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Industrial Development in the Madras State.

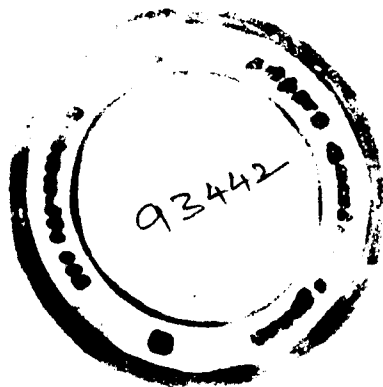
BY THE HON'BLE MR. C. PERUMALSWAMY REDDIAR,
Minister for Industries, Madras.

The subject of Industrial Development is far too wide and comprehensive to permit being handled with any degree of thoroughness within the compass of this brief talk. I propose therefore to confine myself to the more important aspects of policy instead of entering upon any discussion on questions of mere technical or statistical importance.

The problem of industrial development conceived as the promotion of production of goods is fundamental to our national economy. It is next in importance only to the production of food and power. The promotion of production of industrial goods entails, however, stimulation of demand for those goods at an appropriate level. But the demand for industrial goods cannot outstrip the purchasing capacity of the consumers. It will be agreed therefore that plans for increased production of goods will be defeated unless the purchasing power of the consumers is also correspondingly increased. I cannot therefore too strongly stress the importance of the means which we may adopt for securing increased production of goods. Centralisation of the means of production may conceivably lead to increased production; but it will bring about concentration of wealth in the hands of a few only and will leave the masses of consumers as impoverished as ever. Consequently the consumption of the goods produced will go down and this in turn will necessitate curtailment of production. I consider therefore that in an underdeveloped country like ours, with depressed standards of living, it is essential that all such means of production as will bring about widest diffusion of economic power should be preferred wherever possible. Another aspect which cannot be ignored in a consideration of our objectives is the conservation of our resources. With a continually expanding population, it is imperative that our limited resources should be husbanded with utmost care. This is to ensure that when the fullest measure of industrial development is reached, the coming generations are not handicapped

for want of adequate supplies of raw materials. Our policy of industrial development must therefore aim at maximum production of goods—capital and producer—by the adoption of means which will provide for the widest diffusion of economic power and involve the minimum wastage of our resources.

Within the framework of the policy I just indicated, one of the major controversies of industrial development, namely, large scale versus small scale and cottage industries, will present no serious difficulty of resolution. Our present task being more and more production, there is room for every type of industrial undertaking. Increased accent must however be placed on the small scale type of production. Thereby we can ensure widest devolution of economic power and largest volume of employment. This will increase the purchasing power on the part of the consumers without which increased production cannot be sustained. There are however certain lines of industrial production which are not susceptible of development on small scale basis. But in spheres where both large and small scale industries are engaged in the production of same categories of goods, the need of integration becomes of paramount importance. Perhaps in regard to no other aspect of industrial development has the State to intervene more actively and decisively than in regard to the integration of the interests of large and small scale industries. Otherwise several of the small scale industries will have little chance of survival when conditions of controlled economy do not prevail. It is necessary for the State to assign definite quotas and spheres of production to the small scale and large scale industries and also prescribe the lines of production and types of units to be set up. The State will have to bestow a greater measure of fostering care on the small scale industries than on the large scale establishments, whose resources are in most cases sufficient for effective functioning without any active aid on the part of Government. And in the



process of promoting small scale industries, the interests of the consumer are not to be lost sight of. It will both be justified and necessary on the part of the State to enjoin obligations on the small scale industries no less than on the large scale units, requiring increased productivity, and improved quality of their products.

Industrial development in our country has on the whole been far from insignificant. With the advent of Independence, it was anticipated that the long arm of political power would be utilised to secure industrial development by leaps and bounds. Although the conditions of the Second World War and the post-war period provided the most favourable climate for industrial development, the pace of development has however considerably slackened after the attainment of our independence. The chief cause which retarded the progress of industrial development was the partition of the country which had resulted in dislocation of the sources of supply of industrial raw materials, disruption of the internal markets, and disequilibrium in our national economy. I fear that until the economy of the partitioned India acquires integrity and stability as firm as those of the economy of the undivided India, our industrial development may not be able to recover its fullest tempo.

