be grouped into three broad categories of management, engineering and purchase.

Management comprises planning, organising, directing, controlling and training. For discharging these responsibilities, management must be able to take decisions objectively, transmit them to different levels of supervision, assign responsibilities for execution and assess performance against the outlined objectives. These presuppose the existence of a stable organisational structure and a system through which management may function. For management to be efficient, the system it creates must be efficient too. In its operational characteristics, a system, like a machine, operates smoothly as long as its parts work in unison. In other words, a system must necessarily depend on standardised practices and procedures. Conversely, the common causes of inefficiency of a system are the results of non-standardisation of the practices and procedures which form the core of the system.

It is important to note the distinction between any practice followed repetitively and a standard practice. The real import of standardisation lies in the act of deliberately choosing a mode, method or practice after adequately analysing the situation obtaining at the moment and utilising all available knowledge to arrive at the best practicable solution of the problems involved. Standardisation, therefore, acts to concentrate each management practice on the method currently deemed best and to coordinate all practices into a harmonious whole.

It is generally not realised that standardisation holds the key to efficient management. The principles of standardisation are rarely observed in establishing management practices which more often than not bear the imprint of inadequate planning and coordination, and lack the precision and clarity of standards. The result is a continuous wastage of efforts in various forms, such as increase in field work in respect of management decisions and requirements; duplication of efforts due to overlapping or absence of responsibility; frequent appearance of bottlenecks requiring extra measures to clear them; and rejection and re-working from varying interpretation of work objectives and lack of control. The remedy lies in standardising the entire administrative set-up beginning with the organisational structure and allocation of staff responsibilities and covering even the simplest routines of administrative practices. This will not only remove the causes of wasted efforts but also reduce the normal work-load on management enabling the executives to spend more time and energy to perfect the administrative machinery for attaining higher productivity.

The term engineering used here includes all technical functions relating to production, such as, designing, manufacturing and quality controlling.

When a product is simple to manufacture and production continuous, productivity is understandably high. More time and efforts have to be spent as the product design calls for complicated production technique and production is interrupted by increase in variety. Both may be necessary, for all products cannot be expected to be simple, nor all industrial requirements can be met by a limited supply. Still, it would be pertinent to enquire for each organisation if the current products left no scope for simplification in design and reduction in variety.

The answer is rarely in the negative. Both complexity and variety exist to an unnecessary extent. The latter appears not only in end-products but also in parts and sub-assemblies and in the processes of manufacture. Unnecessary variety at any stage of manufacture lowers efficiency and the loss is not confined to that stage alone. It extends from the supply of raw materials and equipment to all phases of distribution and to the ultimate user. The user is not only faced with the resulting high prices, but often with related problems of non-interchangeability, delay in obtaining non-standard spare parts, increased stocks and unnecessary design and administrative work.

Simplification and standardisation provide the engineering tools for reduction of variety and complexity. Standardisation of parts, materials and tools leads to reduced inventory, easier purchase and more effective control of stores. As larger production quantities are generated by concentration of requirements, a stage is reached to justify the use of specialised equipment which require large capital investment but are capable of paying rich dividends in terms of increased productivity and reduced unit cost. Even without specialized equipment, fewer items permit more continuous production with saving in down-time costs on machines, and in time and efforts spent in preparatory work

required to switch production from one item to another.

Purchase Policy

The purchase policy affects productivity because modern manufacturing techniques depend more and more on standardised raw materials and supplies. When purchases are made with insufficient regard to standardisation, an element of uncertainty and imbalance in the manufacturing line are introduced. In general, non-standard materials and equipment affect productivity and may result in:

- (a) minor and major stoppages of work from failure of equipment, accident, etc;
- (b) excessive rejection and reworking;
- (c) additional inspection to eliminate defective products; and
- (d) increase in over-head charges for the above.

The cost of purchasing, handling and storing is a substantial proportion of the capital held in stock. To a greater part, this cost involves invariable expenses and is, therefore, proportionately higher for smaller purchase quantities. There is thus a scope of saving when fewer items are purchased in larger quantities. In addition, the work of ordering, receiving and stock keeping simplifies with bulk purchases and the same staff is enabled to handle larger volume of purchases thereby increasing the productivity of the purchasing department.

Product Standardisation

The purpose of production is to satisfy the needs of consumers. Fundamentally, therefore, the two must understand each other. But neither producers nor consumers try to limit the number or size of individual specialities or requirements. Besides, a producer is a consumer of raw materials, parts and equipment. There is thus a vastly complicated pattern of industrial relationship in which productivity would be necessarily low without effective coordination. Product standardisation establishes the required coordination in demand and supply of materials, parts, equipment and products.

Bringing together producers, consumers and technologists, it secures pooling of the knowledge and ex-

perience of the three groups in formulating the standards. It implies the highest common measure of agreement between differing interests, view points or objectives.

Since standardisation includes rationalisation of existing multiplicity of possible variations in terminology, quality, performance, shapes and sizes the effort is to arrive at the minimum number of variations which would economically and at the same time effectively cover all ordinary requirements. Finally it eliminates ambiguities and inaccuracies in concepts, and terms current in industry and trade and methods used in assessing quality and performance.

As a cumulative effect of all these it promotes national productivity. But it may be remembered that standardisation is a continuous process which should keep standards of technical advancement and permit the attainment of higher and higher productivity with refinement of manufacturing know-how.

Sales Policy

It is not uncommon to find that a manufacturer spreads his efforts over too large a variety of products. The state of affairs usually follows from the absence of a considered sales policy and from eagerness to secure as big a share of the current trade as possible, to cater to individual tastes and requirements and to emphasise the speciality of the product in comparison with similar products available in the market. The fallacy of such a practice is demonstrated by the fact that a minority of products often contribute the major share of the total sales income, indicating the wastage associated with sales efforts spent on the majority of unremunerative items.

In addition to the resulting increased manufacturing cost, the sales efforts spent on unpopular items go to enhance the price of the popular products. The possible loss of trade from refusal to satisfy the marginal customers' demand may be more than off-set by the competitive advantages gained by reduced selling and stock costs if products are limited to the more profitable items.

Any remedial measures by an individual organisation may appear un-

PRODUCTIVITY IN SELLING AND SALESMANSHIP

INDIA is today gradually switching over from a seller's to a buyer's market. Competition is becoming keener, and business organisations want "better selling". Proper training of the sales force would help in increasing sales, reducing selling costs and assist in developing a sales force which would produce the desired results. The field of selling has now become a highly specialised function, and a professional one, too.

The National Productivity Council has, since 1958, been conducting a wide variety of programmes covering a number of productivity techniques, including Marketing Management. In October last, it introduced a new five-day programme titled "Productivity in Selling and Salesmanship", with the main objectives of imparting knowledge and skills of the principles, procedures, techniques and methods of selling and salesmanship and creating an understanding of the various operations involved leading ultimately to customer satisfaction.

The first programme was held at Rajkot and, subsequently, it has been held at various centres including Batala, Dalmianagar, Madras, Tirunelveli, Coimbatore, Madurai and Tiruchirapalli. The response to this programme has been quite good and is indicative of the fact that managements are becoming increasingly conscious of the importance of having a properly trained sales force for achieving the best results.

attractive. Collective action through industries' associations and the national standardisation body should go a long way in stopping the loss of productivity involved. The remedial measures evidently are simplification and standardisation of end products.

TRAINING FACILITIES FOR SUPERVISORS

M. YOGA

PRODUCTIVITY has much to depend on trained and experienced supervisors. In highly industrialised countries these supervisors are usually recruited from experienced and skilled workers who have a fairly high level of basic education and comprehensive vocational training. Sophisticated selection procedures, such as psychological tests, group interviews, and patterned interviews are adopted in choosing suitable candidates.

In India, supervisors are often recruited from among university graduates or from technical training institutes, which provide limited opportunities for study and practical work in the field of supervision. Therefore, when confronted with the realities of work environment they feel uncertain of themselves. It is also found that they do not have the proper attitude towards practical work.

While the newly established industries draw a large number of their supervisors from schools and colleges, the older industries promote experienced workers to supervisory positions, who do not have the necessary basic education, breadth of knowledge and experience required for satisfactory performance at supervisory level. Therefore the need arises to give them suitable supervisory training. It is estimated that only 10 per cent of the supervisors in India have undergone adequate professional training.

However, during the last five years, an increasing number of senior managers have realised the need for training their supervisors. This awareness is the result of various economic pressures for more production and better efficiency. But the extent of training activities lags far behind the degree of interest shown in such programmes. Mas-

sive training efforts have not been made due to lack of initiative, finance, trainers, training materials, and training institutions. However, the growing demand from managements indicates a boom period for training schemes in the immediate future. In this context, timely action was taken by the National Productivity Council of India to launch a supervisory development scheme on a national scale during the Asian Productivity Year 1970.

There is a growing trend among the supervisory groups to form associations with a view to bargaining with the managements for better service conditions. In some organisations supervisors are members of the unions, and such membership makes it difficult for them to establish proper work relationships, particularly where several unions are active in the same organisation. This trend towards unionism of some kind has resulted in the managements paying increased attention to the problems and needs of supervisors. The supervisors also are making commendable efforts to deal effectively with a variety of specific work problems in spite of personal and organisational limitations. Most of them are keenly interested in learning current practices and developments in their respective fields.

It is estimated that there are 218 million workers, and about 4 million supervisors in India. The quality of performance of such a large group is bound to make a significant impact on the production of goods and services. Better supervisory performance gears up the level of efficiency and productivity with beneficial results to the organisation and the nation.

A study of the supervisors reveals that their jobs are becoming

increasingly difficult and frustrating. They generally feel that they are not receiving adequate support from the top management, that their authority does not match the responsibilities they are expected to bear and that the conditions of employment are not commensurate with their qualifications and performances. Managements have one set of expectations from the supervisors and the workers have a different view regarding supervisory role. This situation encourages supervisors to play a marginal role in the decisions and activities that effect their work group, and they consider themselves as "men in the middle" with minimum importance. This situation implies that training programmes need to lay greater emphasis on developing proper work attitudes in addition to organisational changes.

Some companies have established training departments to conduct training programmes for supervisors and managers. Senior managers drawn from various departments conduct these programmes which contain a large element of company information. The practice of company officers serving as trainers paves the way for mutual understanding and better coordination among different levels of management. But all good managers do not make good trainers. Therefore the quality and effectiveness of training sometimes suffers. Careful selection of trainers and briefing them are essential for ensuring success of the programmes. But this is not usually done due to lethargy or hesitation on the part of the organisers.

Some companies do not have full-fledged training departments due to paucity of qualified men. The training function is usually entrusted to the personnel department, and less frequently to the Technical Training Centre. Job-orientation programmes for supervisors are organised with the help of company personnel and training in broader aspects of supervision is entrusted to external agencies. There is a limited number of training institutions in India who offer specialised training services to supervisory personnel. The

National Productivity Council of India, the T.W.I. Centre, the Institutes of Management and the Regional Labour Institutes are active and prominent in this field. These institutions design and conduct special programmes exclusively for the employees of a particular company, in addition to organising general supervisory courses to which several companies depute their supervisors. The external training services have been found to be satisfactory, and available at reasonable cost.

Planning of Training Activities

It is a common practice with many companies to organise a large number of training programmes during certain periods. This hectic activity may be followed by a slump. Sometimes training is heavily concentrated in certain areas and for certain groups, which results in unbalanced and ineffective training. However, a few companies have started planning their training activities on a long-term basis which enables them to select participants and suitable programmes well in advance. These companies assess the training needs of their supervisors through discussions. Sometimes brief questionnaires have also been used to secure information. Training courses evolved on the basis of needs have a greater acceptability to the participants as well as the organisations. They stimulate active interest as the subjects included and the method of presentation are appropriate to the participants.

A large number of programmes are of short duration, lasting from one to four weeks. There are very few programmes of longer duration. This time-limit usually results in rushing through the various topics, leaving behind an impression in the participants that the treatment of the subject was inadequate. A remarkable degree of similarity is found in the contents and presentation of the programmes. A variety of subjects is usually included in the programmes either individually or in various combinations. The main emphasis is on supplying a large range of information. But programmes aimed at developing supervisory skill and proper work attitudes are extremely rare.

The lecture method is predominant in all training programmes. Discussion periods are interspersed with lectures to relieve the monotony and to enable participants to seek clarifications. It is a common practice to supply written briefs which contain a summary of information given out during the lecture.

Films continue to be popular with the participants and the trainers. About ten films, in English as well as in the local languages, have been produced in India and these have made a great impact on the audience. There is considerable scope for producing training films with local background and dealing with local problems.

Case studies are being used to some extent, and several volumes containing these have been published by different organisations. The Administrative Staff College of India has done valuable work in providing a large number of case studies which can be used in training programmes. Most of the cases, however, are of the narrative type. There is thus an urgent need to write up cases which can be used in a variety of ways.

A review of the present training methods in use in supervisory training courses emphasises the urgent need for large-scale preparation of training materials and aids. The number of specialist-trainers in the field of supervisory development being around 100, it may take considerable time to evolve a wide variety of case studies and to produce films, booklets, and practical exercises for use in training programmes.

Benefits of Training

Working time is lost when supervisors attend programmes during their normal working hours. The trainees and trainers invest their time, energy and money. But what is the return? Only a few organisations have any evaluation machinery for assessing the effectiveness of the programmes. These programmes are expected to yield only intangible results which may be assessed on a long-term basis. Evaluation is more difficult where objectives

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Pay Attention to them

The best studies on human relations are those which relate to the famous Hawthorne experiments. These experiments, though they relate to the industrial society of the USA, have an interest for us, in India, because the underlying assumption in the hypothesis relating to human relations is that the solution of industrial problems lies along the lines of developing an ethics adequate for a large-scale society of the sort that is developing in the wake of rapid industrial development. Some of the progressive people in the USA, mainly intellectuals and academicians—Prof Elton Mayo, Prof Whyte, and others—wanted to know what the truth was, and accordingly they set up a series of simple experiments, one of which is described below:

This experiment took place at a place called Hawthorne near Chicago at the plant of the Western Electric Co. The Professors selected a group of women workers whose reactions they wanted to observe regarding certain elementary phenomena, like lighting. They frequently changed the bulbs, sometimes increasing the illumination, sometimes diminishing it, sometimes only pretending to increase or decrease it through change of bulbs, while their candle power remained the same. They found that irrespective of the increase or decrease in illumination, irrespective of the fact whether such increase or decrease was real or imaginary, productivity increased.

The Professors were naturally puzzled in the first instance, because they expected the answer that productivity would increase up to a limit, with better illumination, and thereafter remain steady, and productivity would decrease with reduced illumination till a point of blank resistance was reached, because workers would refuse to work on the ground that they could hardly see. Actual experience led to a straight rejection of this hypothesis, and the emergence of another hypothesis which has played a powerful part in the progressive development of the industrial economy of the USA, namely, that no matter what you do on the physical front—within broad limits—people work better and are even prepared for sacrifices and adjustments—provided they are conscious that the people in authority are paying attention to them.

PRODUCTIVITY BOOM IN SMALL-SCALE SECTOR

S. VISVESWAR

IT is erroneous to presume that giant industrial enterprises and large corporations alone are the mainstay of the nation's industrial production. On the other hand, small industries, both modern and traditional, together contribute nearly 50 per cent of the gross industrial output. The number of small industries registered has increased from 59,000 in 1963 to 1,35,000 by December 1968. There are also a number of unregistered small-scale industries. Together these contribute in securing regional economic balance, which is vital for a planned economy.

The number of persons and the fixed assets an industry has to employ for adding unit amount to the gross national product, is a measure of its place in the national economy. It is interesting to note that the net value added per rupee invested in fixed assets was estimated to be the highest in the small industries sector, as can be seen in the table below:

In spite of the pivotal role of small-scale industries in the national economy on the basis of its contribution to GNP, the allocation of resources, particularly of the scarce category, has not been proportionate to the contribution of the small scale industries. For example, in the case of a key input like credit, only 6 per cent of the bank credit to industries was channelised to small industries while about 94 per cent was given to the large-

scale sector. Out of the total bank credit available in the country, large-scale industries received around 66 per cent, and small-scale industries less than 4 per cent, though the relative figures of contribution to the national income were 7 per cent and 7.6 per cent respectively.

Basic Objectives

The Industrial Policy Resolution, 1956, laid down the following basic objectives governing the development of the small scale sector:

- ...to create immediate and substantial employment opportunities at a relatively small cost;
- ...to meet a substantial part of the increased demand for consumable goods and simple producer goods;
- ...to facilitate mobilisation of resources of capital and skill which might otherwise remain under-utilised;
- ...to bring about integration of development of small-scale industries with the rural economy on the one hand, and the large scale sector on the other;
- ...to improve the productivity of the worker and the quality of small-scale industry products by placing greater emphasis on the adoption of improved methods of pro-

duction and the use of better machinery and equipment; and ...to ensure more equitable distribution of national income and a balanced industrial development in different regions, i.e. to lay down the basis for an essentially decentralised society.

Organisations, like the Central Small Scale Industries Organisation, the National Small Industries Corporation, the Directorate of Industries of State Governments, the State Bank of India and its subsidiaries, and other organisations have been set up to achieve the above objectives.

The National Productivity Council has been providing consultancy service in the areas of Industrial Management, Industrial Engineering, Industrial Relations, and Fuel Efficiency as well as training in the above fields. However, most of this service was utilised by medium and large-scale industries. The National Productivity Council was approached by the Madras State Industrial Estates Association to provide consultancy service to small-scale industries at special concessional sales. The Council conducted a survey of Guindy and Ambattur Industrial Estates in Madras City to determine the areas where the service was required, the type of specialists needed, and the amounts the small-scale industrialists were willing to pay for the service. The Government of Tamil Nadu, who pioneered the industrial estates in the country, were again in the lead in providing the subsidised consultancy service, and thus "the Consultancy Cell for Productivity Services" in small-scale industries was created. The Five-Year Subsidy Scheme approved by the Tamil Nadu Government started with an official subsidy of 60 per cent which tapers off to 20 per cent in the fifth year.

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	Net value added per Rs invested in 1963 (in Rs)	Fixed assets to contribute Rs one million to national income (in million Rs)	No. of persons employed to contribute Rs one million national income
Small Industries	1.10	0.80	480
Medium Industries	0.94	1.10	300
Large Industries	0.35	2.90	210

Shaping our minds Shaping our skills



to overcome the backlog of two centuries.

To propel our economy into the modern age, to provide the infra-structure for a rewarding and fruitful life for each one of us... this is the challenge the country faces. The world is changing and progressing faster than ever before, and we have little time to lose. Hindustan Steel is part of the nation's effort to usher in the modern age.

Our development must be planned and rapid, based on a nation-wide reorientation of our minds and skills on science and technology, in all fields of endeavour.

The rapid growth of the steel industry is imperative for the growth of the economy. As India's largest producer of steel, Hindustan Steel has undertaken the responsibility of

training a new generation of workers in the fast changing disciplines of steelmaking. Today, more than 2,000 workers, and hundreds of engineers are being trained by us not only to man our own steel plants but also to design, construct and operate those of the future.

As in industry, so in agriculture Hindustan Steel is helping the farmers to adopt new technology in the use of chemical fertilizers.

A backlog of centuries must be met with a new mind, new skills. In this lies our future.



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PRODUCTIVITY AND SAFETY

"The best way is the safe way, a safe job is an efficient job and an efficient job is a profitable job."

A. N. SAXENA

AN important aspect of technological development in recent times has been the growing awareness that productivity and fuller utilisation of equipment and plant capacity cannot be divorced from considerations of safety. In the earlier phases of industrial engineering, volume of production was the principal concern, and safety was considered separately, often at a much lower level of importance.

However, safety today is being given due cognizance in production planning, design and installation, both of machinery and the industrial plant. Safety devices are increasingly being built into the equipment at the design stage itself, rather than being super-imposed on it as an after-thought. Considerations of safety also influence plant layout, eliminating traditional danger-spots like dangerous conveyor devices, unsafe walking areas and poor lighting.

Very often we find that the causes of production trouble are the same as those of accidents. Improper piling of material, blocked aisles and the use of wrong tools all result in accidents as well as in loss of valuable production time. Accidents mar operating efficiency and all such interferences in the production chain throw the entire system out of gear. The various causes of accidents have to be viewed as symptoms of a deeper malaise, a malaise that means inadequate control over men, material and the processes of production.

In appreciating the magnitude of the problem some comparisons may help. In the world today preventable accidents cause more deaths than any single illness except cancer and cardio-vascular diseases. An ILO report published shortly after

the Second World War states that during the war industrial accidents in the USA and UK had killed more people than the war itself. A study of industrial accidents in India shows a rapid increase in the number of fatal and serious injuries involving disablement and loss of life. The index of accident rate in India has registered an increase from 100 to 240. During 1968 in the organised sector alone the number of injuries were as high as 239,689 and the number of man-days lost was 2,460,640. The frequency rate was 18.03 and the severity rate as high as 430.9.

There is no denying that our economic problems are urgent and we have to assign priorities. But any solution that overlooks human welfare is untenable. In achieving higher standards of living, we have to achieve, side by side, safer and healthier working conditions. Tangible losses from any neglect of safety include:

- 1) By withdrawing injured workers the management is forced to put untrained men on the job, which results in damage to machinery, wastage of material and delay in operations; all of which result in reduced production.
- 2) Payments towards compensation claims and insurance; cost of medicine, treatment and supervisory time; extra overheads.
- 3) Death and disablement mean permanent loss of trained skills to society; additional costs of training new men.
- 4) The fundamental motive in ensuring safety is humanitarian, to eliminate needless pain and suffering. The cost on this count is incalculable.
- 5) Lack of safety places a heavy burden upon society in general. The expenses incurred by the State in administering the services have to be paid for by society in the form of taxes.

Every accident that stops a man

from doing his normal work leaves the country just that much poorer. Of all the costs, the cost of human life is the highest. And we cannot put a value on human life. No formula can fix an injured man's compensation, based either on his past earnings or his future prospects.

Even though it may not be possible to establish precisely a direct relationship between safety and productivity, yet in an industrial establishment increasing productivity would almost certainly indicate the existence of an increasing element of industrial safety. A combination of low accident rate and high production can be maintained by ensuring safety of employees at all times.

In a study undertaken by the Opinion Research Corporation, USA two viewpoints were subjected to analysis: (a) The harder and faster people work, the higher the output and the greater the likelihood of accidents. (b) The greater the productivity, the lesser the chances of accidents. The second viewpoint has been found to be more correct. Some positive features that support this viewpoint are:

- 1) In an efficient and accident-free plant, there is greater cordiality between management and labour.
- 2) Since employee's morale is better, their responses also are warmer.
- 3) If operations are highly efficient and productive, not only the management, but the employees as well, see clearly the close relationship between output and safety.
- 4) Safety as a basic tenet is supported by the fact that so long as the threat of the "unexpected" lurks around, there cannot be any guarantee of efficient production.

In short, it will be meaningful to recognise that the best way is the safe way, a safe job is an efficient job and an efficient job is a profitable job.