Criticism is also often levelled against Government for the uncertainty of its policies, particularly in regard to nationalisation, as also being responsible for retarding the progress of industrial development. This criticism can no longer have any force, now that the Planning Commission have clearly laid down that expansion of industrial production would be largely the responsibility of private enterprise. The State sector covers a very small proportion of the industrial field which is for the most part private. It is common knowledge that with deepening financial stringency of State Governments and want of trained personnel, nationalisation of industries is at present not a practicable proposition. I must, however, in this connection urge that while Government may not embark upon nationalisation by assuming ownership and management of industries, Government must still discharge its responsibility of securing speediest development of industries, as otherwise the functions of our Welfare State will remain

unfulfilled. Not only must Government set up new industries which are beyond the competence of private enterprise or in regard to which private enterprise continues to be shy, but it is the duty of Government to see that industrial undertakings in the private sector function fully and effectively. Ours being a Welfare State, merely because an industrial undertaking falls within the private sector, Government cannot remain aloof. They must exercise sufficient regulation and control as to secure the fullest utilisation of its capacity. Our policy therefore must be that while Government may not assume ownership and management of industries, Government must so regulate the working of the industries as to ensure the maximum utilisation of our productive resources and promotion of the best interests of our national economy. I therefore look forward to the early enactment of the Industries Development and Control Bill 1949, which has been recently introduced in the Parliament. This is a very essential measure designed to ensure the efficiency of industries and full realisation of their potentialities.

The most serious of the real handicaps in the progress of industrial development are the lack of technical knowledge and want of capital goods. Our dependence in these matters on the more highly industrialised countries of the West is clear and inescapable. A number of joint enterprises which have been set up in recent years by foreign firms in collaboration with Indian interests have been productive of most useful results. Criticism is not altogether lacking against the policy of inviting foreign investors to set up industries in our country. But I have little doubt that such criticism is based on little more than sentiment. Foreign investors have been assured of equality of treatment, facilities for remittance of profits, and of repatriation of capital, of fair and equitable compensation in case of nationalisation. But obligations regarding the training of Indians, disclosure of patented processes and eventual manufacture in India of all the component parts etc. etc. are also imposed on them in return. I very much hope that in pursuance of the policy regarding investment of foreign capital already laid down by the Government of India in clear terms, the Indian industrialists will secure the

collaboration of more and more foreign firms in the establishment of industries, especially those requiring special types of technical skill.

Another cause for retarding the development of industrial progress is ascribed to what is often called the strike of capital. The general decline in the savings of those classes which are accustomed to investments in Industrial enterprises has doubtless contributed to the impoverishment of the share market. The establishment by the Central Government of the Indian Industrial Investment Corporation and of similar institutions by the State Governments have to an extent relieved the existing undertakings of their financial embarrassment. Refunds of Excess Profit Tax Deposits are also serving to alleviate the financial stringency of the existing undertakings to an extent. While all these measures have served to help the existing undertakings, the flow of capital into new enterprises continues to be scanty. This situation can best be retrieved on the one hand by the active development on a comprehensive scale of small scale industries whose capital requirements are limited, and on the other, by the participation of the Central and State Governments in the capital formation of large scale undertakings sponsored by private enterprise.

While in the interests of the national economy, it is necessary that the State should regulate the working of the industries, I consider that in the interests of the industries on the other hand, obligations will have to be undertaken by Government as well as the consumer. Nothing perhaps so imperils the indigenous industries as unrestricted imports from the more advanced industrialised countries of the West. And the foremost obligation on the part of Government would therefore relate

to the regulation of imports in a manner that the indigenous industries are not adversely affected. I consider that discriminating protection is not enough. It is necessary that the flow of imports should progressively be restricted, allowing them to the extent only that the indigenous industries fail to cope with the demand. The indigenous industries should be afforded in the first instance full opportunity to produce goods according to specifications and only if they should fail to produce them would imports be justified. An active stimulus to industrial development should thus be provided by assuring the indigenous industries that if they would produce the requisite goods according to specifications, the import of such goods would be restricted. Not only should the indigenous industries be afforded opportunities to produce goods now being secured by imports, but they must also be given all the requisite facilities to produce them. Thus in regard to goods for the supplies of which we are dependent on other countries, I consider that Government should assume a positive function for the organisation of their production from the indigenous sources.

More important than all the measures, I have referred to so far is the role which the consumer has to play in the industrial development of the country. Without active patronage on his part our industries can never attain their full development. His preference for Indian goods should be inspired by a sense of national duty. The spirit of "Swadeshi" must permeate all aspects of industrial development.

I am confident that if the industrialist, the Government and the consumer play each their part as I have just indicated, the progress of industrial development will be greatly accelerated.

—By Courtesy, A.I.R., Madras.

CONTROLS.

"Controls are always irritating, but in the present state of affairs a planned economy—the policy pursued by the Congress Governments—is the only thing which will lead us to comparative stability.

"I know from experience, much as I dislike to administer some of the controls and in the form in which they are imposed, that if the controls had not been in existence last year, hundreds of thousands of people would have died like flies. If we survive today, it is because of our determination to have some sort of control over our economy in spite of the great difficulties inherent in such a system."—THE HON'BLE MR. K. M. MUNSHI.

Industrial Achievements of the State.

A General Picture of Industries in the State.