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PRODUCTIVITY RISE IS DIRECTLY LINKED WITH GOOD INDUSTRIAL RELATIONS

D. P. UPADHYAY

PRODUCTIVITY has been defined as the ratio between the input and the output. For higher productivity the emphasis is mostly on reducing the cost and increasing the production, which depend to a great extent on the efficient utilisation of resources. But quality should not be sacrificed to achieve lower cost and more production. Thus productivity stands for lower cost, higher production and better quality. But even this concept has a lacuna. It does not explain the distributive aspect of productivity i.e. the benefit that should accrue to the common people. In a developing country real productivity rise could be judged in terms of better utilisation of resources for the production of those goods and services which are more in demand by the common people.

There is a significant difference between productivity and production. While production stands for physical output, productivity stands for the efficiency of utilisation of resources and thereby getting better results. No country can think of prosperity without productivity rise because it has a direct link with the standard of living of the people.

While dealing with the problem of productivity and industrial relations, we should try to understand how industrial relations can have a direct link with productivity rise. Good industrial relations on the side of the management mean taking interest in the betterment of the employees by offering proper wages, facilities, working conditions and treatment. Similarly, on the side of the employees, good industrial relations mean giving effective and willing cooperation to the management and the employer so as to achieve the objective of the industry or the organisation. If a good relationship is ensured from both sides, industrial harmony could be achieved without much loss of work or production. In such a situation people engaged in the industry work for a common objective without clash and conflicts which results in higher productivity.

Industrial relations do not simply mean labour-management relations but they should reflect in a sound system of working in industry or organisation. In fact, such a system should also ensure better distribution of gains of productivity.

Good industrial relations and industrial harmony, however, do not mean absence of conflicts or disputes. In an organisation where hundreds of people work together, the possibility of group differences, tension and conflicts cannot be ruled out. But what is expected by good industrial relations is that people should be prepared to settle these disputes peacefully in their own interest and also in the interest of the industry and the community. Such a desire could only be possible if people are inspired and highly motivated and have a sense of belonging to the industry or the organisation. This new approach is based on the theory of co-existence and a strong urge to ensure social justice through fair practice.

Conflicts of interests arise when the expectations of the management and the employees are opposed to each other. The employer expects that the workers will work hard, deliver the goods according to their plans and specifications, maintain production norms, work under discipline, prevent waste and ensure profit. The workers, on the other hand, expect better wages, security of service, promotion prospects, better working conditions, recognition, job satisfaction, a share in the gains of productivity and good human relations. There is nothing wrong in these expectations, but what actually happens is that while the expectations of one side are fulfilled to a great extent, that of the other side remain unfulfilled. One party starts enjoying the fruits of labour out of proportion. In fact, in the process of claiming rights and ignoring obligations, various forms of conflicts and disputes start emerging. Such a situation does actually exist and cannot be sidetracked or bypassed. Therefore, a frank recognition of conflicts of interests should be

considered a pre-requisite for the formulation of a sound industrial relations policy.

One should not forget that if there are points of conflicts, there are areas of common interests also. But these areas of common interests can be understood properly only when both sides realise that the interest of the industry and community are their first and primary obligations. A sound industrial relations system should recognise the areas of conflicts and prepare the ground for greater cooperation on areas of common interest. Some of these areas of common interest may be: (i) higher production; (ii) safe and healthy working conditions; (iii) proper training of employees; and (iv) stability and expansion of industrial units and organisation.

It can be safely stated that so long as workers and management recognise the needs of industry as vital and primary and subjugate their expectations and demands to these requirements, there is every possibility of developing good industrial relations. A correct understanding of the problems by the parties engaged in industry is necessary and this alone can help in industrialisation of the country which is the primary need of the time.

The State, the trade unions and the employees' organisations have to play a positive role in this direction. All our efforts towards modernisation, better supply of raw materials, adequate investment of capital, development of technical know-how and improved methods of management can, perhaps, increase productivity to a very limited extent and that too for a short while. If we want productivity rise on a substantial scale and on a continuous basis, then it is the skill, diligence and attitude of the persons in industry which have to be counted upon. The spectacular progress made by Japan and several Western Countries can be attributed to a large extent to the cooperation which people in industry have given for raising its productivity without causing work stoppages and loss to their industry.

THE WAY TO BUILD UP QUALITY CONSCIOUSNESS

B. ANANTHKRISHNANAND

CAN we produce quality goods in India? Shall we ever reach a stage where we will be able to take pride on the stamp 'MADE IN INDIA' marked on our products? It is said that in certain cases what is produced as the 'best' quality in India is comparable with the 'best' produced anywhere else in the world. But the sad fact is that the average quality of an Indian product is generally low; and there is too much inconsistency in the quality produced and put into the market.

Why is this so? The quality of the end product depends upon four M's namely Materials, Machines, Men and Methods. A dispassionate analysis of these four M's in the context of the conditions faced by the Indian industry today is of the utmost importance.

It is true that, to a great extent, considerable difficulty is being experienced by the Indian industry today to get regular supply of good and consistent quality of raw materials at low costs. It is also a fact that the Government has either direct or indirect control over most of the indigenous as well as imported basic raw materials. Granting that there exist problems with our raw materials, and that we are 'facing the wall', can we take a complacent attitude and hold the consumer at ransom because it is still a "sellers' market" for many of our products? On the other hand, it should drive our management to seek new techniques of modern scientific management, such as value engineering, selective controls on inventory, modern approaches in purchasing, SQC techniques applied during manufacture, etc.

We cannot just copy the proces-

ses and technical know-how from other countries where the raw material conditions are entirely different. Here we shall have to look critically into the product design itself to start with, then carefully formulate standards for the raw materials used, improve 'Vendor-Vendee' relationship, and finally increase the reliability of the processes by evolving and adopting suitable modifications in the processes, and use devices (tooling, gadgets, etc.) to counteract the variations found in material quality and better controls exercised to build quality into the product.

Machines and Manpower

Choice of proper machines to ensure that they will be capable of maintaining the precision and accuracy needed is a part of pre-planning by the management. Operators are to be properly trained to acquire the skill and confidence to produce good quality goods, and operate the machines competently paying due attention and care to maintain its performance and efficiency. Preventive maintenance should be given equal importance along with production planning. There is also a greater scope for developing further our ancillary and small-scale industries to derive the benefits of specialisation and cost reduction.

As regards manpower, the labour cost in India was at one time supposed to be one of the lowest in the whole world. It may not be true today. Had it been so, it would have been easy to compete with the prices in the international market? Secondly, do our workers lack morale and discipline? Could the onus of responsibility for creating this

condition be entirely due to external influences, political interferences and strong unions?

To be honest, management failures are largely the basic cause for the unhealthy conditions that exist today. Poor management, which adopt the divide and rule policy, 'buy' the union leaders and try to overcome their basic weakness by adopting short-cut methods such as introducing incentives without prior standardisation of methods, and workload studies and wage fixation 'on whims and fancies' rather than through job evaluation or direct negotiation with the unions, thereby weakening the first line supervision.

The remedy lies in using scientific selection techniques to hire persons with proper aptitude and background for the jobs they are to be trained in. The next step would be to impart good induction training and see that they achieve the necessary skill and ability, and attain the desired degree of excellence both in performance and in output before the probationary period expires. One cannot buy loyalty, but only good human relationship induces dignity of labour, pride of workmanship, and a sense of belonging. In this regard, a policy which is 'fair but firm', and frankness and straightforward dealings will help in creating mutual trust and better understanding between management and employees.

The social responsibility of our management is great-particularly because of the lack of education among the masses. The top management should themselves be quality-minded before they can inculcate

APPLICATION OF 'PERT' TO PLANNING AND EXECUTION OF PROJECTS

R. S. GUPTA

PROGRAMME Evaluation and Review Technique (PERT) or Critical Path Method (CPM) is now well recognised as a powerful tool of planning, scheduling, and control of projects.

Around 1964, only a handful of organisations made use of PERT, and its application was mainly restricted to construction projects and maintenance planning. Today, the number of organisations using PERT has increased considerably, and its application has made inroads into a variety of situations, like, planning of syllabi for composite courses, closing of annual accounts, cost reduction programmes, distribution planning, exploration of minerals and mines development, development of new products, and installation and commissioning of new plants.

PERT should not be considered merely a network diagram with critical path marked on it. The fact is that it is only a starting point; its application should ultimately lead to the development of a detailed working plan and translation of the same into a calendar schedule, facilitate timely review and control of the plan, and finally help the management in the evaluation of alternative decisions which are often required to be taken during the execution stage of the project for its timely completion. Where its scope and limitations are properly understood and appreciated, the management has realised full benefits from PERT application, and it has, particularly, paid richer dividends in large-size projects of research and development and installation of new plants.

To the management, PERT renders valuable assistance in many directions in respect of the planning and execution of projects. The network process imbues disciplined thinking in the management to define all activities involved in the project, and plan their execution in the order it *must* be done rather than the order in which it *could* be done. It enables the management to resolve

the problems on paper before they actually occur in the physical plane. Preparation of a network requires the cooperation of all those who are responsible to supervise or to do the work. This brings about better coordination among the different wings of the organisation.

A network model of a medium-size project may involve around 300 activities. The critical path approach establishes that only 10 per cent to 20 per cent of the total activities constitute a critical path, and would be most important from the standpoint of timely completion of the project. This, therefore, lends to the well-established principle of management by exception. That is, the person in charge of the entire project need not get himself bogged down with all the details, but keep a watch only on the activities along the critical path, and such of those which might eventually become critical at the execution stage on account of delays.

Calendar Schedule

In the initial planning stage itself, it is imperative to translate the network diagram into a calendar schedule. PERT calendar schedule shows the relationship between critical path and sub-critical paths, and in this process it also indicates the float or spare time available on sub-critical paths. The float available on sub-critical paths must be thoroughly analysed as it often leads to expediting the project schedule and levelling of resources with a view to effecting saving in direct material and labour costs.

More often than not, the project completion dates arrived at from initial planning are found unacceptable by the management, and invariably it means crashing of the project duration. Even otherwise, the management within its right, is always desirous to complete the project at the minimum possible time, whether it be an aircraft maintenance, development of a new product, or installation and commissioning of

a new plant. PERT calendar schedule becomes a valuable aid in crashing the activities along the critical path and crashing those first which cost least. Through the least-cost curve method, it is then possible to determine an optimum project duration at a minimum cost, by taking three cost constituents—direct, overhead and penalty costs.

Once all the factors—trading off resources from the float areas to the critical path for shortening the project duration, levelling of resources for ensuring their effective deployment and utilisation, and cost considerations for optimising the project duration—have been thoroughly analysed, the PERT calendar schedule is appropriately revised which then becomes an aid in scheduling the commencement of various activities and controlling their progress from time to time.

In large-size projects there is every likelihood of some activities being delayed at one time or the other. The PERT calendar schedule helps the management in decision-making in these situations. Should the subsequent activities along the path be expedited in order to adhere to the scheduled date? This action will not be called for if sufficient float is available along the path. On the other hand, expediting would be necessary if it is going to delay the project completion date, and in such cases PERT will aid the management in arriving at alternative decisions and evaluating the economics of each.

Proven Worth

PERT has already proved its worth in rendering valuable assistance to the management to complete projects ahead of schedule. For instance, it was possible to complete a building construction in 59 weeks as against the target date of 75 weeks; overhaul a sugar plant in 16 weeks as against the estimated time of 26 weeks; and overhaul a vehicle in seven days

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PRODUCTIVITY & PROFITABILITY STUDY OF A RAILWAY COOPERATIVE

S. DANDAPANI

A salary earners' credit cooperative society among the railway workers in India has been rendering silently some useful service to the Railway community for over 60 years. From a humble beginning, the society has been mobilising deposits through thrift and making them available to the needy members by way of loans at low rates of interest. The society has a membership of 1,00,000 and its assets exceed Rs 110 million (practically from its own sources). It sanctions over 30,000 loans every year for varying purposes. The credit cooperative is a shining example of what "self-help" and "mutual help" can do when employer and employees cooperate. The contribution of this society to the Industrial Relations between the management and staff has been substantial.

During the past 12 years, its membership rose by an average of 2,000; its share capital by Rs 6.34 lakh, and assets by a little over Rs 50 lakh per year.

In a wage earners' cooperative, the members are motivated by the desire to "borrow" which can be seen from Table I.

The number of members who have not borrowed during 1968-69 is 8,276 or 8.23 per cent of the total membership.

The deposit mobilisation during this period has been as in Table II.

It is creditable for the society to have reduced the rate of interest on loans from 7½ per cent to 6½ per cent since 1959-60—particularly when the interest rates have been going up considerably in the country during the last 10 years. The rate of interest is charged on the diminishing balances.

The society has allowed during this period a flat rate of 4 per cent on compulsory thrift deposit, 4½ per cent to 6 per cent on fixed time deposit and 3½ per cent on savings deposits.

A study of the deposit-interest

pattern reveals that the growth of deposit under "compulsory thrift" has been advantageous to the society, and has helped to stabilise the rate of interest on loans at 6.75 per cent.

Unlike a commercial bank which may demand the maximising of interest on investments and minimising of the same on deposits, a cooperative credit society pays the maximum interest on deposits and charges minimum interest on loans granted.

The investment pattern of the society in the last 12 years reveals a gradual increase in the investments of the Central/State Cooperative Banks and other securities. The investment in Government securities has, however, come down. This has been necessitated by the pro-

visions of the Banking Regulation Act.

The increase in the investment in the banks, etc., has reduced the available capital for loaning operations and, therefore, the percentage composition of the loans in the total amount available for investments has been progressively coming down from 93.5 per cent in the year 1956-57 to 88.1 per cent in 1968-69. The percentage composition of the interest in the total interest on account of loaning operations has also come down during this period from 96.5 to 85.9 per cent.

For reasons of "security" a credit cooperative has to maintain 28 per cent liquidity on one hand, and still remain answerable to its

TABLE I

	No. of members	No. borrowers during the year	Total number of borrowers at the end of year
1956-57	68,260	27,144	62,000
1961-62	83,562	29,018	75,000
1966-67	95,754	28,445	86,000
1967-68	98,950	29,722	90,000
1968-69	99,726	30,713	91,000
Index of growth 1956-100	146.3	113.2	146.0

TABLE II

	Compulsory thrift deposit	Fixed time deposit	(Rupees in lakhs) Savings Deposit	Total
1956-57	90	192	71	353
1961-62	210	200	96	506
1966-67	431	165	100	696
1967-68	491	149	103	743
1968-69	561	147	101	809
Index of growth 1956-57-100	623.6	76.2	142.5	228.6

members for the productive efficiency on the other. In consideration of the special position of a cooperative where the "lender and borrower" is combined in one and the same person, the Reserve Bank has allowed relaxations assuming "self-regulation" in place of "regulation" by the Reserve Bank.

In terms of the recent orders of the Reserve Bank of India, a salary earners' cooperative credit society may be able to enrol non-members as nominal members, and will thus have the option to get out of the Banking Regulation Act.

The need for getting out of the Banking Regulation Act in respect of most, if not all, of the salary earners' cooperative credit societies stems out of the twin objectives: (a) the meagre resources of the employees' savings should be put to the greatest use for ensuring optimum returns, and (b) all investments should be on loaning operations to meet the credit requirements of the employee-members.

This particular society has already taken a decision to amend the bye-law with a view to enrolling non-members as nominal members so that it can get out of the Banking Regulation Act.

The society has reached a take-off stage adding share capital and working capital at the rate of five million rupees every year. As a result of the "professionalisation" and "socialisation" attempted by the society, it is admirably in a position to diversify its business operations beyond the frontiers of 'thrift' and 'credit' by dealing with consumer durables, such as gramophones, bi-cycles, radios, refrigerators, scooters, in which it may be able to invest the minimum capital, and obtain reasonable returns.

OUR AGE

When the history of our age is written, I think it will record three profoundly important technological developments: nuclear power, which tremendously increases the amount of "energy" available to do the world's work; automation, which greatly increases man's ability to use "tools"; and computers, which multiply man's ability to do "mental" work. Some believe that the computer will bring the greatest benefit to man.

—Ralph J. Cordiner.

ORGANISING PRODUCTIVITY DEPARTMENTS

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The personnel recruited must have a comprehensive knowledge of all productivity techniques. They should have specialisation and sound experience in at least one discipline.

Specialisation in depth in some facts of that discipline, capacity for clear, logical, and creative thinking, unquestionable integrity, personal acceptability, infective enthusiasm, patience and perseverance, tact and humility, and good verbal facility and written expression are the other qualities required of them.

On the appointment of the head of the productivity department and a skeleton staff of specialists, the nucleus of the department will have been established. The staff must be given reasonable time and ample opportunity to familiarise themselves with the organisation and the work force. They should be encouraged to conduct appreciation programmes and short vestibule programmes, at all levels, to explain productivity potential. This process of familiarisation and propagation might take around two months. Meanwhile, the physical establishment of the department, recruitment of additional staff, and arranging for their training should be well under way.

Labour Policy

The management, in consultation with labour leaders and representatives, should formulate a policy on the following issues:

- Types of financial incentive schemes;
- The level of performance at which incentive earnings should commence;
- The gradation of incentive earnings till the normal level of performance is reached;
- Wage and bonus guarantee during initial stages of installation of a new process, taking into account the time required by the operators to acquire new skills, get habituated to the new method, and regain their normal level of performance;

(v) Procedure and conditions for re-studying a process, the 'work content' or 'time' for which had been previously established;

(vi) Guarantee against redundancy or retrenchment as a result of the application of productivity techniques; and

(vii) Procedure for negotiation in cases of disputes or difference of opinion arising out of the application of productivity principles.

During the initial phases, management would be well advised to sponsor projects that are small in scope so as to infuse confidence in the staff of the department. Short-term studies which would yield quick results should be preferred to long-term studies, especially during the first few months of the inception of the department. Some studies that would improve the working, and environmental and motivational factors should be taken up at early stages. The subjects selected for study should be such that they not only progressively increase the confidence and experience of the productivity staff, but also enlist the support of the work force for the productivity drive.

Productivity is not something that can be achieved overnight. A lot of hard and sustained effort has to be put in before the results become apparent. No productivity department could, be deemed to be well-established unless it has functioned for a minimum period of two years.

THE BEST EXECUTIVE

The best executive is the one who has sense enough to pick good men to do what he wants done, and self-restraint enough to keep from meddling with them while they do it.

—Theodore Roosevelt.

THE RAILWAYS : A Case Study

L. A. NATESAN

TRANSPORTATION industries make huge demands on economic resources. They illustrate quite clearly many of the problems connected with improvement of productivity. Labour, capital and organisation in these industries result in producing a volume of transportation, and productivity in transport industries means that this is susceptible to increase by a more efficient ordering of the different factors. Of the different forms of transport, the Railways by reason of their longer history and, therefore, greater experience and importance disclose the interrelationships of the different factors more clearly than the others. The magnitude of their operations is such that from the very beginning the railways have had to be sensitive to cost-consciousness and improved productivity.

A brief reference may first be made of the significant trends in recent years in regard to labour. In some of the technologically advanced countries the number of railway employees has shown a steady and substantial decline, as may be seen from the figures given in Table I.

The technologically progressive countries indicate rather contrary trends. The railways of the USA,

UK, France, and West Germany disclose a pronounced decrease in the number of employees during 1968, as compared with 1950. The Italian Railways have remained more or less stationary. The Japanese Railways record a moderate increase. The Indian Railways have shown a considerable rise in the number of their employees.

The causes that have led to the decline in railway employment in both the USA and the UK are largely connected with the redundancy of facilities owing to the development of competitive transport. This is reflected in the demand in both countries on the part of the railways managements to abandon railway lines which have ceased to attract traffic adequate to make them pay their way. This has been conceded and action subject to public convenience has been allowed to be taken. The problem of surplus staff has also been accentuated by the effects of the adoption of new technology, such as steam being replaced by diesel and electrification, centralised traffic control, introduction of electronics in marshalling yard operations, extension of automation, longer trains, greater train speeds, larger-capacity wagoons, and heavier wagon loads. It should be noted

Table I

No. of employees on Railways in certain countries for select years (in 000s)

	1950/1	1955	1960	1965	1968
United States	1,221	1,058	780	640	590
United Kingdom	605	563	515	365	296
France	443	369	354	359	304
West Germany	538	486	455	438	383
Italy	172	159	164	188	168
Japan		443	448	462	470 (1966)
India	914	983	1,154	1,319	1,363

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that these developments have contributed to a far larger volume of traffic being handled, indicating a more than proportionate increase in the per capita productivity. This has been made possible because of the large investments made in the industry

The output of the railways consist of freight and passengers carried over specific distances. It is difficult to express the two different types of traffic in the form of a single unit for comparison. Taking a tonne-kilometre and a passenger-kilometre as roughly equal as traffic units, the number of traffic units moved per employee on the open line worked out to 178 in 1968-69 as compared with 122 in 1950-51. The figures relating to certain intervening years may be seen in the table below.

Table II

Traffic units moved per employee

Traffic units (000)

1950-1	122
1955-6	121
1960-1	147
1965-6	164
1966-7	167
1967-8	172
1968-9	178

(One traffic unit; One-passenger kilometre/ tonne kilometre)

Too much, however, should not be read into these figures as the comparison of the recent figures with the earlier ones does not make allowance for the tremendous increase in the suburban passenger traffic. The labour in handling this is quite different from that involved in the long-distance passenger traffic. The number of suburban passengers who were rather less than a third of the total in 1950-51 and were 417 million increased by 160 per cent to 1,084 million by 1968-69, almost one-half of the total. The passenger-kilometres of this traffic went up from 6,603 million to 19,515 million or by 195 per cent during the period.

The train-kilometre and the gross tonne-kilometre afford two other

indices of labour productivity. The number of staff per one million train-kilometres has come down from 3,144 in 1950-51 to 2,829 in 1968-69. The ratio of staff per million gross tonne-kilometres has dropped over the same period from 5.65 to 3.50, as may be seen from Table III.

Table III

No. of staff per million train-kilometres and gross tonne-kilometres

	No. of staff per million	
	Train kms	Gross tonne-kms
1950-1	3,144	5.65
1955-6	3,024	5.02
1960-1	2,908	4.11
1965-6	2,882	3.72
1966-7	2,902	3.74
1967-8	2,881	3.67
1968-9	2,829	3.50

These figures point definitely to an improvement in productivity on the railways from the point of view of the labour employed.

A different approach to productivity on the railways is that considered from the extent of the use to which the physical assets in the industry are put. This takes into account the contribution made by labour, the investment in the undertaking, and the role of the management. It is also necessary to add that this type of assessment has been widely used to measure the productivity of the different operations involved in transportation with a view to instituting measures to maintain and progressively raise productivity. Table IV sets out the comparative figures of sixteen different factors of operating efficiency, relating to the equipment, its utilisation, speed, consumption and ancillary operations, on the broad and metre gauges of the Railways for 1950-51 and 1968-69. The factors are self-explanatory. The first three items of the Table relating to the serviceable proportion of the total stock, indicate that the work of maintenance of locomotives and wagons during the nineteen-year period has recorded improvement. Under passenger vehicles there has been deterioration in

Table IV
Operating performance during 1950-1 and 1968-9

	Broad gauge		Metre gauge	
	1950-1	1968-9	1950-1	1968-9
Percentage of serviceable locomotives	81.05	85.90	82.26	87.7
Percentage of serviceable wagons	92.72	96.22	91.36	96.14
Percentage of serviceable passenger vehicles	85.83	85.73	91.00	88.17
Engine-kms per engine-day (in use) passenger	249	276	211	231
Engine-kms per engine-day (in use) goods	150	200	140	160
Gross tonnage per goods train	1,058	1,510	435	730
Net tonnage per goods train	489	737	185	356
Wagon-kms per wagon-day	62.3	72.7	50.2	59.3
Net tonne-kms per wagon-day	710	905	304	503
Gross tonne-kms per goods train-hour	16,409	24,318	5,677	9,535
Net tonne-kms per goods train-hour	8,590	13,156	2,884	5,316
Punctuality of passenger trains,	79.79%	83.41%	71.43%	85.61%
Kgs of fuel per 1000 gross tonne-kms (goods)	45.5	44.5	56.3	54.2
Kgs of fuel per 1000 gross tonne-kms (passenger)	53.3	57.4	64.9	59.6
Shunting operations per 100 kms-passenger and proportion of mixed	6.13	7.11	6.34	7.75
Shunting operations per 100 kms goods and proportion of mixed.	39.8	35.3	40.0	38.0

both gauges. Locomotive utilisation as reflected in the engine mileage per engine day exhibits a better performance. The utilisation of trains and wagons reflects in their respective indices—gross tonnage per goods train, net tonnage per goods train, wagon kilometrage per wagon per day, net ton kilometrage per wagon per day—the same trend. The speed of freight transportation is indicated by the gross and net tonne-kilometres per goods train hour. Here also the same advance in productivity is to be observed. The percentage of punctuality of passenger trains has shown improvement on both gauges, but unpunctuality to the extent of 14 to 17 per cent can hardly be considered satisfactory. Fuel consumption has recorded a small improvement on the goods services and passenger services on the metre gauge. But the broad gauge passenger services have disclosed a

deterioration. Under ancillary operations, the goods services have achieved an improvement, but the passenger services have suffered a setback.

Each of the different operating averages just considered tells an instructive story of the inputs and outputs of various operations in a far-flung organisation, such as the efficiency of the workshops, track maintenance, the morale and *esprit de corps* of the personnel, effectiveness of supervision, calibre of leadership, quality of management and cooperation of industry and trade.

BUREAUCRESE : A NEW LINGO

EVER since somebody invented bureaucracy, countless people have gained in reputation by criticising the way it functions. In New Delhi, the seat of federal bureaucracy, someone had even the imagination to write and produce a play called "Under Secretary". Even as a jibe, the men (and women) of the Fourth Estate have heaped much ridicule on the bureaucrat who, being in the business called Administration, swallows much more. But, none has so far looked into the silent transformation he has brought about in the communication process that runs through the tangled mesh of notes and files. Decades of usage has resulted in the birth of a new lingo, the *bureaucrese*, which everyone in the game has to master, not just to carry on the routine, but quite often to obstruct it. So, often the best way of not doing a thing is to have recourse to such terminology which defies comprehension and delays action. To an outsider an expression like "P.U.C." may at best mean Pre-University Course or something much more funny. Or, a comment like "Pl. put up" may be quite embarrassing for a stranger who is not accustomed to putting up with things like these. However, those who go to the Sphinx must learn to divine the oracle. Similarly, those who are in the Establishment have necessarily to learn the art of bureaucratic camouflage.

A contemporary of ours in the United States has tried to decipher the hidden meaning of some of the expressions of "Bureaucrese" and come out with quite a few amusing home truths. We hope our readers will enjoy them:

Channel: The trail left by inter-office memos.

Clarification: Fill in the background with so many details that the foreground goes underground.

Conference: Place where conversation is substituted for the dreari-

ness of labour and the loneliness of thought.

Consultant (or Expert): Any ordinary guy who is more than 50 miles from home.

Coordinator: The guy who has a desk between two expeditors.

Give someone the picture: A long, confused and inaccurate statement to a newcomer.

Give us the benefit of your present thinking: We'll listen to what you have to say as long as it doesn't interfere with what we are planning to do.

Let's get together on this: I'm assuming you are as confused as I am.

Meeting: A mass mulling by master-minds.

Note and initial: Let's spread the responsibility for this.

Programme: Any assignment that cannot be completed by one telephone call.

Reliable source: The guy who told the guy you just met.

Reorientation: Getting used to work again after your vacation.

See me or let's discuss: Come down to my office; I'm lonesome.

To expedite: To confound confusion with commotion.

To implement a programme: Hire more people and expand the office.

To negotiate: To seek a meeting of the minds without a knocking together of heads.



IGNORAMAN

Wants to Know

Whether

Elections are held
in Feb/March to herald
the hot weather

Under active consideration: We are looking in the files for it.

Under consideration: Never heard of it.

Unimpeachable source: The guy who started the rumour originally.

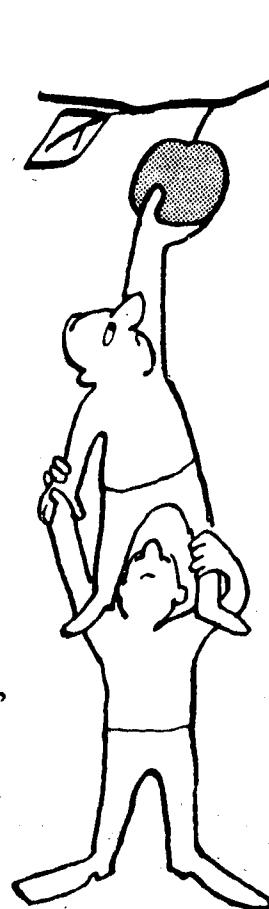
We are making a survey: We need more time to think of an answer.

Will advise in due course: If we figure it out, we'll let you know.

These expressions probably are not confined to Public Sector alone. Some may be the favourite of the Private Sector too. At least there is this common feature between the two sectors that it is the office of the head of the organisation that communicates and not the head himself. Hence this tailpiece from a sufferer:

"Every time I call one of my colleagues and get a response from a throaty secretary like, 'This is Howard Taylor's office. May I help you?'; I'm tempted to reply, 'Yes this is Roger Duncan's typewriter. May I speak with Mr Taylor please?'"

We help our workers to help themselves.



We think our workers are entitled to more than a fair deal. So, in addition to job security, they enjoy many other benefits, a number of welfare amenities.

But this is not all.

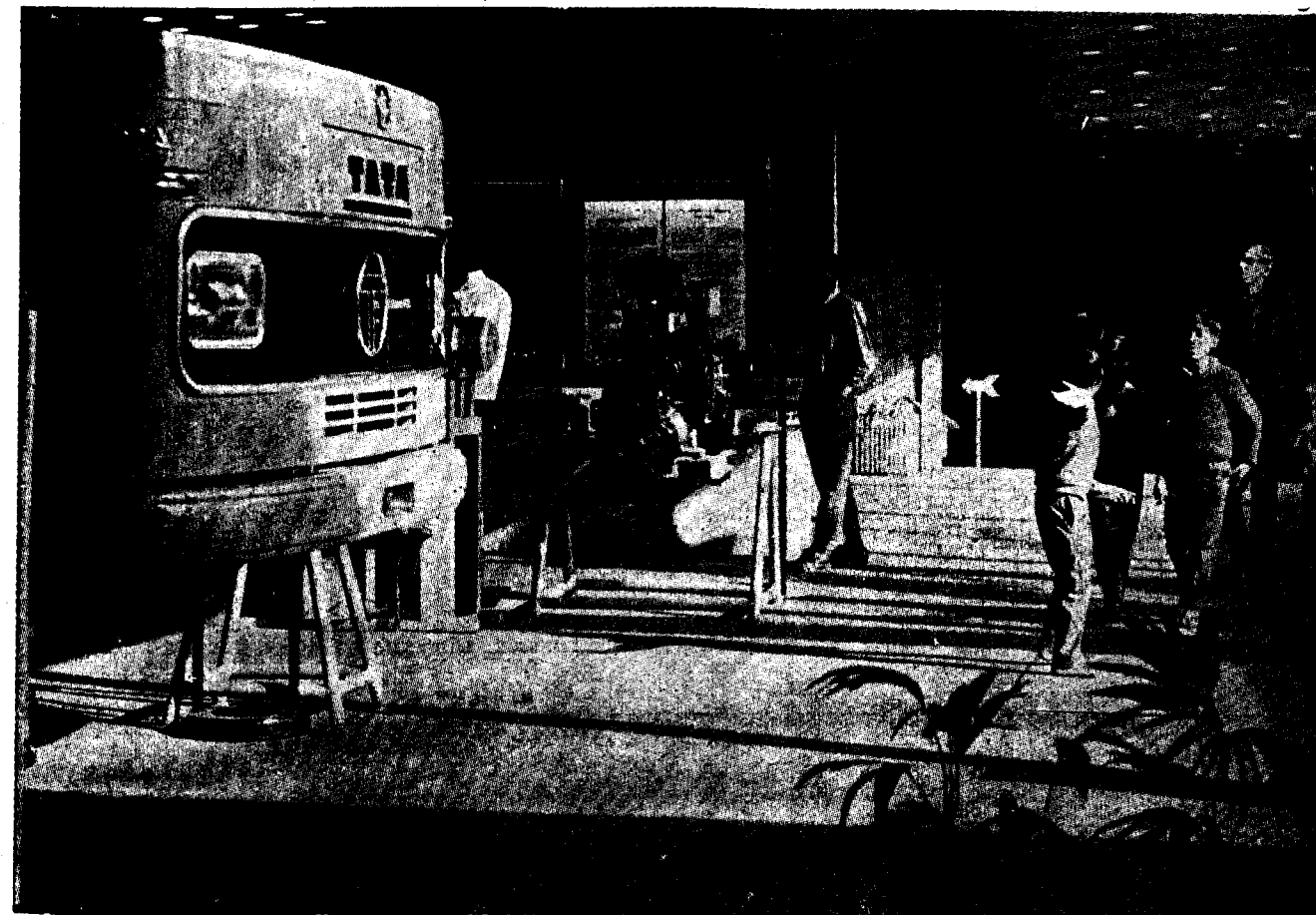
We also recognise the workers' need for self-development by offering higher job opportunities.

To make promotions impartial, we have qualifying trade tests, for which free training is offered at our Technical Institute at Jamshedpur. Here, 10,000 have received technical training so far.

Our strength is in our people as much as in our steel.

TATA STEEL

TN,2015 A



THE STORY OF AN INDUSTRIAL GIANT

A Yojana Staff Report

By

SIDDHARTHAN KARIYAL

Photographs:

T. S. NAGARAJAN

In the heart of New Delhi has sprung up in the last few weeks a glittering spectacle, the "Tata Exhibition", being held in the Capital for the first time. An expansive showpiece, the exhibition fully mirrors the composite image of the House of Tata.

FOUNDED 103 years ago as a small trading company, the House of Tata today is one of the largest, and by far the most prestigious, private industrial enterprise in India. With a complement of 154,000 employees and an investment amounting to over Rs 543 crore, it turns out goods and services worth Rs 487.5 crore a year, 6 per cent of the Country's total industrial production. The export earnings of the Tata group of industries have risen 42 times, in the last six years; from Rs 52 lakh in 1963-64 to Rs 23 crore in 1969-70.

The group includes nearly 100 companies and nine Charitable Endowments. Pioneering and innovative in almost every field of venture, Tatas' produce iron and steel products ranging from simple agricultural tools to locomotives, rails, trucks and earthmoving equipment; textiles; electric power as well as electrical equipment such as refrigerators, air conditioners, radios, stereo sets, television signal

generating equipment, giant circuit breakers, generators and control panels; cement; industrial chemicals; canned foodstuffs, protein isolates; edible oils; vitamins; soaps and detergents. They also run research and scientific institutions, hotels and consultancy and other services. So much for the bare facts.

The Tata story is much more. It is a saga of courage and dedication, of perseverance and plain man-to-man business honesty; qualities bequeathed by a great founder and one of the greatest entrepreneurs of all time. It is the story of man's ability to triumph over scepticism and great odds. It is also the story of the abiding loyalty and discipline of the best human material available in this country, mobilised and organised to the specific task of giving India a sound industrial base.

It is a continuing story of India's economic regeneration.

Visionary

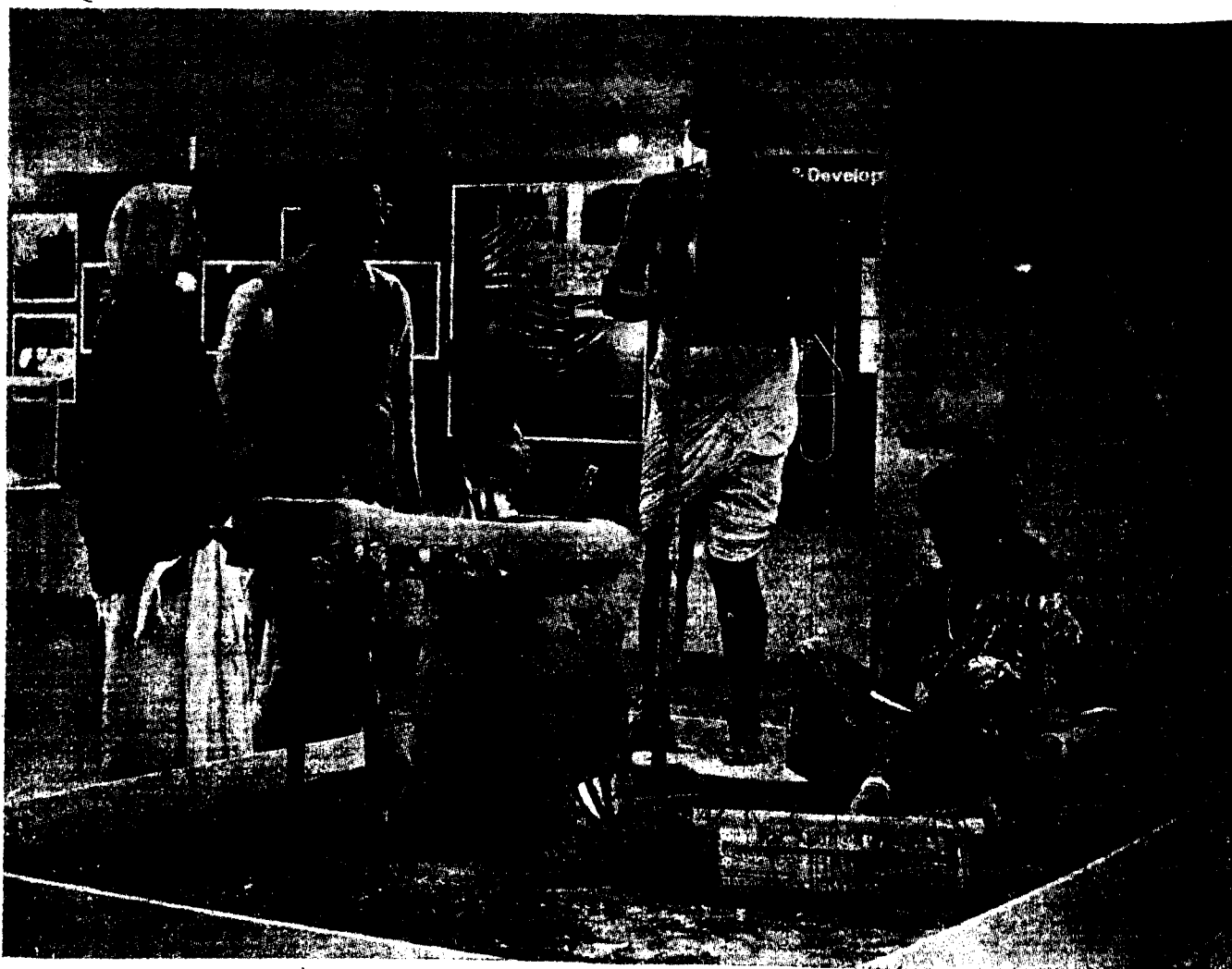
The man who started it all, Jamsetji Nusserwanji Tata, was a great visionary, but his vision was sharp and practical in every detail. Way back in 1902 he wrote to his son, "be sure to lay wide streets planted with shady trees, every other of a quick growing variety. Be sure that there is plenty of space for lawns and gardens. Reserve large areas for football, hockey and parks. Earmark areas for Hindu temples, Mohammedan mosques, and Christian churches." As Jawaharlal Nehru said in a memorable tribute to the founder of this great industrial enterprise, "Jamsetji formed himself

into some kind of a Planning Commission, and began, not a five-year plan, but a much bigger plan, long before we had formed our Planning Commission and the Five-Year Plans."

Throughout, the Tata record has been one of performance. There is the story of a high railway official, and Englishman, who promised to eat every pound of rail produced in India. Jamshedpur went on to manufacture not only rails, but high-grade steel for the Howrah bridge, and, during the Second World War, bullet-proof steel for Montgomery's tanks in the Sahara.

The spacious wooden structure housing the New Delhi exhibition not only mirrors the gigantic industrial empire that bears the name of

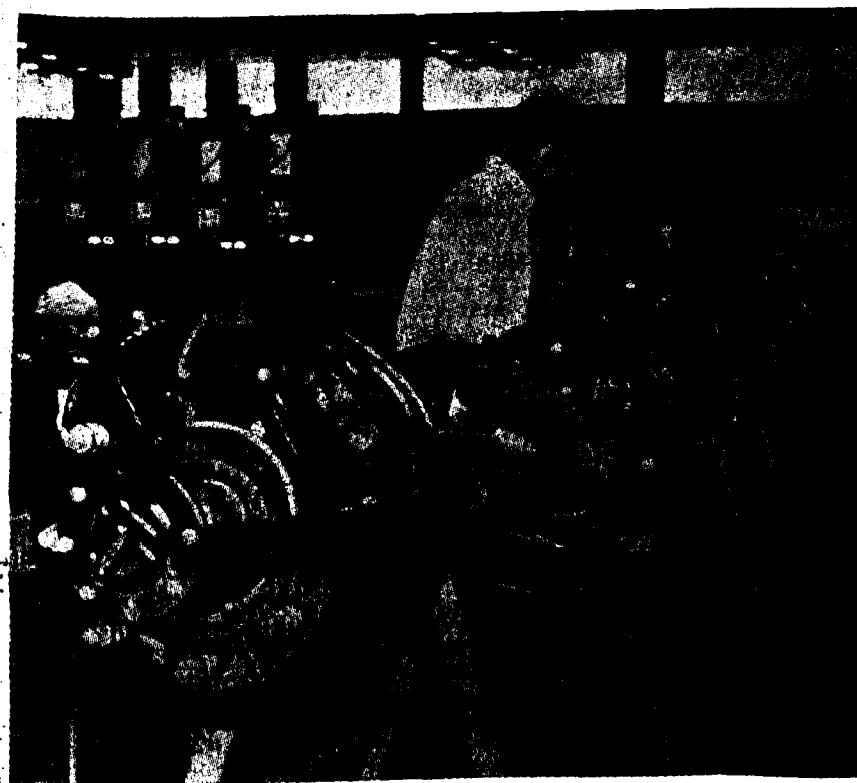
A throwback on India's 3,000-year old steel heritage: A clay image of adivasis at their steel-making furnaces. Displayed in the background are agricultural tools made by Agrico, a Tata subsidiary.



Tata, but takes us back several decades when this great enterprise was born. Among the displays are some rare old photographs of Sakchi, the Adivasi village in Bihar, which eventually became the industrial township of Jamshedpur, in memory of the man whose faith and courage made it possible. Bullock carts carrying men and material, the first train steaming into the town, ladies in elegant, starched white frocks riding gaily caparisoned elephants on a sightseeing trip, and the true-to-life clay model of a primitive steel making furnace all add documentary visual appeal to the story. There is the story of the birth and growth of Jamshedpur, rising out of the wilderness into one of the best managed and prosperous urban centres in India.

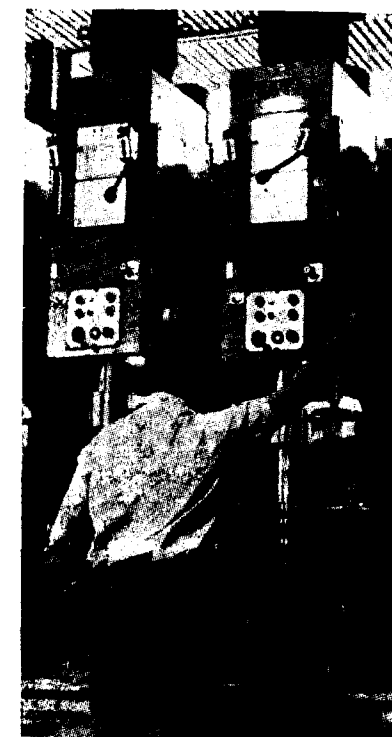
It is a matter of record that many amenities taken for granted today were introduced at Jamshedpur much before most of the world thought about them. An eight-hour day was introduced as far back as 1912, long before it had been accepted in Europe and America. Leave with pay

V. Krishnan, 20, a TELCO trainee after finishing matriculation at the R.D. Tata Higher Secondary school at Jamshedpur, is a second-generation Tata employee. Everyone takes a quiet pride in belonging to the Tata family, at present 154,000-strong.



was introduced in 1920, ahead of the Western countries: in India it was statutorily introduced only in 1945. Provident Fund scheme for workers was started by Tatas in 1920, anticipating the Government of India's legislation on the subject 32 years later. As for housing, the Tata Iron and Steel Company in Jamshedpur has built over 15,600 units for its workers, at a cost of over Rs 6.70 crore. A profit-sharing bonus scheme was introduced in 1933-34. At Jamshedpur, workers have an equal say in 33 different joint departmental councils as also in the top Joint Consultative Council of Management. Two experts from the International Labour Organisation vouchsafed, "the workers and the management of TISCO have made a remarkable success of the scheme of which they should be genuinely proud."

The New Delhi Exhibition also tells the new Tata story. A thematically integrated visual presentation of their industrial activities, the exhibition, again, is a statement through performance. Trucks, dumpers, fork-



Precision drilling machines for trainees: While the Tatas make sophisticated machines, processes and production techniques have to be modified to suit labour-intensive Indian conditions.

lifts and cross-country vehicles, performing the deeds for which they are designed, take up far more space than passive charts and photographs. Its range is, as the cliché goes, from soap to steel, but with much else in between. Spacious, well-lit and costing anything around a million rupees, the expo mirrors the full pulsating range of Tata enterprises. Items outside the common interest of the lay visitor are explained by engineers and technicians who have actually contributed to their design and manufacture.