By SRI P. POLI REDDI, B.A.,
District Industries Officer, Madras.

The most important industries of the State are *Cotton Textiles, Sugar, Matches, Cement, and Soap*. The development of these industries has reduced the foreign imports to a marked degree.

The Cotton Mill Industry in Coimbatore has greatly expanded since the advent of electric power from Pykharu and the growth of these mills in the other centres also is on the increase. The Cotton spinning and weaving mills in Mettur for production of bleached mulis and dhoties have been stepping up their production, thus relieving the cloth scarcity to some extent. It is worth noting that Cotton Textile Mills have increased from 71 in 1949 to 86 in 1951, whilst 15 are now under construction.

According to the latest information available, the number of sugar mills in the State has increased to 12 with the consequent expansion of production to 65,000 tons. The number of Oil Expellers at present has gone up to 1298; Rotaries and Country Chekkus have also registered expansion, so much so, the State's needs of oil has already been exceeded. Six Vanaspathi factories are now in commission with a production of 31,500 tons per annum. Six more are likely to go into production shortly with an estimated production of 33,000 tons per annum.

There is a marked increase in the production of cement. Five cement factories are now working and as a result, the production of cement has increased so as to render the State self-sufficient in this essential commodity.

Mettur has become a centre for the development of Alkali Industry, Caustic Soda, liquid chlorine, bleaching powder,

hydrogen, and a few other chemicals being produced there.

The Indian Steel Rolling Mills at Nagapattinam produce billets of flats, rounds and squares. Sections of rounds and squares now in great demand for reinforced concrete works are also being turned out by the Mills.

Tile factories have also increased, their number being 89 during the previous year, and the production of tiles has correspondingly expanded.

There has been a steady increase in the number of Industrial Establishments in the State during the last four years and the number of workers employed therein has consequently increased, as evidenced by the following figures :—

There were 3,761 industrial establishments in 1947, 3,960 in 1948, 5,432 in 1949, and 10,061 in 1950, with 276,586 daily workers in 1947, 288,722 in 1948, 323,950 in 1949 and 391,457 in 1950.

A new venture of national importance, viz, the assembly of Motor cars, has recently sprung up in the State; Assembly of Standard Cars, Austin cars and Morris cars are the examples. Assembly of motor cycles and bicycles has just been projected and it will be an accomplished fact shortly. Assembly and manufacture of cheap radio sets and their components, of umbrellas, auto spare parts, mica products, are some of the other new industries established in the State. A very useful industry, viz, the manufacture of woodscrews, the only one of its kind in the State, has just been organised.

There are about 194 steel producing factories and about 150 foundries in the

State engaged in the production of consumer goods, small machine tools, oil engines, spare parts etc. In addition, the establishment of co-operative workshops for ex-service men in the State has also contributed to the expansion of engineering trade in the State.

The production of Cashew kernels on a large scale, tobacco curing and drying, fruit preservation and canning, the manufacture of confectionery, of Pharmaceutical products, glassware, plywood, tools and cutlery, slates and gold thread, scientific instruments, mechanical toys and dolls, fountain pens, toilets, essences, fertilisers and insecticides, paints and varnishes, cumblies and pile carpets, industrial alcohol, bone meal, starch, strawboards, rubber goods, non-ferrous metal sheets silicate, ribbon and carbon paper, form the more important small-scale industries developed in recent years.

Mineral resources.

The principal Minerals mined in the State are Manganese, Magnesite, mica, barytes, steatite (soap stone), gypsum, phosphatic nodules, and some quantities of corundum and asbestos. The first four minerals mentioned above are of much national importance.

The possibility of developing the Salem iron ores has been investigated for the manufacture of iron and steel, so essential for modern life. The minerals recently surveyed and investigated for their economic development in the several regions of the State include the following :—

1. Barytes in Kurnool District.
2. Coal in West Godavari District.
3. Copper ore in Guntur District.
4. Gold in Salem and Chittoor Districts.
5. Iron ore in Salem and Bellary Districts.
6. Quartz crystals in Chittoor District.
7. Sulphur in Chittoor District.
8. Road metal in Godavari District.
9. Lignite deposits in South Arcot and North Malabar.
10. Chromite ores in Salem.

Exports and Imports.