"Let the Indian learn to do things for himself" was Jamsetji's motto, and today, a solid core of technicians and men who embody the Cartesian dogma of "I think, therefore I am", are turned out by the Jamshedpur Technical Institute. In the early twenties TISCO had 250 foreign technicians and today it is the only steel plant in the country without a single foreigner. Jamshedpur Technical Institute has schemes to train graduate engineers for positions of responsibility, science gra-

duates for operational positions, and engineering diploma holders for junior supervisory posts. It has trained over 2,000 technicians for Hindustan Steel alone, besides training personnel for Indianoil and Bokaro. At any one time, there are as many as 1,700 trainees in the Institute under its various courses.

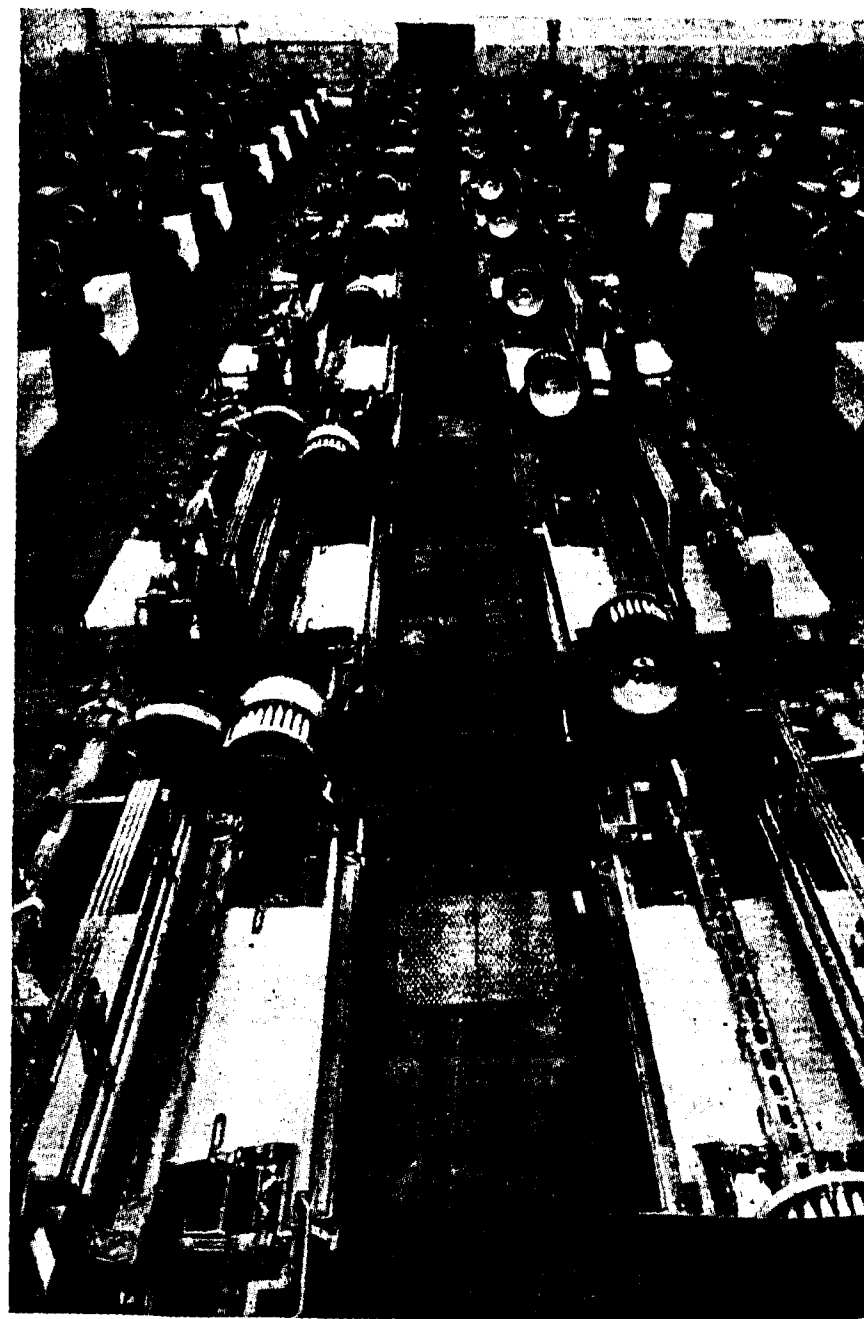
Innovation

Because the Tatas have entered into collaboration agreements with internationally known industrial houses, and because these foreign names are stamped on the machines along with the Tata insignia, the impression would be that they simply copy designs and specifications bought from abroad. While this is partially correct, research and development efforts undertaken by Tata companies themselves in the recent past have helped the country create indigenous knowhow. One example:

The OM 312 is a six cylinder, 100 hp engine for buses, trucks and heavy duty construction vehicles. Tata Engineering and Locomotive Company used to make them in collaboration with Diamler-Benz of West Germany, but the collaboration agreement came to a close in a year when every other truck manufacturer was finding the going tough due to the recession. TELCO was able to arrest the sliding scales of production, and the trucks continued to come out, at the rate of 24,000 a year, but under the Tata name.

Today, TELCO engineers at their Engineering Research Centre at Poona have gone one better: Once freed from the collaboration terms, they have turned the OM 312 into a direct injection engine, reducing fuel consumption by 20 per cent, eliminating the need for the oil cooling system, and cutting the quantity of copper tubing in the radiator by about 40 per cent.

This, explained S. Sampath, a young, first-ranking postgraduate engineer picked up by TELCO from the Madras IIT in 1968, was done without any outside help. His colleague, K. Krishnamurthy, also with a brilliant IIT record behind him, explained the fluid coupling which is a standard fixture with the OM 312 engine on earthmovers and buses exported by the Tatas. The



For years, the Tatas did not enter the consumer field, but the House of Tata now includes cotton and cosmetics, besides consumer durables. A view of a Tata textile mill.

hydraulic coupling enables the driver to start the vehicle in any one of the higher gears direct, and also to bring the vehicle to a complete stop even when the engine is running in the higher gears. The coupling absorbs all shocks, and as a result, the engine parts and gears last much longer. From concept to design and fabrication, the fluid coupling was developed entirely by the Engineering Research Centre. Asked to name the man

responsible for this pioneering effort Krishnamurthy said: "this is a team effort and the leader of the team is our technical director, Dr Yash Kumar Khanna."

Team Effort

And indeed the Tata effort is a team effort. Apart from the successful joint management councils the Tata organisation also has a

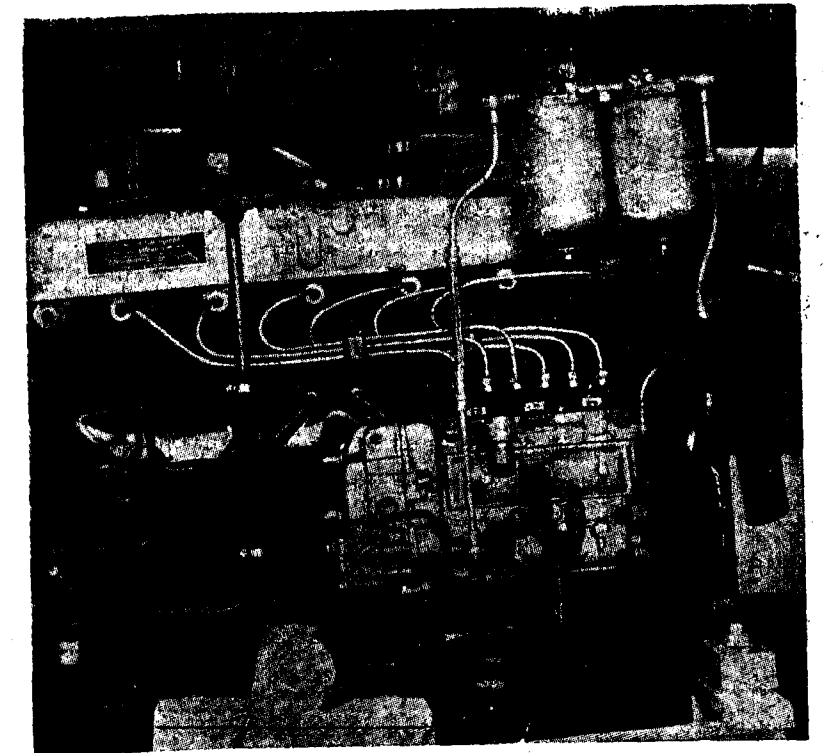
suggestion Box Scheme, in operation since 1945. In the last 25 years, out of a total of 17,149 suggestions received 1,491 were accepted and the individual innovators responsible for these time and labour saving devices earned a total of Rs 248,940 as cash awards. TISCO has an unbroken record of winning the National Sharm Vir awards since their institution in 1965. During 1970, ten out of 29 of these awards went to the men from TISCO.

The Tata enterprise today is known the world over. Its contribution to the country's economic development is, without question, outstanding. But, apart from this, the House of Tata has an enduring place in the life of the nation for its contribution to human welfare. Sir Incey and Beatrice Webb, Professor J. R. W. and Thakkar Bapa, among others, were associated with schemes of welfare services right from the beginning. Sarvodaya leader Jayaprakash Narayan commended these efforts thus: "More than anything else, the concept of trusteeship fostered by Mahatma Gandhi, receives a much-needed fillip in the Tata enterprises." About 80 per cent of Tata Sons' (the parent company's) capital is held by philanthropic Trusts and today more than 85 per cent of the profits go to these trusts. Sir Ratan, Sir Dorabji and Lady Tata, the major three of the nine Tata endowments, have distributed over Rs 8 crore in give-away charities alone since their inception.

Among the institutions created



Tata-Merlin-Gerin make switchgear and circuit-breakers from 400 volts to 220 kV. Picture shows an air blast circuit breaker.



20 per cent less fuel and 40 per cent less copper tubing in the radiator: The Direct Injection engine, an improvement on the current OM 312 engine fitted annually on 24,000 Tata trucks and numerous other heavy-duty vehicles. The DI, developed by Tata's Engineering Research Centre at Poona, is scheduled for assembly-line production by the year end.

and nurtured by these endowments, the Tata Institute of Fundamental Research deserves special mention. Much of the early work in perfecting the technique of radio-carbon dating of archaeological samples was carried out by this Institute. Its success in this field was an achievement that lent credit to India's declared policy of using the atom for peaceful purposes alone.

Serving the nation in other vital fields are India's first Institute of Science and Technology; the Tata Memorial Hospital for Research and Treatment of Cancer, also the first of its kind in the country; the Tata Institute of Social Sciences, now a University on its own right; the Tata Blood Bank and Transfusion Service; the Tata Department of Plastic Surgery; the National Centre for the Performing Arts and the Family Planning Foundation. Some of these institutions have since been gifted to the nation, but they continue to receive large grants from the Tata Trusts.

Among the smaller institutions is the Tata Agricultural and Rural Training Centre for the Blind, a

unique establishment run under the auspices of the National Association for the Blind. The Centre provides training in agriculture in all its aspects to blind persons from rural areas where rehabilitation services are rare. After equipping themselves with expert knowledge for scientific agricultural practices, they return to their homes, and, instead of taking help from their folks, help them in vital ways. Becoming opinion leaders and spearheads for progressive practices, these sightless truly light a lamp so that others might see.

For those who have no family support or are otherwise disinherited, the Centre runs a Cooperative Collective Farming Society, with 50 acres of virgin land in Kalgaon village, donated by the Gram Panchayat.

To the romanticist, the Tata past, with its association with India's industrial infancy, is full of nostalgia. The Tata present, with its accent on massive industrial organisation, wide deployment of capital and attempts to adapt to changed social, political and economic conditions, may not be so romantic, but more significant.

AUSTRIAN GOVERNMENT SCHOLARSHIPS

1971-72

Applications are invited from Indian nationals and subjects of Sikkim for the award of Austrian Government offer of two scholarships in the following subject for study/research in Austria:—

1. *Subject:*

Medicine (Ophthalmology and Gynaecology)

2. *Number of Scholarships:*

2 (TWO)

3. *Duration:*

The scholarships will be given for an academic year comprising 9 months and starting on October 1, 1971.

4. *Passage:*

The cost of passage both ways will have to borne by the selected candidates/their employers/sponsors.

5. *Age:*

Below 35 years on 1st September, 1971.

6. *QUALIFICATIONS:*

At least a second class M.B.,B.S. with M.D. or M.S. with two year's teaching/research/practical experience in the line thereafter. Preference will be given to those who are Ph.D. in the subject concerned.

7. *Value:*

- A monthly allowance of Austrian Schillings 3000—(one Indian Rupee=Austrian Schillings 3.50)
- A textbook allowance of Austrian Schillings 1000—payable for each semester (in Austria an academic year consists of a winter and a summer semester).
- Clothing allowance for students from tropical countries amounting to Austrian Schillings 2500.
- Insurance for sickness and accident.
- Assistance in finding admission in a student dormitory at the student's own cost. If no such admission can be given the student will receive additional allowance for accommodation amounting to Austrian Schillings 300.—P.M.

Note: Applicants should have knowledge of the German language efficient to enable them to follow classes and instructions.

For each course a separate application will be required. One application giving order of preference for two or more courses will not be entertained.

Last date for receipt of completed applications is 26th February 1971 and

Last date for supply of forms is 20th February 1971.

For prescribed application forms and other particulars apply enclosing an unstamped, self-addressed envelope of 23 cm. × 10 cm. size for each course to the Ministry of Education and Youth Services, Government of India, Shastri Bhawan, Section ES-1, 'B' Wing, 5th Floor, Room No. 514, Dr. Rajendra Prasad Road, New Delhi-1.

The envelopes containing the applications should bear the superscription "AUSTRIAN GOVERNMENT SCHOLARSHIPS, 1971-72".

davp-70/670

UNITED

SERVICES

INSTITUTION

A Centenary Tribute by

MELVILLE DE MELLOW

This month a century ago, Charles Metcalfe MacGregor (above) founded a unique institution in India which is, even today, an unparalleled treasure house of literature on the art and science of warfare.

This nostalgic resume of the 100 years of this remarkable institution makes a sad revelation that even after one hundred years in existence it is still homeless.

A time came in its life when it could not afford to maintain even a bicycle and its property had to be sold to pay back the arrears of municipal taxes.

THE United Services Institution began its life in a defunct Town Hall in Simla in 1870, moved later to Army Headquarters, and then to premises above the old Scotch Kirk. In 1908 it got its own building, at a cost of twenty-six thousand rupees, near the Combermere Post Office, on land leased by the United Services Club. Membership in the year of its birth numbered 215.

The objective of the Institution was to promote the study of naval and military art, science and literature. Today, it has a voluntary membership of 4,700. However, it is ironic that a hundred years after its birth, USI still does not possess a building of its own—housed as it is in a few rooms of Kashmir House—the Secretary and his staff operating from what was once the Maharaja's pantry!

All the same, the grand old Institution has had its great moments. Its building in Simla had a large modern library, its walls adorned with war trophies and a fabulous collection of war medals. Dating from Lord Mayo's tenure of office, every Viceroy had been the USI Patron and every Commander-in-Chief, Vice-Patron. Many of the Secretaries of the USI have been men of distinction. In the realm of military accomplishment some were household names. The late Field Marshal Viscount Slim, General Gracey, Lt. General Martin and Brigadier the Right Hon. Sir John Smythe, were such men.

There were many other associated with the USI during the hundred years of its existence who added lustre to the Institution by virtue of their own eminence. Among them



A painting in the USI Library

were Lt. General Sir Douglas Haig, the Hon. Sir Henry McMahon, Field Marshal Lord Birdwood, General Sir Claude Auchinleck, General Sir Phillip Chetwoode, Lt. General Sir Kenneth Wigram and Viscount Gort.

In 1933, Ram Chandra, an ICS Officer, became the first Indian member of the Institution while the first President, after Independence, was General K.M. Cariappa who was also the first Indian Commander-in-Chief of the Army. The USI faced the most critical period of its history in 1956-57. Its finances were so depleted that the Institution's property in Simla had to be sold in order to pay the Corporation's taxes and the USI couldn't even afford a bicycle to facilitate its daily work. The architect of the dramatic recovery that was to follow a few years

later, was Colonel Piyara Lal, AVSM, who was appointed Honorary Secretary during that dark period and who is still there today—fourteen years later. Tackling the task before him with total enthusiasm he cut expenditure to the bone and introduced new schemes to raise money. The most important and effective of these was the introduction of correspondence courses for officers serving in NEFA, Ladakh and other out-of-the-way posts. Today, more than twelve hundred officers take these correspondence courses. This has not only given USI a new lease of life, but has also enabled it to set up various funds so as to ensure that it never again finds itself in the predicament it faced in 1956-57, when it had almost faced closure. This year the USI has enrolled nine hundred members—a record.

The second oldest institution of its kind in the world also has the oldest journal of its kind in Asia.

The USI library is a gold-mine of knowledge indispensable to the development of thinking of Service Officers on defence and warfare. The library boasts of forty thousand bound volumes, manuscripts, rare old books and prints, including one of the only six available copies in the world of Aelian's "Tactics" published in 1616, a book that revolutionised warfare tactics in the 17th century. Tarlton's own apologia of the conduct of his operations, during the American war of Rebellion (1787) and Claude De Vauban's military history of Marlborough and Eugene, published in 1737, are the other rare acquisitions.

The printed works deal with every aspect of warfare, particularly the wars of the nineteenth and twentieth centuries. There is a full spread of biographies, memoirs, letters and autobiographies of practically every military or political figure of any significance in Indian history. There are titles like "Strategic Theory and Thought", "Arms Control and Disarmament" besides a wide range of learned professional journals. Add to this a vast collection of files of the USI Executive Committee and the Council, which offer clues to the choice of topics for certain Gold Medal Prize-Essay competitions.

Journey into the Past

Another rare and antique document is a journal in eight volumes on the private life and conversations of Emperor Napoleon at Saint Helena (1823). There is also an exciting narrative of the Bengal Army Officers' Mutiny way back in 1766. The diversity of available material can be seen in the wide range of books on subjects as varied as veterinary, homeopathy, plants, flowers, fish, horses and dogs. You can follow George Foster on a tough but romantic journey in 1808 from Bengal to England through North India, Afghanistan, Persia, Rumania and the Caspian Sea, or share the fortunes of Captain Little's Detachment in 1794, as he slugged it out with Tipu Sultan.

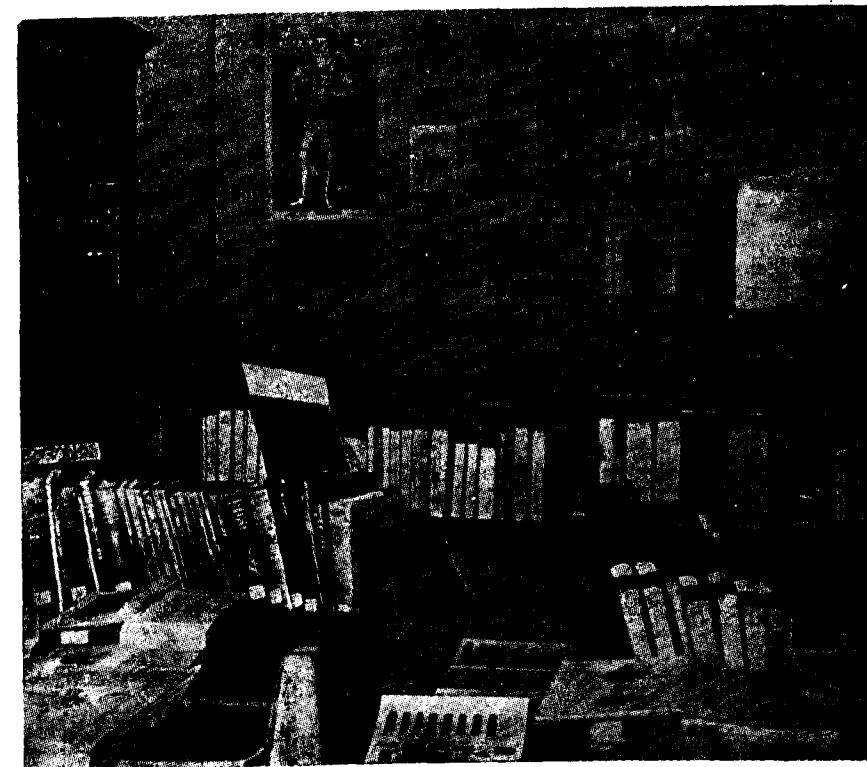
For Drama, read Elisha Kent Kane describing his search for Sir John Franklin in 1853-55, during an Arctic Expedition. It's all here—a storehouse of information and

experience—recorded by men who lived through the adventures and hazards of life.

The USI in Kashmir House also has the nucleus of an excellent museum. Here, you find excellent portraits of past Generals dreaming of old flags, and vanished glories. The portraits that hang on the walls, bring back vividly the grandeur and pageantry of those far away days. In one brief look they transport the viewer into the past and he begins to hear the crash of guns, the rattle of musketry, faint bugles blowing reveille, the mournful mutter of the battlefield. No complex philosophies of world intrigue and conspiracy dominate these pictures—just the simple fact—"Their Country Called". There are marble busts of great Generals and the brass-buttons and cap badges of the famous "Habshi Risala" or the Negro cavalry of the Nizam.

The Ribbons of Orders and decorations are endless and, among them, you will find preserved rare ones like the Black and Red Eagles of Prussia (1792), St Vladimir of Russia (1782) and St John of Jerusalem (1888). There is an excellent portrait of Major General Sir Frederick Richard Pollock, KCSI, which was rescued from the gloomy godown of Messrs Cotton and Morris in Simla! It was probably sent there for framing but lay unclaimed for thirty years. There are water colours of sunsets in Mussoorie by Field Marshal Lord Birdwood of Anzac and Totness and nearby lie the uniforms of the Camel Corps and Abyssinian Cavalry and Infantry—the Red Tarboosh, emerald jackets, sandals, leggings, chevrons, pantaloons and pugrees—down to the last captured detail—underpants!

A faded portrait of Wellington on the field of Waterloo, titled, "The Hero and his Horse" is a magnificent mood picture. There he stands dismounted, hat in hand, the other hand placed affectionately on the saddle of his steed. He gazes pensively over the wasteland of the battle into the distance where a string of cottages blurred by sundown send up curls of smoke. The stark tragedy of war comes alive in another picture of the Battle of Colenso, where the 66th Battery of the Royal Field Artillery in 1899, won a victory—but you wouldn't believe it, as you



A section of the USI Library

gaze at the massacre of men and beasts, overturned guns, dead and writhing horses, corpses of brave men, carnage, bloodshed. The complete quotient of agony and death!

By contrast, an extract as acid as vinegar from a letter written by the Duke of Wellington, in 1810, to the Secretary of State for War, Lord Bradford from Spain, reads:—

"My Lord, if I attempt to answer the mass of futile correspondence that surrounds me, I should be debarred from all serious business of campaigning".

"I must remind Your Lordship, for the last time, that so long as I retain an independent position, I shall see that no officer under my Command is debarred, by attending the futile drivelling of mere quilldriving in Your Lordship's office, from attending to his first duty, which is, and always has been, to train the private men under his command, that they may, without question, beat any force opposed to them in the field."

Also on the walls, imprisoned behind glass, are tumultuous Baluch horsemen, swords flashing, charging

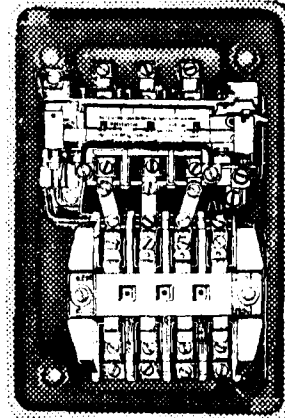
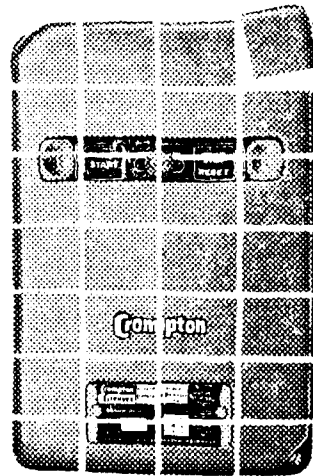
the enemy at full gallop. Steel-helmets of all shapes and sizes, ammunition pouches and even a bright brass-kettle made from a Turkish Small Arms Ammunition tin are some of the mementoes of battles long ago.

February 1971 is therefore an important milestone for the USI. Its 100th birthday should afford a good opportunity for serious stock-taking and a reappraisal of its future functions.

In the light of today's needs it must evolve into an autonomous "Think-Tank", serving not only the Armed profession, but Government, Parliament and the public at large.

Thanks to Metcalfe's foresight, we have today an institution which is the second oldest of its kind in the world, with a Journal that is the oldest professional defence Journal, with continuous publication in India and in Asia. May that one small candle, that was lighted by Metcalfe a century ago and which has shed light and understanding to so many who have been involved in the search for knowledge and the pursuit of historical fact, flare forth to illuminate the enquiring minds of men for many centuries to come.

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Trips even when your motor is running far below its rated capacity.
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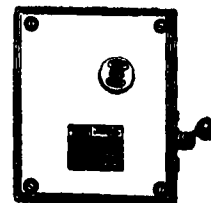
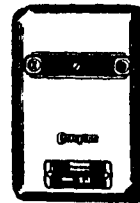
Direct-on-line starters upto 15 BHP.

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**RIGHT FROM THE START,
USE THE RIGHT STARTER**



Children saying their prayers at the morning assembly.

A Children's Village

K. P. BHANUMATHY

Officially inaugurated last year, the SOS Children's Village in Haryana has twenty small cottages housing 138 orphans, coming from all parts of the country in an atmosphere of love and kindness. Each house is under the care of a mother, who does her best to create a normal family atmosphere. Great importance is given to the education and health of the child.

FAR from the madding crowd, fifteen miles from the heart of New Delhi, sitting atop a hillock is the SOS Children's Village. As one motors down Mathura Road to Faridabad a U turn brings one to Greenfields—it is anything but green—and driving through a kutcha road up a dusty incline one comes across a view of the red bricked walls of the Gurukul and a few yards away perched on an elevated rock-built platform is the village. The neat little rock built houses and well laid out lawns with a miniature fountain comprise the SOS Children's Village, the first of its kind in India.



Workers engaged in the levelling of ground

The idea of a Children's Village was born as early as 1964, when the originator of the SOS Children's Villages, Dr Hermann Meiner, came to India and met the late Prime Minister Nehru. But it was only in 1967 that the first quarrying and cutting of stones for the Village began. And as the idea took shape and form inflexibly, a philanthropist came forward with five acres of land at Greenfields, now in Haryana.

The land was rocky, barren and looked like no man's land. There were no approach roads and not a blade of grass was visible over the sunbaked land. But to the sponsors it was a godsend, far from the smoking chimneys or speeding automobiles the air was fresh and pure and an ideal spot for a Children's Village. The difficulties of building on such a terrain came later as work began, but undaunted they set to clearing wild shrubs and levelling land. Water and materials had to be brought from nearby villages as there was not even a jeepable road.

The work moved painfully slow, and there were moments of despair but the dedicated workers led by Mr J.N. Kaul and Mrs Edith Pohl,



A Tibetan mother engaged in digging her garden

an expert from SOS International Children's Village in Vienna, went about their task in right earnest to complete the village. In 1967 by sheer perseverance of the Village Committee and the intervention of Mrs Gandhi the Village idea was reactivated. With the completion of the five houses in July that year, the first batch of children moved under the care of 'mothers' with all the aplomb accompanying an inaugural. The Village was, however, opened officially last year by the Prime Minister.

Consisting of twenty small-stone houses with pocket-sized gardens fenced around each house, lovingly tended and cared by the little occupants, the Village has a small population of 138 kids with ages ranging from infancy to sixteen years. They have come from far away places like Kerala, Bihar, Tibet and cities of Northern India. They live with a 'mother' in those cozy homes. Each house, individual in character has a name like Panchvati, Madeepika, Shanti Kutir or a welcome sign of a Tibetan prayer wheel in the doorway or a painted Sonam Ling sign, under which a smiling Tibetan mother awaits her child. A happy domestic atmosphere greets you as you cross the courtyard to the houses. Washing flutters in the sunny wind, the stainless steel utensils shine on kitchen shelves and the bright curtains keep the sunrays out while a mother cooks the noon-day meal or is busy at the sewing machine. Across the yard one sees a boy and girl hand in hand returning home from class clutching at the satchel; little ones frolic in the sun under the watchful eye of an aunt.

A feeling of comfortable domesticity prevails all around. "Our aim is to bring to these little orphans an atmosphere of love and kindness where they can grow up like normal children healthy in body and soul", says Mr Kaul, the Director of the Village. Associated with the Village since its very inception, he is like a real father to all the children—the way they run up to him wanting to be lifted and hugged is a moving sight. "Our children grow up with brothers and sisters, some of them with real ones and a normal family atmosphere is what we have created."

There is no common kitchen in the Village, every family house has



A Kindergarten class in progress

its own kitchen with its own bedrooms and the mother decides what is best for the child to eat as in any normal family. The mother shops, cooks, washes, leans and tends the child as her very own. Often mild competition between the mothers exists to dress their little ones better than the neighbour's child. On the mother's shoulders lies the responsibility of the child and the home. She is assisted by an 'aunt'. From among 400 applicants for the job of Mother, only forty-eight were finally approved. They were selected after exhaustive tests in aptitude, motivation and background were conducted by Mrs Pohl. The 'mothers' and 'aunts' were then given training in nutrition, child care, home science, cooking, first-aid and nursing at the Delhi School of Social Work, Lady Irwin College, St. Stephen's Hospital and the All-India Medical Institute.

Educating the Child

The education of the child begins as soon as it gets acclimatised to the atmosphere. A kindergarten

with fifty children, divided into two groups, vibrates with life and laughter in the village. "The hobby centre has revealed some genuises in the offing and we are proud of the talent that we have among our family" says the Director, fondling a future musician. Twenty-two little bright eyed youngsters from six to 12 years of age are in the preparatory class in the nearby village schools. The children attend schools like any normal child in a family. Sixty-three children are studying in government secondary and higher schools in Anangpur. Among them are also a few merit scholarship-holders. While little Lobsang is a scholarship student at the Delhi Public School, seven year old Punita and nine year old Shamsher are studying at the Modern school in New Delhi.

To enable the small ones to catch up with their studies, the older children conduct tuition classes and qualified mothers like Kuldip Kaur,

turn to PAGE 52

Before you have another child **think**



wouldn't you first
like to give this child
all the care she needs?

Life-giving milk. The clothes, the toys, the books...all the things you want to be sure she gets. But if another child should come along too soon, this may not be easy. Wouldn't you prefer to avoid this? Millions of couples all over the world are doing just that. They put off having another child till they are ready for it. You too can do so with NIRODH. It's the world's most popular rubber contraceptive for men because it's so safe and simple to use. Why not buy a packet today? Available everywhere at only 15 paise for 3 because it is subsidised by the Government.



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ADULT EDUCATION IN INDIA

Retrospect and Prospect

V. S. MATHUR

THE problem of adult education in India is somewhat different from that in some other progressive countries where it is mainly a complement of earlier education. It, therefore, requires a different treatment. The number of adult illiterates in India is alarmingly large. Our aim is also to teach them a healthy use of their leisure.

The average Indian worker is rather apathetic towards becoming only a literate as he does not see any apparent gain out of it. Our first duty, therefore, is to remove this apathy and create a feeling in him that education brings about a freshness to life; that it is a part of 'complete living'. Now this is a long and arduous process. A campaign of illustrated lectures in villages and the institution of touring cinemas may be helpful in this direction. Use may also be made of the radio. No effort is too great for this work because all our schemes will fail unless the villager attends the adult centre of his own accord.

Great activity is now in evidence to further the cause of adult education, specially after Independence. The British were also aware of the problem and some schemes were launched by them. The 'each one teach one' programme was quite popular in those days. Many Governments like the Punjab Government had made it compulsory for all government employees to give evidence of having taken part in the movement before they were confirmed in their jobs. During the period 1931-41 literacy went up by about 5 per cent. In 1938-39, there were about 4,733 adult schools/classes having 1,44,983 pupils.

Since 1947, literacy in India has risen at the rate of 0.75 per cent per annum. The literacy figures for 1951, 1961 and 1968 were 16.6 per cent, 23.7 per cent and 32.0 per cent respectively. At the present rate of progress, it is estimated that the percentage of literacy

may rise upto 35 in 1971 and about 49 per 1981. Although these figures indicate good rise in percentage, in terms of absolute numbers there were 6 crore more illiterates in our country in 1967 than in 1931. This is mainly because of the fact that literacy is not keeping pace with the increase in population.

The quality of literacy is not very encouraging either. Most of the persons called as 'literate' can only sign their names with great difficulty. Only 3 per cent of the literate population have the facility of elementary reading and writing. Only 10 per cent have attained reasonable standards. Besides, the difference between literacy among males and females has been increasing over the years. The difference was 17.0 per cent in 1951 and in 1961 it was 21.5 per cent. This is because of the fact that the rate of increase of literacy among women has been lower than among men. The problem of literacy is more acute in rural areas than in urban areas. The difference between the urban and rural areas was 22.8 per cent in 1951 but it went upto 28 per cent in 1961.

I feel that minimum literacy should mean that a literate person besides signing his name in the mother-tongue should also be able to read and write simple language and should be good in simple arithmetic and current affairs. The concept of adult education has had a rather chequered career in this country. Till August 1947 the stress has been purely on the teaching of elementary reading and writing. A new meaning and a new orientation have since been given to adult education and it is now called 'social education', perhaps because of its wider social significance and notation.

The most important thing in the field of literacy is the production of suitable literature for neo-literates. Some good work has already been

done in this direction. It is very necessary that useful information is given to the adult regarding better methods in his particular field of vocation, besides adding to his general knowledge. The production of such literature should be taken under a crash programme not only at the Centre but also by the State Governments and other social agencies.

The Library movement also is naturally a must, if we wish to provide for good adult follow-up opportunities. It is very necessary that the libraries do not merely house periodicals and books, but that they should be situated at convenient places and in attractive surroundings. It may be useful to provide reading material at eating places and in public buses and railway compartments. Reading facilities could also be provided for adult patients in the hospitals and even at barbers' shops. Mobile libraries could be organised.

We have to admit that in spite of surface activity during the last 20 years, adult education has not been progressing for want of leadership and also for want of necessary public support and finances. Universities can undertake adult education projects. Adult education work can also form a very important part of the cultural and social services programmes undertaken by universities, degree colleges and even schools. Adult education must form part of the syllabus of all teachers, training courses starting from the Junior Basic level to M.Ed. degree. In the B.T. and B.Ed. courses Social Education may be one of the optionals or it may be incorporated in papers on Educational Psychology and General Methods of Teaching so that the graduate teachers may not only be proficient to supervise the work of junior teachers in this field but may also be able to carry on adult education work independently. At the M.Ed. level there must be an optional paper but it must be independent and a complete paper with practical work on adult education.

I also feel that literacy campaigns could also be organised with the help

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of teachers and students during vacations. In colleges, specially in training colleges and degree colleges, literacy clubs could be started where students may participate in the literacy movement on a voluntary basis.

What seems very deplorable to me is the neglect of adults in our prisons. Prisons should strive to reform their inmates. No real education is given to them behind the bars. This problem should form an important part of our adult education scheme. A criminal should be able to lead a respectable life after his release. Prisons should have posts of psychologists who can trace the origin of the crime and suggest proper treatment. Lessons on morality and religion, talks on general knowledge accompanied by special radio and cinema programmes could go a long way in transforming the criminal. A society that does not believe in reform, has no right to exist.

And finally, the question of continued education is equally important. Without this useful provision, the adult education movement will remain only half completed. We require wide facilities in the shape of correspondence courses, evening institutions and part-time and vacation courses in all areas of work and activity. Opportunities for improving one's knowledge and one's prospects should exist in abundance for all at all levels. It is good that at some places such facilities already exist but certainly we need more.

There is a direct connection between literacy and national progress. Money spent on adult education can always bring about good results and as such no developing country should hesitate in investing money in this important field. India today is faced with many challenges and the challenge of making our people literate and educated is perhaps the biggest of all. It is necessary that we face it with courage.

PRODUCTION BOOM IN SMALL SECTOR

from Page 23

Though the reaction of small industrialists in utilising the service has been satisfactory in Madras City, there appears to be some reservations in utilising this service by the small industries in mofussil areas. During the year 1969-70, 20 preliminary diagnostic surveys were carried out. Detailed surveys covering a wide variety of areas, like inventory control, production planning and control, organisation and methods, fuel efficiency, etc., were also conducted. As a result of these studies, an automobile spares manufacturing unit has been able to increase its output, maintain the delivery commitments, and relieve its top management of routine work. In another unit, a furnace imported at a cost of six lakh rupees and lying idle for six years was put into operation by fuel efficiency studies. A third company was able to reduce its finished goods inventory by inventory control studies. A complete organisational study was undertaken in one of the units. These services have also been extended to small scale industries by the NPC, and five local Productivity Councils in Tamil Nadu.

QUALITY CONSCIOUSNESS

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quality consciousness among the workers.

Process standardisation and the use of SQC techniques have already been mentioned for enhancing quality reliability in the processes. Use of 'fool proof' jigs, fixtures and other gadgets to ensure quality are very necessary in Indian industry when we are facing problems in raw material quality. Greater personal attention becomes necessary to control the process.

The role of the first line supervisor and middle management in process controls needs to be fully understood. Towards this, supervisory training is a must to develop their skill in handling problems and personnel.

Good housekeeping has a great impact on creating better psychological conditions to improve quality reliability in the production operations. Whether in the office or on the shopfloor, neatness and tidiness, cleanliness in and around the place of work and in the apparel used, good lighting, layout and working conditions—all go a long way to build up quality consciousness.

TO OUR READERS

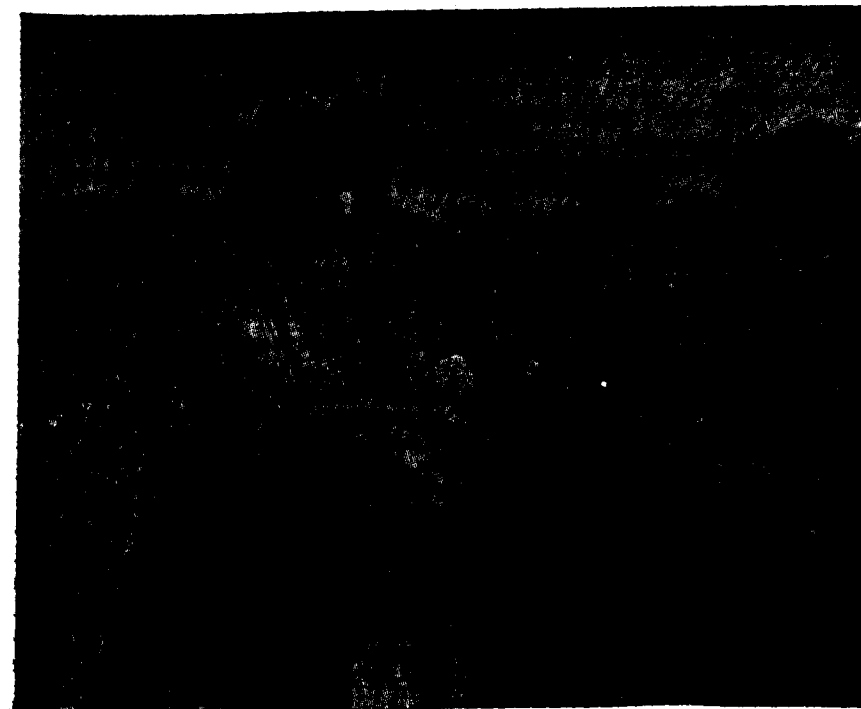
Despite our best efforts there has been delay in the publication of "Yojana". However, we hope to resume normal publication very soon. Inconvenience caused to our readers and advertisers is deeply regretted.

Chief Editor



A WONDER COTTON SEED

J. C. DESAI



Above: A woman worker engaged in plucking seed-cotton. Top, left: Mohanbhai of Indrapura village in Gujarat inspects the cotton crop at his Seed Production plot. Picture on top right shows how cross-breeding of different varieties is done to produce Hybrid-4 cotton, which is of superior quality.

HARDLY do the farmers of Indrapura village in Mehsana District of Gujarat know that they are on the threshold of a "revolution" in the cultivation of cotton. They only know that they have come across a new variety of cotton-seed which has immense potential for improving their economic life. Falling in line with some of their fellow cultivators, the enterprising farmers of Indrapura have grown a wonder seed-cotton—Hybrid-4—on over ten acres of land, divided into sixteen plots. This variety of seed-cotton, developed after a series of experiments at the Cotton Research Centre at Surat in South Gujarat, promises to bring about a revolutionary change in the cotton cultivation programme in the State.

Hybrid-4 Cotton is the result of cross-breeding between the female of Gujarat-67 and the male of nectarless American Cotton. It is a long staple variety comparable with the imported Egyptian Cotton. Besides its superfine quality, Hybrid-4 gives about three times more yield than other varieties and takes a shorter period to mature. As against ten months in other strains, this variety takes only seven months to blossom. Also, while Gujarat-67 yields 400 kgd. per acre and Devitej 500 kg. per acre, Hybrid-4 yields as much as 1,200 kg. per acre.

Hybridisation, however, demands a special skill and the utmost care. Every seed has to be carefully handled and treated. This involves labour and time. Irrigation and other inputs are also essential. Given these facilities, Hybrid-4 can work wonders. Its potentiality having been established, the prestige of the new seed has spread throughout the cotton-growing areas of the State. But the seed-cotton is in short supply, Government seed-farms are not in a position to meet the increasing demand. Cultivators have therefore been encouraged to take to seed cultivation. This is being done under rigorous supervision of the State Agricultural Department in order to maintain purity of the seed and to prevent adulteration.

More Money per Acre

The economics of seed production as also commercial production of Hybrid-4 Cotton is very interesting. An investment of about Rs 12,000 is needed to cultivate seed-cotton on a plot of one acre. This gives a yield of 300 kg.

For commercial production a kilogram of seed is required to sow over an acre of land. The total cost of cultivation, including all inputs and labour, comes to Rs 1,200 per acre. The production on an average is 1,200 kg. per acre which in terms of money works out to Rs 3,600. This means a net profit of Rs 2,400 per acre.

Though seed production demands a lot of care and labour, it is indeed a paying proposition. The difficulty faced by farmers is about the finance required initially. To meet this difficulty the enterprising farmers of Indrapura approached the Bank of Baroda, a nationalised bank, and obtained a loan of Rs 9,000 per acre.

India grows cotton on over 77,12,000 hectares of land according to 1969-70 figures. Of this, over 21 per cent of land, that is, 16,47,000 hectares, is in Gujarat. The production of cotton in the country is estimated around 52 lakh bales. On the other hand, the country's consumption of cotton is put at 65 lakh to 70 lakh bales, including the requirements for export markets. This leaves a shortage of ten to fifteen lakh bales which is met by

imports. Cotton imports cost the country foreign exchange to the tune of Rs 60 crore annually. Hybrid-4 promises to wipe out this deficit on the production front.

The following figures speak for themselves. In 1969-70 Hybrid-4 seed-cotton was cultivated on only 280 acres. This has gone up to 600 acres in 1970-71 and is expected to cover 1,000 acres in 1971-72. Each acre of land produces 300 kg. of seed cotton and one kg. of seed is sufficient to sow over an acre of land. Accordingly 10,000 acres

were brought under commercial cultivation of this variety. The figure went up to 65,000 acres in 1970-71 and it is likely to be 1.25 lakh acres next year.

The increase in cultivation is reflected in increased production. The production of Hybrid-4 cotton was 15,000 bales in 1969-70 which in terms of money worked out to be worth Rs 1.8 crore. In 1970-71 the production stepped up to about one lakh bales which meant an income of about Rs 16 crore at current prices.

A Children's Village

from page 47

who is an MA and has twelve years of teaching experience, help them with their lessons. Children who show aptitude for singing, dancing or painting or are mechanically inclined are given special training under experts in different institutions. "We want our children to be useful citizens and higher education is our aim," says Mr Kaul. Every child has a small savings account, and every month each child receives Rs five as security savings for the future.

Equal importance is given to the children's health. As soon as the little tot arrives at the village it is given X-ray tests and a thorough medical check-up. The child is then placed under a pediatrician of the Holy Family Hospital, who along with a dental surgeon visits the clinic at the Village twice a week. Immunisation is strictly observed. A well-equipped clinic with a highly qualified nurse takes care of minor ailments of the little folks. The clinic has become so popular that the people from the surrounding villages have come to use it regularly. Most of the medicines and equipment have been sent by donors from West Germany. Free milk is distributed not only to the children of the SOS Village but to children of the surrounding areas. The free milk is a gift from the Catholic Relief

Services.

Buildings are coming up for the Village's own bakery and laundry. A community home for the children of the neighbourhood is nearing completion. A little secular society, the Village conducts a common prayer in the mornings and all religions are taught without inhibitions. The *Koran*, the *Gita*, the Bible and the teachings of the Buddha can be found in the houses according to the likes or religion of the child.

The SOS Village at Greenfields is run from gifts in cash and kind from abroad and Indian philanthropists. But the main burden of running the Village is on the SOS Kinderhof International of Vienna which finances it through the Hermann Meiner Funds. "Our dream is to start a rural children's village where a healthy community of children can live and learn useful trades", says Mr Kaul. The dream is expected to be realised soon. The community centre to be started at Bhavana on a three and a half hectares land will be an ideal farm where growing youngsters will be taught modern farming methods.

The SOS Children's Village of India will soon have another children's Village at Kaithal in Haryana. The SOS Kinderhof International is building a Village in Mysore.