The export of certain strategic minerals from the State to foreign countries has not only earned for the country the much needed foreign exchange, but has also accelerated the mining operations in the State. They are mainly mica, manganese and magnesite. A few other minerals like barytes, phosphatic nodules, kyanite, etc. are also exported abroad. Exports of Agricultural produce, such as coffee, senna, sandalwood oil, lemon grass oil, castor oil, cardamoms, myrabolans, turmeric, fibre, cashew kernels, have risen to lakhs of rupees in 1950 over the figures in the previous years. Similar is the case with certain animal products such as bones, horns, hide-fleshings and hide-cuttings, hides and skins, Cotton textile goods are also exported to a limited extent. The Department of Industries and Commerce facilitates the exports by the grant of necessary recommendations or certificates, as the case may be. Most of the Industrial concerns seek to import machinery, spare parts, and essential raw materials such as special type of steel for engineering works, art silk yarn and rayon for silk industry, synthetic and natural essential oils for soap and toilet industries, flavouring essences for aerated-water works etc, plate and sheet glass for mirror manufacture, raw lenses and polishing powders for optical industry, white cement and marble chips for tile industry, plastic sheets and zip-fasteners for manufacture of plastic consumer goods, umbrella cloth and ribs for assembling umbrellas.

Industrial Development (State and Private) and the steps taken by the Government to promote it.

The State Government have pioneered a few large-scale industries of national importance under the control of the Department, as Commercial Concerns. These concerns also serve as model factories to private industrialists; they afford proper training to apprentices who can either secure employment in similar private enterprises or start small units of their own.

The Government Commercial Concerns are ;

1. The Kerala Soap Institute, Calicut.
2. The Government Oil Factory, Calicut.
3. The Government Silk Filatures, Kollegal.
4. The Andhra Paper mills, Rajamundry.
5. The Government Ceramic factory, Gudur.

The activities of the Kerala Soap institute include Commercial, experimental and instructional sections. Manufacture of soaps of all varieties, essential oils, cosmetics, oil refining, and extraction of Pyrethrum are undertaken in the Institute in addition to imparting instruction to the trainees in the various activities. Information regarding installation of soap factories, and plant for essential oil distillation is also being furnished to the public by the Kerala Soap Institute.

The Government Oil Factory has succeeded in evolving a reliable substitute for the foreign Cod liver oil, viz, Shark Liver oil, and the high potency oil, Adamin. The later oil is being packed in the form of capsules also. The production of Vitamin oil on a large scale both for human and animal consumption is being undertaken at the factory.

Silk Industry has received considerable attention of the Government in recent years. Raw silk yarn reeled from cocoons by machine as in foreign countries in the place of "Charka" silk yarn reeled by hand, is produced in the Government Silk Filatures on up-to-date methods "Throwing" or "twisting" silk yarn for weaving of silk fabrics would ere long be a new line of manufacture at the Filatures. Production and supply of ready-made warps to the weavers of silk fabrics straightaway would be introduced at the Filatures shortly by means of an up-to-date "Twisting Plant" sanctioned by Government.

The Andhra Paper Mills purchased by Government at a cost of 25 lakhs have

been re-organised. The factory's full production of 10 tons of paper per day has almost been reached. To improve production and quality, a German Expert has recently been put in charge of the Factory.

The Government Ceramic Factory at Gudur is manufacturing crockery and sanitary ware, exploiting the chief raw materials available locally, viz, Quartz, Felspar, Gypsum, and Lime shell. An electric tunnel kiln and other modern equipment will soon be added to the factory for better production of porcelain goods, especially porcelain insulators which would be a speciality.

The Government Coir Factory at Beypore (near Calicut) is run by the Department as a State trading concern. Coir, yarn, ropes, carpets, mats of attractive colour designs, brooms etc. are the manufactures here. The students of the Coir School attached to the factory undergo practical training in it. The main object of the factory is to teach the up-to-date methods of manufacturing coir fibre and utilising it for the production of coir stores, thereby stopping export of raw materials.

Besides the above established industries the Government have sponsored certain new industrial concerns, viz.,

- (1) The hydrogenation factory at Calicut for hydrogenation of oils on scientific lines, more for the guidance of the industrialists in the field.
- (2) The Oil Technological Institute at Anantapur, the objects of which are to provide for the modern technical guidance in the manufacture of pure oils and their by-products, such as oil cakes, raw materials for fertilisers, soap, paints and varnishes vegetable ghee and lubricants. Research and training of apprentices will also be the common feature of the Institute.
- (3) The establishment of a block glass factory at Gudur for the

manufacture of block glass to be supplied to the cottage industrialists, who produce glass bangles or beads on a cottage industry basis, has been sanctioned.

Technical Personnel

For the proper promotion of Industrial Establishments what is essentially needed is adequate number of technical personnel of different grades. The *eight* Government Polytechnical institutions with the Industrial schools attached to them and the large number of private industrial schools aided by the Government serve to spread industrial and technical education on a large scale and turn out a good number of skilled workers and artisans ranging from foremen, supervisors and low grade executives required by different industries of the State. Above 3000 to 4000 artisans are made available each year from these industrial schools to the industry. Intensive short-term courses of training in certain useful small-scale industries such as leather-tanning, leather goods manufacture, ornamental casting and metal work, pottery articles, coir working, spinning and weaving, bleaching and dyeing, glass bangle manufacture, have been introduced in the Government Institutions with a view to turning out practical skilled workers and artisans.