Farming Plans To Boost RURAL EMPLOYMENT

C. DINESH

It is now being emphasised that a dynamic, employment-oriented farming plan could solve the food and unemployment problems to a very great extent. If such a farming plan could be drawn and integrated with cooperative farming in India, we may perhaps be able to solve the problem of rural unemployment to a considerable extent. But then it must be actively supported by the Government.

An operational farming plan should first take into account the location and size of the operating unit. The location of the cooperative farming units can be divided into irrigated and non-irrigated areas. A beginning should be made with a few selected farms in each state which have adequate irrigation facilities. On the basis of the experience gained, we can move on to the dry areas also.

Considering the type of operations and the type of cultivators engaged in cooperative farming activity, a farming cooperative for marginal farmers should start work on an irrigated land of 10 to 16 hectares. For medium farmers the size of farm could be between 30 and 40 hectares. This will make it possible to organise modern type of farming and ancillary activities, in which submarginal farmers and those who are under-employed could be gainfully employed. This selection of size of farms could be irrespective of the cropping pattern because the input-output ratio worked out for certain selected farms does not show any relationship between the cost-output ratios and the cropping pattern.

Once the size of the farm is determined, a complete plan for current farming operations and long-term farming development could be prepared. The plan for current farm operations would involve only the

usual labour force. The long-term development on the other hand can be a phased one in which additional labour could be employed and plans could be worked out to mobilise financial resources from within and from without.

The cost-output ratios of some of the selected farms taken up for analysis show that most of these farms have been working fairly successfully at a cost-output ratio between 1 : 1.30 and 1 : 4.81 in 1964-65, whereas the labour-cost-output ratios are much higher. This is an indication that a number of farms, where the cost-output ratio is more than 1 : 2, can absorb more labour force, which of course, would reduce this ratio and at the same time, facilitate employment of more persons in organising ancillary activities within the structure of the resources available. In other words, perhaps, in the size group of farms which we have recommended earlier, we may select farms which have a cost-output ratio of more than 1:2 and experiment plans of intensive cultivation and diversified farming activities within the structure of the available resources. On the basis of the experience gained on these farms we could take up farms with the lower cost-benefit ratios.

The phased programme for employing additional labour can include development of additional irrigation resources by which multiple crop rotation could be practised. It may also comprise works for the improvement of the structure of the farm, installation of farm machinery and processing units, developing a new cropping scheme and special agricultural development schemes.

Long Term Development

If we concentrate on the long term development plan in the first

instance, we should start from development of irrigation facilities like digging up wells and improving the existing wells, installation of pumping units, etc. Part of this expenditure can be met by the surplus resources and the rest from the agricultural financing system. Along with the development of the irrigation resources, plans may be prepared to improve the farm structure also by constructing farm houses, cattle sheds, godowns, etc. After these two phases of development are completed, a new intensive cropping scheme could be prepared. The entire cooperative farm need not be utilised only for cultivating food crops or the traditional commercial crops. Actually 1/3 of the farm could be utilised for growing vegetables, dairy and poultry farms, which would give quicker returns continuously on a daily basis. This income obtained from these subsidiary activities on the farm could be utilised for the maintenance of the farm labour during the lean period. The farming activity is such that expenditure on traditional cultivation will have to be incurred at the beginning of the operations and the farmers will have to wait from six months to a year to get the final returns. For this intermediary period, there must be a plan of earning sufficient incomes to maintain the people who are engaged on the farms. Of the remaining 2/3 of the farm, a portion may be devoted for producing high yielding variety seeds. In the final plans may also be drawn up stage for developing agro-industries.

Certain crucial factors for the successful implementation of the farm development plan, which would not only increase the productivity of land and labour but also provide additional employment opportunities, are:

- (i) good leadership,
- (ii) homogeneity of membership; and
- (iii) farms organised by marginal cultivators.

Some ways and means should be found in the initial stages of implementing the plan to incorporate these three characteristics in the selected farms. The leadership can be trained and built up, structural

membership again can be regulated by government initiative. These two factors can take care of themselves when the initial attempts of implementing the farm development plans have been exhibited to be successful ventures.

States' Responsibility

The State Governments have great responsibility of seeing that the farms are organised in a true spirit of cooperative association where marginal farmers are made to associate in the first instance, and then wherever necessary even medium farmers may be encouraged to join. The government can also provide an efficient leadership in implementing the plan in the initial stage.

Finally, the farm development plan for employing more labour should be conceived as being a part of the total development plan for the area as it would be extremely difficult and impracticable to think of implementing a development plan for an individual farm. In the first instance, the unit of development will have to be decided which would include at least a dozen farms. We can prepare a total development plan taking at least 4 to 5 villages as a unit where agriculture and infrastructural convenience can be developed to facilitate the implementation of the plans on individual farms. This is necessary in view of the development of some ancillary activities like dairy, poultry, vegetable growing and also selected agro-industries.

PROMOTION OF SAFETY

"...A small business will find that housekeeping plays an important part in promoting the safety and welfare of the employees, protecting the product from soilage and similar damage, and preventing fires. The time that is spent in housekeeping should not be considered as time lost from the job. Rather it is an important part of each employee's job and responsibility...Management has a most important responsibility in establishing the setting for housekeeping...(it) should provide employees with cleaning compounds clothes or other cleaning devices as may be required for the work that is being done..." extract from a bulletin published by the New York Insurance Conference on Occupational Safety)

APPLICATION OF PERT TO PLANNING AND EXECUTION OF PROJECTS

from Page 28

as against the prevalent practice of turning out an overhauled vehicle in 12 days. It has also proved useful in effecting savings in the project cost. For instance, in a building construction project valued at Rs 8,00,000, it was possible to complete it on the scheduled date, and at the same time achieve a saving of Rs 1,00,000 in material and labour costs through resource leveling.

The application of PERT has also revealed many other interesting cases. For instance, in a Governmental research and development project, procedural and procurement activities constituted a major portion of the critical path rather than the actual designing of the entire device. If procedural matters were simplified, the project duration could have been reduced from five to three years. In the installation and commissioning of large-size plants, PERT becomes a valuable aid in determining a realistic project duration and project cost estimates which otherwise always remain a bone of contention between the higher authorities and the plant peoples; and still more

significant is that it helps the management in taking bold decisions.

PERT, therefore, is a powerful tool of planning, scheduling, and control of projects. Since it is a tool, its efficacy is dependent on how efficiently the management operates it. PERT is an aid to the management, and is not a substitute for management decisions. If PERT has to become an effective aid in the execution of projects, the plans and schedules on its basis must necessarily be drawn with the involvement of the concerned persons who are responsible for executing projects. Any outside imposition will make the PERT application ineffective. Further, there ought to be a greater degree of decentralisation in governmental projects. Once the realistic project duration and cost estimates have been worked out and approved, the management should be responsible to the government only for executing the project in time and within the sanctioned budget, and how they achieve it should essentially fall within the purview of the management.

PRODUCTIVITY AND SAFETY

from Page 25

In societies like India where labour is cheap and abundant, and where accelerated technological advancement is unaccompanied by a higher rate of employment, industrial outlook has not been very much concerned with aspects of safety. The obvious result has been the inefficient and inadequate utilisation of human resources. What is required is the enthusiasm and will of men at the top, and of management in general, to use safety precautions wherever they could be applied. A proper appreciation of the value and potential of human

resources can alone provide a humane basis to productivity. Productivity centres around the human resource which is capable of self-enlargement, and until such time as this resource is effectively utilised, other resources will remain sterile. Industry has, therefore, to give the same regard to its employees as they now lavish upon customers. Just as goodwill is necessary to promote and retain customers, so is safety necessary to give a sense of belonging to the employees.

GREEN REVOLUTION IN HARYANA

S. D. CHAMOLA

THE state of Haryana which completed its 4 years in November last, has made a break-through in all fields, particularly agriculture. At the time of its formation, Haryana lagged behind in almost all the fields of socio-economic development. The cultivated area was more or less the same in the twin states of Haryana and Punjab, but the area under cash crops was only 12 lakh acres in the former as against 20 lakh acres in the latter. Seventyfive per cent of the area under foodgrains was tied down to low yield crops like jowar, bajra and gram in Haryana as compared to twentyfive per cent of the area under these crops in Punjab. Of the gross area, 31.2 per cent was under irrigation in the former as against 62.3 per cent in the latter, while consumption of fertilisers in Haryana was one-fourth of the erstwhile Punjab.

Today Haryana presents an altogether different picture. It has entered the take-off stage. The buoyant economy is poised for a rapid growth and the green revolution is sweeping across the State. Its income in real terms (at 1960-61 rice level) increased from Rs 98 crore in 1966-67 to Rs 328 crore in 1968-69. It has thus risen from the fourth place in 1965-66 to occupy the second position in the country. Similarly the per capita real income in real terms also increased from Rs 331 to Rs 343 during this period, which is higher by 7.5 per cent than the corresponding all-India figure of Rs 19.

Agriculture

The contribution of agriculture to the State's income which is about 50 per cent, has increased from Rs 52.23 crore to Rs 216.61 crore (net domestic product at factor cost) during the years 1965-66 to 1967-68. High-yielding varieties of seeds, intensive use of fertilisers, adequate facilities for irrigation and electrification, proper arrangement of advancing credit to the farmers, rod control projects and improved

methods of cultivation have helped in the rapid growth of food production. It has increased from 19.85 lakh tonnes in 1965-66 to 45.53 lakh tonnes in 1969-70. Today Haryana is not only self-sufficient in foodgrains but it also exports foodgrains to other states.

Despite bad climatic condition in 1966-67, the agricultural production increased by 30 per cent over the year 1965-66, whereas production of oilseeds increased from 84,000 tonnes to 90,000 tonnes, that of cotton went down from 2.92 lakh bales to 2.89 bales and that of sugar from 7.17 lakh tonnes to 5.10 lakh tonnes during 1965-66 and 1966-67. A real breakthrough was achieved in the year 1967-68 when the agricultural production increased steeply. During 1966-67 to 1967-68, oilseeds production increased from 0.90 to 1.13 lakh tonnes, and cotton from 2.89 to 3.75 lakh bales. Sugarcane, however, again declined from 5.10 to 4.76 lakh tonnes. This large increase in the output was made possible not only by favourable agro-climatic conditions, but the concerted efforts made by the government in popularising high yielding varieties, energising tubewells and other measures taken from time to time. The year 1968-69 ushered in with optimism, but did not continue for long and unfavourable weather conditions again adversely affected the agricultural production. In spite of all these, the production of wheat increased by one lakh tonnes and of sugarcane by 1.98 lakh tonnes. This was due to the adoption of the high yielding varieties of seeds, extension of minor irrigation, and increase in the acreage of these crops. However, 1969-70 marked a turning point with a record increase of 78 per cent.

Another factor contributing towards the increased agricultural production in Haryana was the use of new varieties of bajra and wheat developed by the scientists of the Punjab and Haryana Agricultural University. Of these mention can be made of Sankar Bajra No. 1, Dwarf Mexican Wheat P.V. 18,

Kalyan, Sona, American cotton L.S.S. 216F, 320F, & H14. As a result the wheat production in the State showed an increase (by an estimate) of 50 per cent, and that of paddy 30 per cent, bajra 15 per cent and maize 10 per cent.

Minor Irrigation

There being a paucity of surface water resources and rainfall in Haryana, the exploitation of sub-soil water resources assumes great importance. At the time of the formation of Haryana, only 31.2 per cent of the gross area was under irrigation. The Annual Plan for 1968-69 provided a sum of Rs 104 lakh for minor irrigation works. Out of this Rs 34.89 lakh were for setting up tubewells and Rs 15 lakh for loan assistance to chronically drought-affected areas.

During 1970-71 it is expected that loans to the extent of Rs 7 crore would be given to farmers for sinking tubewells, purchasing pump-sets and for percolation units. The Agricultural Refinance Corporation and the ordinary debenture schemes in the drought affected areas will together offer Rs 1.21 crore in loans. For the first time a survey of the underground water resources is to be conducted. It has also been decided to set up a Minor Irrigation Corporation which will take over the state-owned tubewells and would install new ones and augment the existing canal system. Besides digging wells for private parties, it will help the processing and manufacturing of tubewell equipment and machinery.

Major Irrigation

It is proposed to spend Rs 6 crore during the current year on major and minor irrigation schemes as against Rs 2.05 crore in 1967-68.

The important projects in the field of major irrigation works started and continued in 1968-69, were units I and II of the Beas Project, and share in Bhakra dam complexes (right bank power plant). Other schemes included were Gur-

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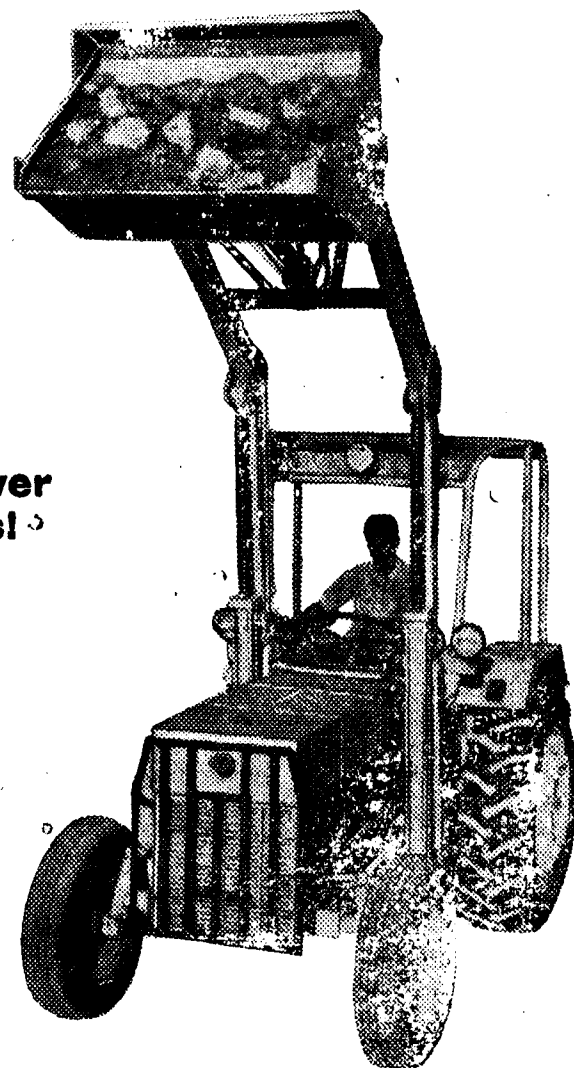
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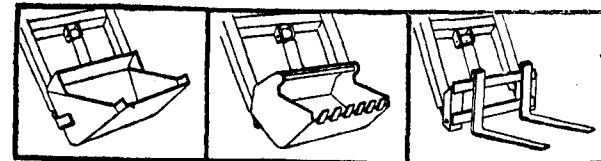
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gaon Canal Project, Western Jamuna Canal Remodelling and Feeder projects, Rewari Lift Scheme and Dadri Irrigation Scheme. Among the new schemes, the Jui Canal Project is the most important. The work on the canal has already been started and will be completed in next two years. The total cost of the project will be about Rs 3.67 crore. It will open new vistas for the drought stricken people of the State, particularly for those sandy and high places which have so far been

deprived of irrigation. Work is also expected to be started on Sohna Lift Irrigation Scheme next year. The scheme will lift the water from the Nuh sub-branch to the areas of Sohna plateau.

Pointed reference has to be made about the achievements of the Haryana State Electricity Board which came into existence in May 1967. It has done commendable work in electrifying the villages and energising the tubewells.

Electrification facilities were limited in Haryana upto May 1967, when there were 20,190 tubewells and 1,251 villages which were electrified. By the end of the year 1967-68, the number of tubewells had gone upto 27,589 and the number of villages electrified was still 1,251. Efforts were intensified. As a result, by August 1970, there were 72,321 energised tubewells and 4,038 electrified villages. Haryana thus enjoys the credit for electrifying the highest number of villages.

SMALL SCALE INDUSTRIES

THE small-scale industries sector has registered a remarkable recovery after the recession of 1966-67. The average growth rate during the last two or three years has been around 11 per cent per year as compared to about 8 per cent in 1965-66. The number of units registered with the Directors of Industries of the State Governments rose from 1,21,19 in 1966 to 1,90,727 in 1970—an addition of 17,000 new units every year since 1967. Employment provided by this sector rose from 58 lakhs in 1965-66 to 65 lakhs in 1970-71. The value of the gross output of the units covered by the Small-scale Industries Development Programme was about Rs 3,670 crore in 1969-70.

dit is being provided over a widening and widely dispersed area; scale and financial incentives are being reinforced by assured off-take through Government purchases, and large undertakings are being encouraged, even compelled, to promote the growth of ancillaries.

A total of 98 items has been reserved for production in the small scale sector. These include several sophisticated goods and even inter-

1969-70, some 10,000 ancillary units supplied goods worth Rs 27.30 crore to their parent undertakings.

Small-scale industries are well dispersed all over the country, with a large proportion of them basing their production on locally available raw materials and skills and meeting local consumer needs. Small-scale units working in industrial estates today employ nearly one lakh persons. During the year ended March 1970, they turned out products worth Rs 129 crore. Of the 285 functioning industrial estates, 131 are in urban areas, 92 in semi-urban areas (with population up to 50,000) and 62 in rural areas.

Remarkable Recovery after 1966-67 Recession

This spectacular growth can be attributed to the emergence of new entrepreneurial talent in the country and the special assistance and incentive like reservation of items and concessional finance which this sector has received from Government during the past few years. The importance of the small-scale sector to the national economy lies in the expanding base it provides for public participation in private enterprise, the widening scope it offers for new entrepreneurial talent and the immense potential it has for enlarging employment opportunities at lower levels of the economic strata.

Government have worked out and are operating an integrated strategy for the development of the small-scale industries sector. Reservation of items has been combined with promotional efforts; easier cre-

mediate and producer goods.

Since the nationalisation of banks, credit made available to this sector has risen four fold. At the end of March 1966, the loans advanced by the State Bank of India and the commercial banks stood at Rs 90.76 crore. The amount rose to Rs 393.39 crore at the end of March 1970—an increase of over Rs 300 crore in four years.

Foreign exchange allocation for the import of raw materials, components and spares has increased five-fold in as many years—from Rs 13 crore in 1964-65 to Rs 65 crore in 1969-70. It may exceed Rs 80 crore in 1970-71.

Ancillary industries have also developed at a rapid pace. During

Under the Rural Industries Programme for promoting small industries in rural areas, there are 49 projects covering over 43,000 villages. They provide employment to about 1,16,000 persons. Their production in 1969-70 was valued at Rs 10.12 crore.

Schemes have been drawn up to provide opportunities of self-employment to technically qualified persons through the small-scale sector. An outlay of Rs 1 crore has been provided in the Fourth Plan for training 6,000 engineering graduates and diploma holders.

Managerial and supervisory training to small-scale industrialists is being provided under a Special Training Programme. So far, 26,404 persons have been trained in managerial courses.

YOJANA February 21, 1971 Page 57.

Calling Young Engineers

S. V. RAGHAVAN
Our Madras Correspondent

A series of exhibitions of spares and components needed by Public Sector projects which small entrepreneurs, particularly engineering graduates, can make and supply were organised recently by the Industries Department of Tamil Nadu Government. These were meant to afford an opportunity to young and enterprising engineers to study at first hand the needs of the select projects with a view to manufacturing these items in the small-scale sector on their own.

The first exhibition in the series was held earlier in the ancillary industrial estate, adjoining the High Pressure Boiler Project in Tiruverumbur near Tiruchirappalli. It concentrated on the needs of the boiler plant and was held with the assistance of the project.

The second exhibition was arranged by the State Industries Department in collaboration with Madras Refineries, Madras Fertilisers and Hindustan Teleprinters. Held at Industrial Estate in Guindy near Madras, the exhibition was visited by over 2,000 engineers, many of them unemployed, from Tamil Nadu and the adjoining states of Kerala and Mysore.

The National Small Industries Corporation and the Madras branch of the Small Industries Service Institute also participated in the Guindy show to provide the necessary guidance to young engineers on the openings in the small scale sector and the training facilities. The State Industries Department itself had set up an information counter to help engineers in getting to know and, where possible, completing the procedural necessities for starting industries in the small-scale sector, and hire-purchase of machinery and financial sources. The State Bank of India provided an advisory service where information was available on the entire range of financial assistance which the

Bank extended under its various schemes. Attractive folders giving details of these schemes were made available, besides answering enquiries.

The Guindy exhibition, as one went round, presented a mixed picture of promise and problems. Not much of a big show, as exhibitions usually are—the whole thing was contained in a 1500 sq. metre area and the three participants were the projects around Madras. The Hindustan Machine Tools, like the State Bank, supplied information on the kind of machinery that it could supply and the conditions and cost under which these could be obtained.

The Problems

The components and spares that the Refineries and the Fertilisers displayed are at the moment supplied by the foreign collaborators themselves with the capital equipment of the projects. The idea of the show was to find out the extent to which indigenous sources and technical skill could be tapped for future needs. Most of the components of these two projects put up were of a very high sophisticated nature involving highest precision in manufacture. For instance, some of the gaskets that are used in laying oil pipelines are so precise in size, shape and quality of the material used that failure to ensure these specifications in any one of them will lead to the pipes blowing up and setting the entire installations at naught.

Raw material is another problem. For most of the components of these two projects, the raw material used is not internally available; also the machinery needed for their manufacture does not seem to be available.

A third problem is the supply of the specifications of the items, which the foreign suppliers prescribe and which may not be readily made available to our engineers.

Most of the items again were of extremely limited market potential.

It may not be economical for any individual entrepreneur to embark on a programme of manufacture of these isolated items with very limited demands. These must, therefore, form part of a programme of manufacture of items with bigger market potential, to ensure an economic balance. For such a latitude of manufacture it is doubtful if there is scope under the current schemes at the moment. Besides, import of raw material and equipment on individual account is bound to pose problems.

No satisfactory solution to these problems has yet been formulated though it is emphasised that where the projects are interested in encouraging local engineering skill and providing employment for engineers, they should come forward to supply material, particularly of the scarce and imported category, arrange to supervise manufacture and offer to buy the items on an agreed price advantageous to both parties. A beginning in this direction, it is said, has been made following the exhibition at Tiruverumbur.

In respect of teleprinters, the picture, however, is more reassuring as some of the components of the teleprinters can be locally made, and, therefore, their manufacture can be safely entrusted to engineers who come forward.

Nevertheless, these exhibitions have heartened young engineers, particularly those unemployed, that, given an opportunity, money and material, they can fill a sizable bill in import substitution. Similar exhibitions in different parts of the country will certainly create an impact and help the young engineers in being self-employed.

To Our Contributors

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A Prospective Tourist Centre of Goa

SIDHANATH

G. V. VAIDYA

WITH the liberation of Goa in December 1961, the doors of this long closed land were thrown open to the rest of the country. The influx of tourists to this Union Territory steadily increased from a meagre 6,608 during the whole year of 1962 to a respectable total of 18,500 for only the month of December, 1970.

In Goa, one finds a wide open sea, river mouths which are navigable up to 32 kilometers inside and afford scope for water sports, and the hills. The sea presents charming beaches with a total length of over 160 kilometers, while the hills provide many beauty spots having exuberant vegetation, as a result of heavy rainfall, and groves of tall trees of areca and coconut and of bannanas and cashew nuts.

Vegheri, the tallest hill in Goa has an altitude of 730 metres; and Sidhanath ranks second with a height of 410 metres. It is named after a temple of Lord Shiva on its top and is situated off Bori village in Phonda Tehsil. At present there is a *kachcha* jeepable road of about 3.3 km length from the village to the foot of the hill. On the way is situated an old temple of Navadurga. Archaeological experts date the construction of both these temples as far back as the 13th century. Ahead of the Sidhanath shrine, lies a high, conspicuous and protruding point, called Bhutal, with a small plateau, at an altitude about 50 metres above Sidhanath. It commands an expansive view upto Marmagao Harbour on the right and Chandranath temple hill in the front while on the left one finds a series of mountain ranges fading out one behind another. A fair is annually held at the temple on the full moon night in Poush. Nearby is an old tank of Bhadrakeshi, which will be renovated at a cost of Rs 10,000.

The entire ascent is thickly covered with trees and when seen from a height, it gives the appearance of a deep green canopy studded with casual dwellings of Girijans. The vegetation has made the place cool and pleasant. Perennial springs pour out their crystalline waters along the slopes, feeding the typical Konkani plantations.

A BRIGHT SPOT FOR BELLARY

The Bellary district in Mysore State abounds in places of tourist attraction. The crowning point is Hampi, which with its temple *gopurams* and monolith obelisks, left behind by the iconoclasts who ravaged the Vijayanagaram empire in the famous Talikot war of 1565, still bear mute witness to the sculptural glory that Hampi once was. Now once again glorious chapters in the annals of Bellary District are being written. The Tungabhadra Project, which has been completed at a cost of nearly Rs 110 crore has ushered in an era of green revolution. Its waters irrigate large tracts of land in the Bellary and Raichur districts. If Mysore State has become a surplus state in food production during 1970-71, the contribution of the Tungabhadra anicut area has played no mean part in it.

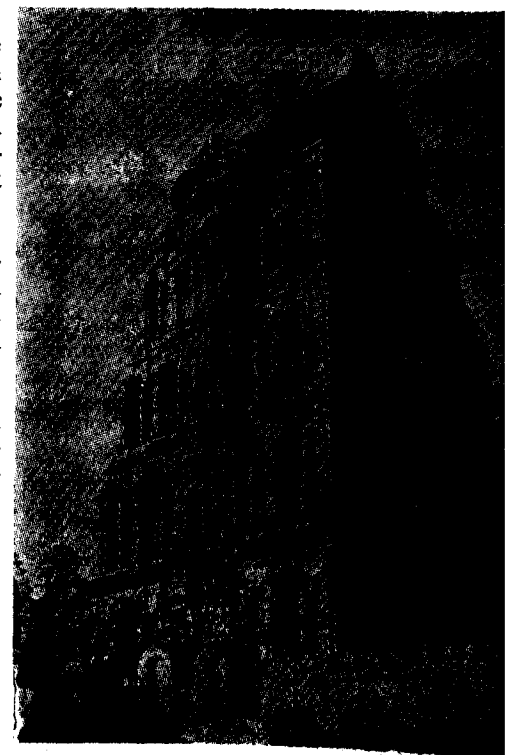
Bellary is now on road to industrialisation. Out of the proposed three Steel Plants to be started during the Fourth Five Year Plan in the South, one is to be located in Thoranagal in Bellary district. With its mineral wealth of iron ores, manganese, red oxide limestone, soft stone, gold and magnetite, Bellary promises to be the hub of Mysore's industrial complex.

Bellary district is one of the four districts of the country selected for job oriented educational system. The district has two sugar mills, 42 cotton mills, 70 oil mills which pin-point to the growth of agricultural produce in the district. The district has five colleges and 64 High Schools.

The Goa Administration has prepared a scheme for the development of this place to make it an attractive tourist centre. The access road up to the foothill is being covered with asphalt. A winding road which will lead to the Bhutal peak is also planned.

The second phase of the development scheme envisages the construction of log cabins, a children's park and gardens. The total cost of this scheme is estimated to be Rs 9 lakh.

The economic prosperity of the district has, however, been overshadowed, as elsewhere, by the rising population. Whereas the district had a population of 9, 15, 261 in 1961 its present estimate is 10, 33, 219. Its 8 hospitals, 17 dispensaries and 13 Primary Health Centres are rendering valuable service to the eligible couples to limit the size of their families. From 1965-66 till September 1970, these institutions had performed 1,36,000 vasectomies and 2,250 tubectomies.



Pampamluka Temple near Hampi

PEO STUDY ON FAMILY PLANNING

DYNAMIC LEADERSHIP NEEDED AT ALL LEVELS

WITH dedicated and dynamic leadership at all levels and improvement in services, it should be possible to achieve the goal of reducing the birth-rate to 25 per 1,000 of population in the 19-year period ending 1978-79. This conclusion has been reached by the Programme Evaluation Organisation of the Planning Commission, after studying data on the country's family planning programme, collected from 35 districts, 114 family planning centres, 350 villages, over 250 field personnel, about 7,000 villagers and about 6,000 adopters spread all over the country.

The study also points out certain serious deficiencies of the programme, such as inadequacy of training, under-utilisation of services, inadequate use of local leaders and adopters and lack of adequate arrangements for feedback.

Divided into two parts, the study deals with organisation and administration; extension education; villagers' knowledge, attitude and views; accomplishments at different levels; arrangements for training; the socio-economic and demographic characteristics of adopters; the sources of information and motivation and the processes of decision-making and reactions.

The Programme Evaluation Organisation is of the view that while the plateau has not been reached in respect of the vasectomy and IUCD programmes, conventional contraceptives could reach a new target group of couples with less than 3 children, hitherto not reached by any significant extent by vasectomy or IUCD.

The fatalistic orientation of the rural Indian does not appear to have stood in the way of his adopting such methods as vasectomy, and tubectomy or IUCD in the case of women. Although 57 per cent of the villagers quizzed declared that the number of children

depended on one's fate or the will of God, one-third of them had, nevertheless, undergone sterilisation and 42 per cent of them had adopted the IUCD. New practices could be propagated without modifying directly the existing beliefs and values.

Another interesting finding is the substantial achievement reported from sample villages with little or no promotional work by the family planning staff and from the so-called backward villages. This emphasises the importance of the informal channels of communication in the spread of new practices. These need to be exploited to a greater extent.

Ambivalence

People do have feelings of ambivalence about certain methods of family planning. This is evident from the fact that some had postponed operations and IUCD insertions for one reason or other. Further, people were exposed both to positive and negative information regarding different methods. Therefore, it has been suggested that the programme of education and motivation be carried out on a continuous basis. Knowledge and favourable attitudes by themselves would not lead to adoption; Whereas three-fourths of the respondents had knowledge of methods, only one-fifth had adopted them at one time or the other. The need, therefore, is to identify social and psychological barriers impeding adoption and to devise appropriate promotional strategies and adequate services.

The trend in the adoption of the three methods, IUCD, vasectomy and tubectomy, was different as among villages, towns and cities. The urban population had responded more to IUCD than to vasectomy as compared to the rural population. Among factors that would account for differences in performance are composition of population in terms

of occupational groups, level of literacy, electrification of villages, availability of radios, nearness of villages to market centres and the nature of extension efforts by field staff.

A large bulk of both tubectomy and IUCD samples belonged to the age group 20-40 years, whereas it was 30-50 years in the case of vasectomy samples. Again, while in the case of vasectomy there were more elderly people in the urban areas than in the rural areas, it was the other way around in the case of tubectomy and IUCD samples. The average number of pregnancy per adopting couple varied between 5 and 6. Over 60 per cent of the couples adopted one of the three methods after they had at least three children.

In general, the educational level of husbands of those who adopted tubectomy was higher as compared to others. The cultivators' group mainly drawn from the rural areas responded more or less equally to vasectomy and IUCD, while more labourers had adopted vasectomy as compared to the other two methods. In the case of those in services in cities the response was highest to the vasectomy programme.

The report reveals that a large proportion of adopters (88 per cent in the case of vasectomy samples and 79 per cent in the case of tubectomy samples), had not practised any other method of family planning before. Condom and IUCD were the important methods mentioned by those who had practised some methods.

Family and relatives seemed to play more of a negative role than a positive one, as a majority of adopters had heard bad things about the methods from them. Adopters themselves did not play any significant role, either positive or negative. This underlines the need for making special efforts to use adopters for counteracting rumours.

BIG DEEDS HUMBLE MEN

In this feature
Yojana seeks to present
the outstanding achievements
of some of the
many millions of obscure
men and women who
are working to build
tomorrow's India.

PACKAGE PRACTICES FOR AGRICULTURE

From Our Bombay Correspondent

AUGASTIN Colaeo, 52, a progressive farmer of village Walim near Bombay, who has been at the plough for the last 26 years, is a firm believer in package practices for successful agriculture. Starting with two acres under plough, Colaeo and his family now till about 21 acres of land, mostly under paddy. By dint of hard work and use of improved methods of paddy cultivation, he secured the highest yield per acre in the Thana district. He has the distinction of receiving the district award for highest yield for five consecutive years from 1952 to 1956. He, along with other farmers of the area, took to Japanese method of paddy cultivation in 1950-51 and adopted hybrid seeds a few years later. His latest preference is the new high yielding strain, IR-8, which yields bold, white and nutritious grains. He uses NPK in the ratio of 40, 25 and 20 kilos respectively per acre and 10 kilos of seed to an acre.

Pesticides are his armour against pests and crop diseases.

This year Colaeo has cultivated paddy in about 18 acres under the Zila Parishad's 'Crop Guarantee Scheme' and hopes to raise 30 to 40 quintals of paddy per acre, favourably comparing with all-India record yield by this year's winner of Krishi Pandit award.

Before taking seriously to agriculture, Colaeo used to grow betel leaves which had a good market in Pakistan. But with sudden ban on imports by that country, he turned his attention to rearing of buffaloes. This he did for about eight years with a view to supplement his farm income.

Now with a loan from a nationalised bank Colaeo has installed an electric pump on a nearby stream to draw water for his fields. Assured of regular water supply he intends to grow vegetables which have an ever ready market in Bombay.

APPLES PAY THEIR WAY

Narain Singh Negi of village Kothi in Kinnaur district of Himachal Pradesh is a farmer who, defying the advice of the locals eight years ago, ventured on apple cultivation on a piece of wasteland then considered to be the best suitable for grain production. Today, Negi with about 600 plants in his orchard carved out of that 6 acre wasteland, is the proud winner of this year's first prize in all-India apple competition. He had earlier held the first prize shield for two successive years in the competitions for apple cultivation organised by the State Government.

Making full use of the advice of the block development authorities, Negi stuck to apple growing and marketed the produce himself at Rs 72 per crate. He has also been selling saplings to other apple growers in the area.

Following his example, better part of the wasteland in his district has now been brought under apple cultivation.

BASTAR DISTRICT LEADS IN FAMILY PLANNING

Bastar district has secured the top position in Madhya Pradesh in sterilisation operations which came to about 12 per 1,000 persons in the area. The Bijapur Primary Health Centre in the district got to the first position in sterilisations, with 55 sterilisations per 1,000 persons.

In recent years the *Mukhias* of the tribal villages have shown extraordinary interest in family planning. The old women too are coming forward to tender advice to young ladies.

According to one report two old women of village Narayangarh, Raftam district, motivated their daughters, who had come to their home village for delivery thrice, to limit their families by undergoing tubectomy operations. These ladies were eventually operated upon at the Primary Health Centre at Sailana.

TRAINING SUPERVISORS

from Page 22

of training are general in nature. Many companies would probably have to admit their inability to justify the expenditure involved.

There are large areas of supervisory functions where it is not even easy to set precise standards of performance. This makes the evaluation of the effectiveness of supervisory training schemes particularly difficult. However, periodic and systematic evaluation is essential as this helps in creating a more realistic attitude on the part of the managements as well as the participants.

The project method of evaluation has been accepted by participants as well as managements. At the end of a training programme, each participant chooses a problem which admits application of techniques discussed during the training course. The selected problems are analysed and necessary data gathered in order to find out solutions. A report is prepared stating the problems, the information collected and the recommendations. The report is examined jointly by the trainer and the managements with a view to assessing the practicability of the recommendations. In most of the cases, the recommendations are implemented with significant benefits to the organisation. Training courses with provision for project work have become very popular.

Various aspects of the training programme such as contents, methods

of presentation, training aids and instructors can be evaluated with a view to effecting improvements. Separate rating sheets are prepared and used to assess the effectiveness of important constituents of a training programme. It is desirable to do the rating at various stages of the programme and to use the results for improving the programme in progress. It is not very helpful to carry over the evaluation results of one programme to improve the next programme, though this can be done to some extent. Immediate implementation of evaluation results is appreciated by the participants and facilitates improvements on the existing programme.

The participants of training courses are invited to a meeting with the trainer about three to six months after the completion of the programme. Senior management personnel are invited to be present at the meeting as observers. The trainer gathers information from the participants regarding the utility of the programme. The participants report the efforts they have made to use the ideas learnt in the training programme in carrying out their duties. They also state as specifically as possible the benefits they have derived from participation in the programme. It is very encouraging to find that several participants do use the ideas they have learnt. Where their work situation does not

permit the application of techniques, the situation is examined by the senior management with a view to providing facilities and encouragement for introducing improvements.

During the last 25 years, the importance and influence of supervisory training have steadily grown in all the highly industrialised countries. A considerable amount of work has been done in studying supervisory practices, assessing training needs, designing programmes, preparing materials and evaluation methods. These countries continue to evince interest and take initiative in improving supervisory development programmes. The concepts and work of advanced countries in this field can be of great help to the developing countries, like India, where economic development is creating an ever-increasing demand for competent supervisors. Experience shows that economic development in backward countries is often hampered by the lack of trained personnel. Authorities are prone to concentrate on mobilising physical resources, and to neglect the training of persons for key positions. In view of the fact that supervision plays a key role in raising productivity the first essential task lies in extending supervisory training to all areas of economic activity. The next step is to improve the work environment of supervisors. These are the challenging tasks facing the country.

PRODUCTIVITY IN SMALL INDUSTRIES

from Page 18

With the generation of productivity consciousness, quite a few small firms are following the techniques of Work Study and Operations Research, and have achieved productivity similar to that of the large and medium industries. Several thousand small firms have sought advice from the Small Scale Industries Development Organisation. The advisory service of the National Productivity Council and the Development Commissioner, Small Scale Industries Organisation, on Work Study and Operations Research has raised the overall labour productivity of some small-scale units by 30 per cent to 50 per cent. Many small firms, besides making contribution in their own right, provide service to industry at large by supplying such things as components, specialised materials, inter mediate products and special purpose plants.

Small industries are known to be labour-intensive,

and, therefore, can hardly afford to introduce sophisticated techniques of production. Secondly, the definition of the small-scale unit will also not allow such a process of production which increases its ratio of investment per rupee of output. However, this does not mean that small industries are depending upon obsolete machines and equipment. The National Small Industries Corporation has supplied both imported and indigenous machines worth about Rs 40 crore to small-scale units throughout the country. From all standards it is justifiable to evolve appropriate technology to increase productivity of small-scale units without having repercussions on the employment potential of this sector. The country has achieved a certain stage of economic growth where it is possible to shift to mechanised or semi-mechanised small industries programme, adopting higher technology under proper institutional support.

LETTERS

PARTY APPROACH TO PLANNING

I am glad to receive the latest issue of *Yojana* after a lapse of nearly three months. It is very difficult to wait for *Yojana*, once accustomed to read it regularly.

Though *Yojana* seeks to carry the message of the Plan, it is not restricted to the official point of view. It means *Yojana* transcends the Government interpretation of the Plan.

The Indian people are now on the eve of electing members for the Lok Sabha, which will become the final authority to sanction the Plan and its various programmes. *Yojana* can play a vital role at this historic moment: All the important Political Parties have come out with their manifestoes. Each manifesto contains the Party's approach to the Plan and planning. The common man has necessarily to think about the various approaches and has to decide on the Party which will ensure progress and prosperity through planning. *Yojana*, therefore, can give its readers in the coming issues comprehensive picture of the various Party approaches to the Plan and planning, so that readers can understand correctly what the Political Parties mean about the Plan.

D. V. Subramanya Swamy

Tiptur, Mysore

We appreciate reader Subramanya Swamy's interest in *Yojana* and regret that due to printing difficulty the journal has not been coming out regularly. We hope to resume normal publication soon.

As regards the interesting suggestion made above, we feel that much as we would like to publish different views on planning close to the mid-term poll, we would not be able to bring out the issue containing such views at the appropriate time. To publish these later would be outdated and needless.

Chief Editor

YOJANA IN KANNADA

Permit me to say that *Yojana* is undoubtedly one of the best journals published in India, and I am sure the majority of your readers all over the country and abroad will agree with me.

The idea of bringing out this journal in the regional languages is very laudable indeed. In bringing

HAWKERS' COOP IN JUHU

AVINASH R. GODBOLE

Our Bombay Correspondent

BOMBAY'S Juhu beach with its colourful crowds and fair-like atmosphere is a big attraction to the city's population as well as tourists. Though Juhu always had its crowds, the scene was not quite the same, say, a couple of decades ago. It used to be a lonely, deserted and even dangerous place after dark; there were no lights and the hawkers used to beat a hasty retreat much before the waves changed their hue from Elephanta gray to Ellora black. Today, Juhu has a thriving little colony of shops and restaurants, catering to the needs of large holiday crowds.

The man mainly responsible for this transformation is R. Revdandkar, a tireless social worker, a Gandhian and a staunch upholder of the co-operative movement. In April 1961, Revdandkar organised some 44 hawkers into the Juhu Rahivasi Hawkers' Co-operative Society, with a small capital of Rs 500, divided into ten-rupee shares. During the past ten years the membership has grown to 83 and the busy market now is the envy of more organised traders elsewhere in the city.

Only hawkers who made their living on the Juhu were allowed to become members of the Society. With more members coming in, the Society had to look for a bigger plot. They succeeded in getting a 12,000 sq. ft. plot, named the "Flying Gap", from the Civil Aviation authorities. Though the annual rent was initially fixed at Rs 4,000, the Civil Aviation authorities raised it to Rs 14,000 a year due to competitive bidding from the city's shopkeepers and commercial establishments.

The stalls, constructed in three

out the regional language editions of your journal, kindly consider the claims of Kannada, an ancient language with a rich literary heritage, which is spoken by about 2 crore Indians.

Undeniably the claims of the regional languages are hard to re-

rows, were classified into three different categories and the rent charged according to space. During the initial years the shopkeepers had to use petromaxes to light their shops. Fortunately, the Maharashtra State Co-operative Bank came to their rescue. The Bank offered the Society, without any formal security, an advance of Rs 35,000 on the condition that the Society collect Rs 2 every day from its members and deposit the collection every week with the Bank. This was promptly agreed to, and on 14th January 1968 bright fluorescent lamps replaced the petromaxes. The Society has repaid the loan well within the stipulated time, there being no defaulters.

Soon afterwards a sum of Rs 2,000 was collected and the money used for getting water connection from the municipality. Through another Rs 8,000 collected from members, the Society also built a small hut to house their offices.

The Cooperative is run on a 'no profit' basis. As its promoter and Chairman Revdandkar explained, all the expenses are shared by the members proportionately. The rent is collected from members according to the space allotted to them. A small amount ranging from Rs 1.50 to Rs 2.50 is also collected for meeting expenses towards accounting, watchman's salaries and maintenance. All through these years the Society has been placed in Category 'A' by the Maharashtra State Co-operative Department by virtue of its performance, and quick repayment of loans. None of the office-bearers take any pay for their work.

The Society has arranged for making wholesale purchases and for distributing the supplies to the members at cost price, the members contributing towards incidental charges.

concile. Therefore, any addition to the *Yojana* family, however welcome, can only be on a planned basis. All the same, the claims of the Kannada language may be kept in view.

V. Srinivasa

Arsikere, Mysore.

THIS IS ABOUT ASSAM

Assam with her great potentialities
Is not only endeavouring her best
To increase the production of rice
But also producing wheat as a second crop.

Introduction of the high yielding varieties
Adoption of scientific methods in farming
Have created faith in the minds of the farmers
And led the State to self sufficiency in food.

Cash crops are catching up farmers' attention
Jute is producing a record yield
Potato and oilseed production is making the way
To open new avenues for agro-based industries.

Thus Assam is already in the race of green revolution
Promising a stable economy to the people.

Issued by the Agricultural Information Officer, Shillong, Directorate of Agriculture, Assam.

KHADI AND VILLAGE INDUSTRIES IN INDIAN ECONOMY

- * 21 lakh persons are gainfully employed
- * Rs 105 crore worth of goods produced in this sector—Rs 26 crore in khadi and Rs 79 crore in village industries
- * Rs 27 crore distributed as wages
- * The programme is spread in 1.25 lakh villages all over the country

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Khadi and Village Industries Commission
Bombay-56

BOOKS

Gradual Change from Tradition to Modernity

The Modernity of Tradition : Political Development in India : by Lloyd I. Rudolph and Susan Hoebler Rudolph : Orient Longmans Ltd. Pages 306. Rs 20

C. N. Chittaranjan

The impact of modern ideas and norms on traditional societies necessarily leads to resistance, adjustment, assimilation; the process seems so natural and so much part of our lives that it appears redundant to engage in dedicated research on the subject. Yet the work of the authors, who have analysed the changes that have come about in the behaviour and status of certain caste groups over a period of time and have tried to show how the transformation of segments of Indian society has contributed to the growth and development of the Indian variety of democracy, can hardly be dismissed as a pointless exercise. Perhaps they have taken on too wide a canvas extending from social stratification to law and beyond. But they certainly have done an honest job of it, and provided a valuable guide for those seeking to understand the basic elements of the process of modernisation;

The essence of the argument projected here is that the tendency in India has been towards transformation of traditional corporate structures rather than towards their supersession or elimination; in other words, change has been gradual and more or less imperceptible. The example of caste is cited to show that the most retrograde of the country's social institutions has not only survived despite the inflow of ideas of equality and fraternity but has in fact played a part in shaping political democracy "by helping India's mass electorate to participate meaningfully and effectively in it." But then caste has played havoc with politics in several States, often pushing ideological-economic considerations to the background—although, no doubt, it

can be argued that economic interests too have had a not negligible part in the process of adaptation of the caste structure to modern institutions. The legitimacy of traditional authority is everywhere under challenge; even the widely discussed phenomenon of Naxalism represents in essence such a challenge. But attempts to make use of caste loyalties as well as barriers for political purposes and for economic domination continue side by side.