Financial Aid

As we are aware, finance is the major requirement for the promotion and development of Industries. The Government undertake to provide such assistance under the Madras State Aid to Industries Act in the form of loans, subsidy, overdraft, and subscription of shares. After the advent of the National Government there has been phenomenal increase in the number of applications for State Aid. Of the number of Industries aided so far under the Act, 9 industrial units received aid before 1946, 5 during the period 1946-47, 28 in 1948-49, 12 in 1949-50, and 18 in 1950-51. The Government, during the last four years, have given financial aid to the tune of Rs. 130,58,400, the aid

during the last year alone accounting for about Rs. 45 lakhs. The Government have also set up the Madras Industrial Investment Corporation Ltd. with a share capital of 2 crores, the Government themselves taking 51 per cent of the shares of the company, for affording to the Industrialists more financial facilities.

Procurement of Controlled Materials

Further assistance to the industries is rendered by enabling them to procure their requirements of controlled materials. Iron and Steel quota for Engineering work-shops and pig iron for the various foundries are allotted from the State quota. Establishments which do not obtain State quota are recommended to the Government of India for necessary allotments to them from the Central Quota periodically.

Industrialists are recommended to the Chief Controller of Imports for the grant of licences to import essential raw materials required for their industries. Other Controlled Commodities, such as sugar, flour, coal are also secured to the Industries by the issue of suitable recommendations to the concerned authorities.

The facilities thus afforded by the Department to the various industries in the State have given them the necessary fillip for steady advancement.

Standard Specifications for Exports

To maintain correct standard qualities for the products of Indian origin which are usually exported to foreign countries certain Standard Specifications for exports have been laid down by the Government so that these articles may hold their reputation in the International market. The following include the Commodities exported from the State under the Indian Standard Specifications :—

Handloom carpets, Writing Inks (containers, packing and marking) Brass padlocks, Slate and Slate pencils and Druggists.

Industrial Research

Certain researches designed to help industrialists in the State are undertaken in the Departmental Institutions.

The Research Designing Section in the Government Textile Institute, Madras is responsible for evolving modern designs for cotton and silk sarees, towels etc., and testing of yarn and cloth for their tensile strength.

The Ceramic section of the Government Ceramic Factory, Gudur undertakes testing of materials for the benefit of interested Industrialists.

Experiments for better preservation of Shark liver have been conducted successfully at the Government oil factory, Calicut with the result that the quality and quantity have improved. The factory has also been conducting experiments for the production of vitamin oil on a large scale.

Experiments have been initiated in the Government Sericulture section for evolving improved strains of mulberry, silk worms and for manufacturing silk-worm ligature guts.

The Departmental Institute of Leather Technology carries out research in the tannery and laboratory attached to it on the indigenous tanning materials with a view to replacing the foreign materials. Problems relating to the tanning industry are tackled and solved here for the benefit of the general trade.

A chemical laboratory has been started in the Department with the necessary technical staff to attend to the analysis of minerals and alkaline earths with a view to their utilisation for the manufacture of essential Commodities like Cement, Soda Ash and Caustic Soda. Starch-bearing tubers are also investigated. The results are useful and interesting to the Public.

Lignite, clays, chromite ores of Salem, cement samples, glass sands, earth for occurrence of petroleum products, shale coal, iron ores of Salem and Ochres have been analysed and the results communicated to the parties concerned.

Not only minerals, but also other raw products of industries are tested for their economic and industrial value.

Research work is carried on in the Departmental Soap Factory i.e., the Kerala Soap Institute, Calicut. A well-equipped

testing and analytical laboratory is maintained at the factory. 895 samples of raw materials, soaps in different stages of manufacture, chemicals and perfumes were tested last year in the factory for the benefit of industrialists.

Cottage Industries.

Numerous steps have been taken by the Government to foster and develop cottage and small-scale industries in the State and to accelerate production of consumer goods. Steps have been taken to revive the glass bangle and glass bead industry by the establishment of training centres at Kalahasti, Kasargode, and Madras City for giving training in the manufacture of these articles on a cottage industry basis.

A ceramic service centre has been opened by the Department at Rajahmundry for supplying prepared ceramic materials viz., bodies, glazes and colours to Pottery Cottage Industrialists for the manufacture of porcelain ware and stoneware straightaway.

Experimental section in the Government Industrial workshops was started for evolving improved appliances and designs for the use of the Cottage Industrialists in the State. Improved cashew shell roaster, hand paddy husker, village lamp to burn vegetable oils, hand pulping machine and hand calendering machine for hand-made paper industry have been designed and made here. The manufacture of handmade paper on improved lines was demonstrated at three Government centres for sometime under the supervision of a paper Technologist.

The Tanning parties organised by the Department at suitable centres have been teaching village chamars the up-to-date methods of flaying, tanning hides and skins and manufacture of leather goods.

The Government Coir School at Beypore, (Calicut) and Baruva (Vizag) have been demonstrating the modern methods of producing good quality fibre and useful coir articles.

Rural Industries.

Government have launched in selected firkas in each district schemes for rapid

revival of village industries. Production-cum-training units have been started in Blacksmithy, woodwork, sheetmetal work, light metal casting, pottery, rattan and bamboo work, leather goods manufacture, toys and lacquer work, hand-made paper and boat making trades. The Departmental experts afford the trainees the necessary technical guidance. Moreover, modern tools are distributed free of cost to village artisans and the essential raw materials are also made available to them for the improvement of their particular trades.

Financial assistance is also rendered to these industries under the Madras Cottage

Industries Loans and Subsidy Rules, 1948. The Director of Industries and Commerce has been empowered to grant loans or subsidy upto Rs. 500 to bona fide cottage industrialists.

The Government have also sponsored Industrial and Commercial Museums in all big towns and cities in the State with the object of finding wider markets for the cottage industry products, for the improvement of their designs and for facilitating their exports. These Museums serve as the agencies between the cottage Industrialists and the general purchasers and create the required incentive for more demand and production.

SMALLER UNITS SHOULD GROW & LIVE IN ORGANIC RELATION TO BIGGER INDUSTRIES

"On many occasions the question has been asked how to define big, small and cottage industrial units. To me it seems to be a simple question. A concern with a capital structure above 10 lacs with employees above 500 will be placed in the class of big industries, while medium sized industries may be between 2 lacs and below 10 lacs with more than 100 workers, while small industries will occupy the level below 2 lacs in investment and workers between 12 to 100 and the definition for the cottage industry will be homogenous family units, without preponderance of hired labour, which may be run by mechanical and electrical power.

Looking at our vast community teeming with population the real problem before our eyes is how to employ the vast labour. The day of centralisation is gone. In a national State the problem today is how to carry work to every hearth and home. So the decentralising character of our small and medium industries is an essential feature in India. In Europe and America industries have been centralised to a maximum extent adjusted to immense labour-saving machinery. So our own problem should be looked at from a different angle altogether and guided by the experiences of a Centralised Industry in other big nations. We must take measures to build up our industries in the perspective of our national tradition. No despotic effort will be helpful in our country. Even in America they had to provide opportunities to smaller units to grow and to live in an organic relation to bigger industries. There are to-day in America 38 lacs smaller units at work with a strength of 1 to 4 persons in every unit.

Naturally the question of the strangulation of smaller units cannot be entertained. The only way of fighting rural unemployment and unemployment among educated community is to develop and foster small-scale and cottage industries. This eventually will stop the possibility of concentration of wealth and power to any group or any area."

Sri S. C. DE.

President, National Chamber of Industries.

Ground Water in the Madras State

By DR. K. VENKATESWARLU, M.Sc., D.Sc., F. INST. P.
Special Officer for Ground Water.

From the historical times the one mineral resource cherished more than any other is water, particularly ground water. Social life in Biblical times revolved around the community well. Even to-day it is to a large extent so in most of our villages. Many of the ancient romances, celebrations, disputes and even battles took place at or over a water well.

The Greek philosophers attributed the origin of ground water and springs to sea water as a result of direct communication through subterranean channels. Even the great German astronomer, Johannes Kepler, thought that the earth was a huge animal which digests and assimilates the water of the oceans and perspires as springs and streams. The view that rain can quantitatively account, by infiltration into the earth, for all ground water, springs and rivers was first expressed by Palissy, a poor, self-educated Frenchman. Gradually a number of French scientists developed the ground water theory.

The dowzers, divining rod and "witch-hazel stick" operators, "wiggie-stick" and "doodle-bug" men are presumably endowed with the occult powers of sensing the water underground. The practice of occult powers in the discovery of minerals must be very old and the manner of holding the forked twigs remained unaltered during the past 400 years. That certain persons may be endowed with faculties for the detection of minerals is perhaps possible but the study of such occurrences and the determination of their merits are the special domain of psychology, perhaps psychiatry. There is nothing mysterious about the scientific methods. They operate on definite scientific principles which are well known and understood and these can be performed by any person familiar with their use. In other words, it requires no psychic powers or special gifts of Providence for any man to learn to operate the scientific instruments. As far as the direct water detection is concerned, any instruments claiming to

do so should work anywhere as ground water is present everywhere under any part of the earth's surface.

The increasing importance of ground water has resulted in a notable advance in our knowledge of ground water principles. "There is a definite recognition of the fact that the ground water is no longer a hidden resource whose mode of occurrence, movement and extent is mysterious and indeterminable but, on the contrary, these properties, are definitely ascertainable by scientific investigation.