In a chapter devoted to the politics of caste the authors draw attention to "the blurring of lines between natural and voluntary structures". Even so, the conclusion that "castes have not demanded separate political identities" is only true in the sense that territorial units based on caste have not been sought. Otherwise, the appeal to caste loyalty has been a major factor in the shaping of politics. If unlike language groups or tribal people castes have not been organised to demand separate political identity, it is only because castes are distributed in all the language groups and caste affinity can hardly override linguistic or regional affinity based on economic and social relations. However, the authors have kept in view the creation of destabilising factionalism within political parties as a result of caste rivalries.

The authors have come to the conclusion that "caste is losing the functions, norms and structure once associated with it and acquiring new ones." Expanding ascriptive boundaries, the rising cultural level and status of the once-lower castes, Westernisation and secularisation are factors pushing the Indian people towards greater equality. At the same time, as M. N. Srinivas has pointed out, caste bonds and caste attitudes surface "in surprising contexts" even among those who otherwise have accepted Western and secular values. The authors thus say that "the Indian dilemma, the contradiction between public ideology and private commitment" remains. Noting that untouchability is not

dead despite the constitutional prohibition of its practice, they point out: "Vertical mobilisation by dominant castes, horizontal mobilisation by caste communities and differential mobilisation by parties, even those with revolutionary ideas, will not easily produce revolutionary consequences among India's untouchables." The course of the current land agitation can show whether or not this prognosis is entirely valid.

The second part of the volume deals with the impact of Gandhi and his ideas on political and social thought. To the Indian reader this part has little new to offer, although the familiar ideas are tersely presented. The third and final chapter deals with traditional and modern justice, the contradictions and similarities between the two. The essential difference is that while the newly introduced British court would have to find one of the contending parties in a lawsuit guilty, the traditional tribunals could find both parties guilty in some measure and work out a compromise satisfactory to the village community as a whole. Consensus rather than condemnation or exoneration informed the proceedings of the panchayat. But the dissenting individual in the village would have to accept the verdict whether he considered it just or unjust. So far as law is concerned, it was first under Brahmin or Sanskrit domination and then came to be Anglicised: in both stages the law reflected the norms of the elite classes and not the conduct of the bulk of the population.

The conclusion from all this is that traditional structures and norms have been adapted or transformed to meet the requirements of a changing society. Adjustment and coexistence rather than conflict and incompatibility are seen as the essence of the situation. But the question whether such coexistence can continue and conflict be avoided if social and economic disparities are not more speedily eliminated remains unanswered.

Working of Crop Loan System

Crop Loan System: A study in Andhra Pradesh and Punjab; by T.P.S. Chawdhari and J.N. Sharma. Published by the National Institute of Community Development, Hyderabad, 1970. Pages 101. Rs 12.

J. S. Kochar

A major recommendation of the Rural Credit Survey Committee was that the provision of short-term credit should be based on the Crop Loan System so that the loans would be for productive purposes, their aims would be based on estimated outlays of raising the crop, disbursement would be in kind to the maximum extent possible and recoveries would be affected from the sale proceeds of the crop raised. This was expected to enable greater agricultural credit to reach large sections of cultivators. These principles were endorsed at the conference of State Ministers of Co-operation in April, 1955. While some progress was made in the coverage as well as the volume of cooperative credit in subsequent years, the pace of increase was found inadequate in relation to the effort required to step up agricultural production.

At the same time a Committee on Cooperative Credit was appointed under the Chairmanship of the late V. L. Mehta to go into the question of production credit provided by cooperatives. The Committee amplified and elaborated the emphasis of Rural Credit Survey Committee on the adoption of the crop loan system and made a number of recommendations to help all cultivators irrespective of whether they were owners or tenants, to obtain adequate production credit from cooperatives. Many of these recommendations for bringing about the expansion of cooperative credit and its progressive orientation to production needs came to be further sorted out in the Action Programme for cooperative credit which was drawn up in 1963 for encouraging the cooperatives to provide adequate support, on the credit side, to intensify agricultural programmes. By and large, it can be said that the basic principles of the Crop Loan

System have come to be accepted at the policy-making level in each State.

The book under review is a pilot study attempting to analyse the nature and working of Crop Loan System in two States, Andhra Pradesh and Punjab. It seeks to highlight some of the important aspects connected with the supply of and demand for crop loans, the procedure for preparation of the maximum credit by the cooperative institutions, the adequacy and the utilisation of the crop loans, the extent and nature of extension guidance as well as some other related aspects in selected intensive and non-intensive agricultural districts in each of the two States.

The Study relates to the agricultural year 1968-69 and it covers the districts of Krishna (Non-IADP), Guntur (Non-IADP) and West Godavari (IADP) in Andhra Pradesh and Jullundar (Non-IADP), Ferozepur (Non-IADP) and Ludhiana (IADP) in Punjab. It covers some

important aspects connected with the Crop Loan System, like the extent of ownership, nature of crop loan borrowings, crop loans in relation to resource deployment and productivity, operational aspects, like preparation of credit limits, difference in crop and crop averages, borrowings by seasons etc.

In spite of the limitations such as the confinement of the study to a single agricultural year, the data relates to crop enterprise only. In the case of Andhra Pradesh, the data on crop loans are only for the 'Kharif' season, 1968. Lack of proper maintenance of records by the cooperative societies and the member bias of the respondents were the other difficulties faced by the authors.

The study would, however, serve a useful guideline to those who are directly or indirectly connected with the problem of financing agriculture in developing countries like India. Farmers in order to produce more have to spend more on improved inputs which could be financed either out of saving or out of borrowings.

Business Economics Without Tears

Managerial Economics: by P.L. Varshney and K. L. Maheswari. Published by Sultan Chand & Sons, Delhi-6. Pages 300. Rs. 11.

S. Radhakrishnan

Managerial Economics is a recently developed interdisciplinary behavioural science, which has practical application in the business world. It is micro economics with principles from statistics, mathematics and accountancy applied to certain business situations at the firm or industry level. It is a practical oriented study which helps managers in decision making.

With profit maximisation as the sole objective of a firm or industry, the business manager has to be armed with the necessary tools of analysis in deciding the price or the volume of production under different market situations. The variables involved in decision making are many and where they can be quantified, the analytical tools do help in a fair

measure in taking business decisions which may produce results not-too-far-off the mark. With profit maximisation as the objective function, the manager has to be familiar with forecasting demand for his product and, depending on the market situation he finds himself in, decide on the level of output or price. Business decision making has become so scientific that one need not go by either intuition or some rough rule-of-thumb method. Closely related to the problem of pricing and output is the appraisal of projects from the point of their profitability.

The book, though elementary, is a good introduction to this vital branch of business economics. The concepts such as forecasting demand, breakeven point, project appraisal, budgeting etc. have been explained with clarity and simplicity, with examples drawn from Indian situations. To those un-initiated in mathematics, here is an important branch of study of practical value which can be learnt without tears.

Stories of Men of Courage

Men Who Defied Danger by Hermann Ziock. Translated by Leela Isvaran. Published by Thomson Press, Delhi. Pages 129. Rs 10.

Mala Singh

"Men Who Defied Danger" is a small book containing seven short true adventure stories written by the German journalist Hermann Ziock and translated by Leela Isvaran. The stories are all vividly related, the suspense and the reader's interest being maintained from the first sentence till the last. The situations chosen are all rather bizarre; from being force-landed in the middle of an ocean or desert with no apparent hope of rescue to inadvertently travelling with a psychopath. The author uses a simple, terse style with telling effect. The atmosphere is built up by graphic descriptions which reflect the bleakness of a particular situation. In the story "Thirst in the Desert" Ziock's description of the desert—"a world of infiniteness, emptiness, silence, a world without echo..."—mirrors the loneliness and isolation of the men stranded in the middle of a desert by a plane-wreck. His heroes are quiet heroes, not flamboyant martyrs. When faced with the prospect of death—an unglorious death through starvation or dehydration, a slow wasting away—his heroes show tremendous courage, never any fatalism or a wish to give up.

Another theme that seems particularly to fascinate Ziock is premonition. Three of his stories, "African Nightmare", "Premonition", and "A Weird Night" centre around this subject. "African Nightmare" is built round the premonition of death while the latter two stories deal more with just a premonition of some danger or disaster. Ziock tries to explain that though premonition has no rational foundation, it is often impossible to suppress—"I tried to conquer fear by reasoning, but fear is stronger than reason."

The only superfluous element provided in a book of this small size is the foreword. The Indian addition to forewords has always perplexed me and in this particular

book a foreword by Nirad C. Chaudhuri, whose field is entirely different, seems more than usually unnecessary. Even Mr Chaudhuri seems bewildered at having been asked to write an Introduction.

Hebrew Prophets

The Message of Hebrew Prophets by Dr Anjilvel V. Matthew, Bharatiya Vidya Bhawan, Bombay. Pages 223. Rs 3.

S. Prasad

The book, forming part of the Bharatiya Vidya Bhawan series to create a common pool of literature for reinstating the dignity of man, opens with an apt Vedic quotation "Let noble thoughts come to us from every side". The side represented in this book is the Hebrew Prophets against the setting of ancient Israel. The writer, Dr Matthew, who is introduced by Mr K.M. Munshi as a well known student of religion, has the advantage of a comparative study of Hindu scriptures. Dr Matthew, at the very outset, makes it clear that although the Prophets were God's spokesmen, they were not delivering astrological predictions, as is regarded in some quarters. They were only carrying to the people what they were confident was God's message. But, in doing so, they remained human. The book is divided into four parts, covering the life of the Prophets, their views of God and Man, and their hope for the future.

What is the hope conveyed by these men who are supposed to have delivered their message about the same time as the Hindu scriptures were composed? They said that Jehova was about to do new and wonderful things. In the words of Isaiah: "I will make a way in the wilderness and rivers in the desert."

The Hebrew Prophet's sayings have more in common with the Upanishads than with anything else, says the author. This, in itself, should enhance the appeal of the book to readers who would like to turn more to things spiritual, rather than temporal.

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FLOWERING SHRUBS IN INDIA

by

S. L. Jindal

25 x 16 Cms. Pp. 178; Rs. 30

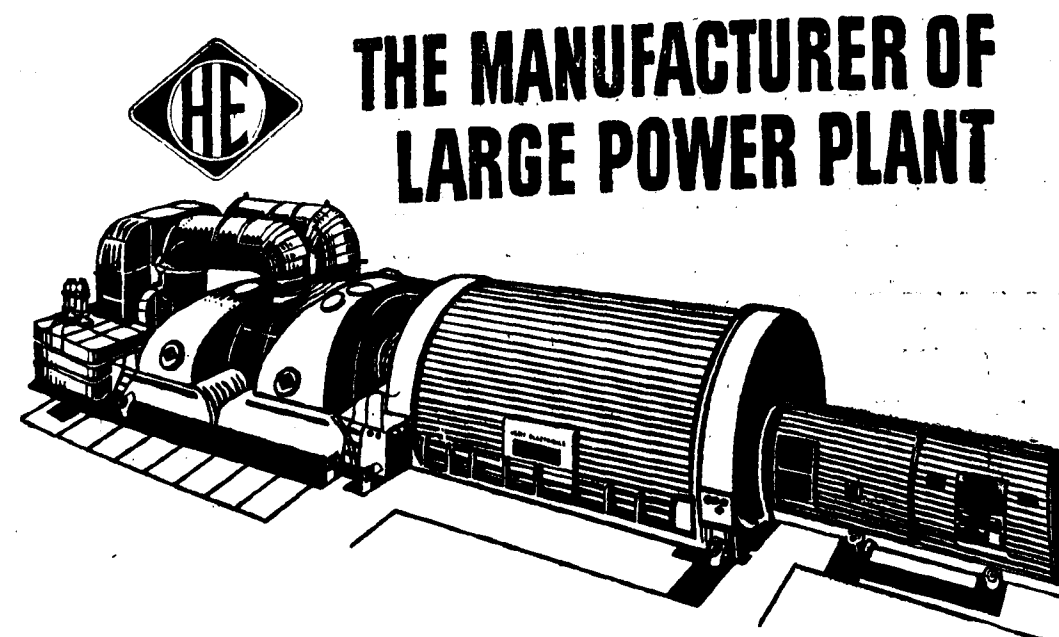
Written by a leading Indian horticulturist the book deals exhaustively with the subject and in a style that will appeal to technician and layman alike. Nearly two hundred species of flowering shrubs grown under different climatic and physical conditions in India are covered. A large number of photographs, many of them taken by the author, have been included to help readers identify the lesser known plants.

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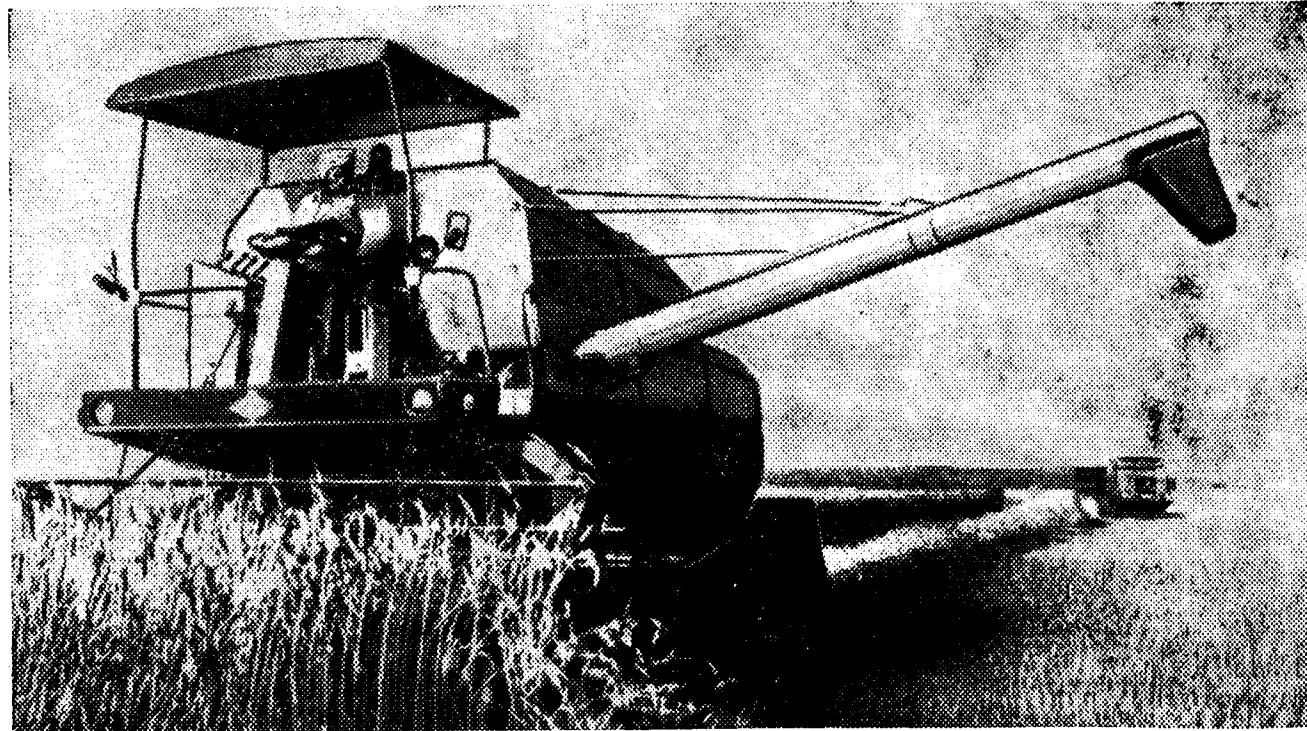
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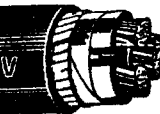
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SPLIT ARMATURE TELEPHONE RECEIVER

R. Das Gupta, M.S. Jayasimha, K. Sitarama Rao and R.Y. Narayan of the Indian Telephone Industries, Bangalore, have successfully developed a new telephone receiver which, besides having a higher sensitivity and uniform audio-frequency response up to 3 KC/s, is relatively inexpensive and easily serviceable. This development has won for the inventors an award of Rs 8,000 from the Inventions Promotion Board—the second highest award so far given by the Board since its inception in 1960.

The conventional receivers leave much to be desired in regard to sensitivity and clarity of reception. In these receivers the magnetic sensitivity—an essential requisite for clear reception is severely limited. Moreover, the magnetic diaphragm in these receivers is required to perform both the magnetic and acoustic functions, which further inhibits the efficiency.

The inventors have succeeded in segregating the functions of the magnetic diaphragm and also simplifying the structure of the existing receiver. The novelty of the invention lies in the use of a split armature which relieves the diaphragm of its conventional duty of electromagnetic response, thereby giving it full freedom for acoustic function only.

The new telephone receiver has only 14 components as against 28 in the conventional one, and as such, it is lighter in weight (35 gm) and cheaper in cost than the older types. The use of imported components has also been curtailed.

Because of high sensitivity of the new receiver, it will now be possible to use telephone cables with reduced diameter conducting cores, thereby effecting appreciable saving in the cost of transmission lines. (Over 60 per cent of the cost of a telephone system goes for underground cables).

The split armature telephone receiver has been approved by the Posts and Telegraphs Department, the Railways and Defence. The ITI has already supplied a few lakh units to these departments, besides

exporting a sizable quantity to Ceylon and Far-East.

Besides India, this invention has been patented in West Germany, UK, USA, Canada and Belgium.

HEIL Manufactures Salient Pole Generator

The first 3125 kVA Synchronous Salient Pole Generator has recently been successfully completed and tested by Heavy Electricals (India) Ltd., Bhopal. Rated at 3125 kVA, 2500 KW, 0.8 PF. lag., 440 Volts, 4100 Amps. 3 Ph., 50 Hz., 4 Pole 1500 rpm, the machine was entirely designed and developed by HEIL engineers. This is first of the eleven generators of 2.5/2.0/1.5 MW rating being supplied to M/s Triveni



Engineering Works Ltd., Naini, Allahabad, who are manufacturing the matching steam turbine and speed reducing gear-box. Comprehensive tests have been carried out to prove compliance with B.S. 2613 to which it is designed. The tests included a series of sudden three phase short circuits on the stator terminals and an over speed test. These yielded valuable design data, which will serve as a guide for future designs and development.

MICO Export More

Exports of Motor Industries Co. (MICO) touched an all time high of Rs 8 million in 1970, as against Rs 5.8 million in the previous year. The bulk of the exports were made to West Germany. Other importing countries were the United Arab Republic, Ceylon, Singapore, Malaysia, Thailand and the Philippines.

Dunlop India's exports in 1970 crossed the Rs 3 crore mark. This

Record Dunlop Exports in 1970

is the highest ever achieved by any tyre company in India. The Company exported to 63 countries in the face of stiff international competition and registered an increase of more than 9 per cent over its record performance in 1969.

A major item of Dunlop exports was cycle tyres. Nearly a million cycle tyres were shipped in 1970 to the US and a number of other countries. Dunlop India is the only manufacturer in the country to have developed a special range of cycle tyres exclusively for export to the sophisticated American and West European markets; the newest in the range is Dunlop Silk, introduced in 1970. A new design of OTR tyres for earthmoving machines and two types of cycle rims, introduced in 1970, were well received in overseas markets.

Amongst other products exported by Dunlop India were tyres for earthmoving equipment, tractors, trucks and buses, light trucks, cars and motorcycles, scooters, aero—tyres; cycle rims; rubber solution; fan and vee belts; transmission belting and braided hose.

Automatic Roasting and Packing Plant

An automatic roasting and packing plant has been set up in the Kandla Free Trade Zone in Gujarat. The plant, which produces oil-roasted, salted and vacuum-packed cashewnuts, peanuts and mixed nuts, is in the private sector and is owned by M/s Milak Brothers, Bombay. The nuts are packed in tins containing 200 grams each and polybags containing 65 grams.

Spurt in Bhadravati Steel Output

During the period from April 1, 1970 to December 31, 1970, the total turnover of Mysore Iron & Steel Ltd. (MISL) at Bhadravati, amounted to approximately Rs 13 crore, of which special and alloy steels contributed about Rs 7 crore. The production of special and alloy steels in the electric furnaces reached a record of 5,300 tons in December, 1970.

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Development Diary

* A special corporation known as the Credit Guarantee Corporation of India Ltd., has been set up to cover loans given by commercial banks and other financial institutions to small borrowers in both the priority and neglected sectors of the economy.

* Under a contract signed with M/S Medexport, Moscow, the Indian Drugs and Pharmaceuticals Ltd., will export surgical instruments worth Rs 3 lakh to the Soviet Union.

* The Trombay unit of the Fertiliser Corporation of India produced 19,000 tonnes of urea during the quarter ending December 1970. This is about 3,000 tonnes more than the target.

* UNDP has sanctioned 3.46 million dollars as aid for four new development projects and for one already existing in India.

* The Hindustan Machine Tools has signed an agreement with the Czech trade company Motokov for the assembly and manufacture of Zetor tractor at Pinjore in Haryana. The Rs 50 crore project, to which the Czechs will contribute Rs 5 crore, will turn out 12,000 tractors a year, each costing not more than Rs 19,000.

* A testing laboratory for boilers, claimed to be the first of its kind in the country, has started functioning in Calcutta.

* India received a total of 2.44 lakh tourists during 1969, registering an increase of about 300 per cent on the arrivals in 1957. The foreign exchange earnings from tourists totalled Rs 33.11 crore in 1969 which is about two and a half times more than the earnings in 1957.

* The Union Department of Agriculture has finalised arrangements for the procurement and airlifting of 2,570 Rambouillet sheep from the USA. All the consignments will reach India by the end of January 1971. The total cost of procurement and air-shipment of the sheep will be met from US AID non-Project loan.

* The foundation stone of the third public sector cement factory to be set up by the Cement Corporation of India has been laid down at Bokajan, in Assam. The Rs 10.71 crore plant, being set up with indigenous machinery, will have a production capacity of two lakh tonnes of cement per year with two kilns capacity of 300 tonnes a day each. It will meet the acute shortage of cement in the eastern region and also avoid long distance haulage from surplus areas.

* India's first commercial satellite communication earth station at Arvi near Poona has been completed by the Atomic Energy Department.

* A 1,600 Kw. ventilation fan, indigenously made and one of the biggest fan in the coal-mining industry, has been installed at Sudamdih Colliery of the National Coal Development Corporation.

* Out of 36,116 villages and towns in Maharashtra, 12,230 have been electrified and more than 200,000 agricultural pumps energised so far.

* Preliminary Geological Surveys have revealed huge bauxite deposits at a number of places in the Kolaba district of Maharashtra.

* India and Jordan have signed a Protocol extending the Indo-Japan Trade Agreement for a further period of three years until December 31, 1973.

* Large reserves of underground fresh water have been found in many areas of northern and eastern parts of Rajasthan.

* The Defence Research Laboratory (Materials), Kanpur, has developed Volatile Fungicidal Tablets for preventing fungal growth which leads to deterioration of packed materials. The tablets will also be useful for packing electronic components, optical and other instruments susceptible to fungal deterioration. The main raw materials needed for preparing these tablets are easily available in the country.

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