Ground water basins.

The ultimate source of all ground water is rain. Water evaporates over the land surface, over the oceans, lakes and rivers, collects into clouds and is reprecipitated in the form of rain, snow, sleet or hail. Of the water which falls as rain, a portion is evaporated, another portion enters the ground and forms the ground water supply while the remainder drains off and is carried away to tanks and rivers and finally to the sea. The general ground water equation may be written as $R=E+S+I$, where R is the rainfall, E the evaporation loss and S the water discharged from the area as stream flow or run off and I the ground water increment. Water held in silt, clay, shale, cemented sandstone and crystalline rocks is held in interstices so small that it is either permanently attached to the walls of the openings or moves with extreme slowness, and is not ordinarily available as a source of water for pumping. But available water is enclosed in openings of capillary and larger sizes principally in sand, gravel, uncemented sandstone or near surface fractures. Alluvial material and pervious sedimentary formations may, under favourable conditions, constitute reservoirs of great capacity.

Recently two American Ground water experts, Gardener and Stoner, toured in the Madras State and covered a strip of land approximately 550 miles long and

from 15 to 80 miles wide extending along the Coromandal coast from near Tanjore and Tiruchirapalli on the south to Tuni in the East Godavary in the north.

They recommended the following ground water areas as good ground water basins which can be developed to their maximum long range capacity.

Area No.		sq. miles.
1	Cauvery Delta area	650
2	South Arcot Artesian basin	280
3	Cuddalore	265
4	Ponneri	135
5	Chingleput—Korttalayer river	180
6	Nellore-Gudur	275
7	Kandukur-Ongole	285
8	Tenali	160
9	Krishna	275
10	West Godavari delta	500
11	Bhimadole area	45
12	East Godavari delta	450
13	Pittapuram	110

Detailed maps showing favourable ground water areas in each district should be prepared. It is necessary to undertake periodical measurements of test wells in each of the basins to determine the ground water changes, thus helping to assess the ground water use.

Artesian areas.

The fairly intense artesian area in the South Arcot District can approximately be said to be within the limits of the 100' contour in the North, the Vellar river in the south, the road going north through Settiya Tope in the east, and the line joining the villages Sothavanam and Kiranur in the west. The artesian basin is in the area of Cuddalore sandstone. The aquifer is a sand confined by a bed of plastic clay underlying the top lignite bed. The depth of the lignite bed decreases northward. In some places, the hydrostatic head is sufficient to cause it to rise about 25 ft. above ground level. The intake area to recharge the artesian aquifer is not definitely known. It is very likely that the recharge is from the precipitation within the intake area rather than from any other

large source. Unless the intake area is highly permeable, the recharge capabilities will be much less. Until some definite information regarding the intake area is forthcoming, it is not advisable to have too many wells in the area.

The artesian area in the West Godavari district stretches along the railway line from Bhimadole to Badampudi, extending to about three miles north all along, and from there curves off towards Madhavaram and Ravimetta. The area between Bhimadole and Badampudi is an intense artesian area. At both Unguturu and Ravimetta there are quite a few artesian wells owned by private parties and the effect of that is as new wells are bored the previous ones in that area are either diminished in their flow or become sub-artesian.

In the East Godavari district the artesian area extends from Rajahmundry to Peddapuram. From Kesavaram, a railway station between Kadiam and Dwarapudi, upto Samalkot the artesian zone is almost along the railway line extending to about a mile and a half to the north of it and about half a mile to the south of the Samalkot canal which is running almost along the railway line and the road from Rajahmundry to Kakinada. The area covering the villages Zamindari Medapadu, Dwarapudi, Vemulapalli and Anaparthi seems to be an intense one. The artesian wells are located close to the contact of the alluvium and the Rajahmundry sandstone.

In the East and West Godavari districts where definite and extensive artesian zones are known to exist, there are localized artesian areas also at Borrampalem and Vernagudem in the West Godavari district and at Gadala in the East Godavari district which are not connected with the main artesian zones in those districts. Such localized artesian areas are also known to exist at Paravai and Topevattaran in Tanjore district, Koraturu in Nellore district and Karaikudi in Ramanatapuram district.

The above information regarding artesian zones has been obtained from the existing available data.

Geophysical methods of investigation.

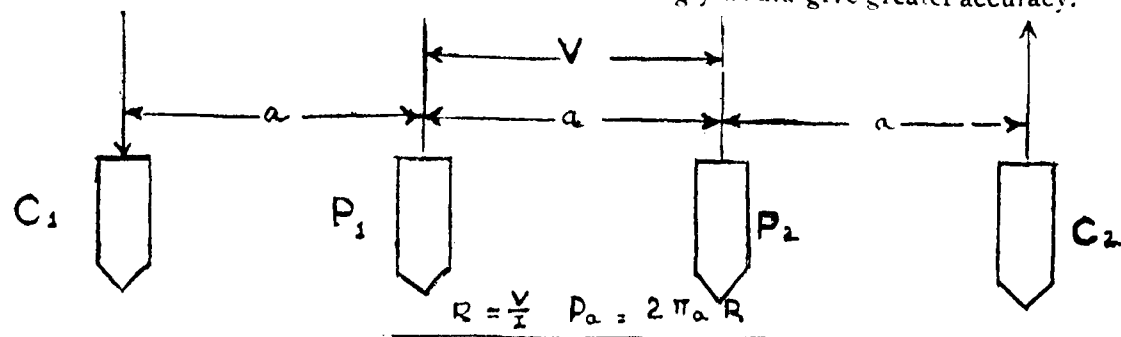
The geophysical investigations involve the determination of the resistivities of the sub-soil formations. The resistivity methods allow quantitative electrical data to be obtained from field measurements. Calculations may be made of the average resistivity of the portion of the sub-surface included in the measurements.

The field procedure consists in passing a measured current through a selected portion of the earth and measuring the potential drop. Current is passed between two energizing electrodes placed at two selected points and the potential difference between two more auxiliary electrodes, placed at other points in the area under investigation, is measured. For convenience, all the electrodes are placed in a straight line and also at equal intervals. From the observed values of the current and the potential and applying a factor depending on the spacing of the electrodes, the apparent resistivity of the material included within the zone of measurement can be calculated for any given electrode configuration. Measurements are made at

one location which is the centre of the measuring arrangement. From this centre the spacing of the electrodes is gradually increased. Thus the depth of penetration is increased and the apparent resistivity is obtained as a function of depth.

Taking the sub-surface as homogeneous, if R is the resistance measured in ohms, and 'a' is the spacing between two consecutive electrodes in centimetres, the specific resistance or the resistivity in ohms per centimetre cube is usually expressed as ohms., c.m., $\rho_a = 2 \pi a R$. This is the true resistivity only if the medium is homogeneous, but if layers of different conductivities are present, it is the apparent resistivity. It is customary to calculate the apparent resistivity by the same formula that applies to the homogeneous ground.

An empirical rule indicates that the depth to the water table may be found with satisfactory results by estimating it to be equal to two-thirds of the depth to the inflection point in the resistivity-spacing curve. More involved calculations such as those proposed by Hummel, Tagg, Roman, Pirson and others seemingly would give greater accuracy.



Many types of direct reading instruments have been proposed. Of these the megger ground tester is the best known at present. Its use in geophysical measurements is limited due to the inherently poor sensitivity. The Gish-Rooney earth resistivity apparatus, which employs a double commutator system and thus eliminates the variable ground currents from the measurements, may perhaps be a better instrument for ground water investigation.

The Department of Industries and Commerce has got the following geophysical equipment. (1) Megger ground tester (2) Geophysical megger earth tester (3)

Potentiometer unit (4) Horizontal magnetic variometer and (5) Vertical magnetic variometer. With the aid of proper technical assistance, a detailed ground water survey of the whole State may be undertaken, utilizing the equipment in the Department.

Geophysical investigations for locating ground water have been carried out at Kattupakkam, east and west Tambaram, Guindy, Rajapalayam, Body guard lines and at Chromepet.

The investigations at Guindy have been conducted at the Race Course. There was already a well with very little water. The

rock there was very hard rock. Geophysical measurements have been made and a site where softer formation would be met with has been suggested for digging a well. The well was dug, and the nature of the rock and the depth at which water was struck had been found to be in accordance with the geophysical observations. At east and west Tambaram also wells were dug and the observations were found to be correct. At the remaining places wells are being dug now.

The observations made at the Body guard lines indicate the salt water diffusion extended almost to the surface. There may be the Cooum water infiltration also. The observations made at the Chintadripet side of the Cooum river show that the chloride content and the Cooum water infiltration are less upto a depth of about 25 to 30 ft. and from there on indicate the salt water diffusion. Even there, by pumping, water of high salinity is likely to be obtained.

Suggestions regarding the nature of the rock and the probable depth at which water may be tapped are highly valuable, particularly in rocky areas where large amounts of money have to be spent in digging wells.

Conclusion.

The ground water survey of the entire State by districts will, no doubt, take a long

time to complete but it will add immeasurably to our knowledge of the State's underground water supplies, their occurrence, quality, quantity and other pertinent data.

The recharge capabilities of the intake areas of the artesian zones and the probable amounts of the artesian water available for use should be investigated carefully and the development of the artesian basins through wells should be properly planned. Any undue development of the artesian supply through wells will so decrease the artesian head that the springs will either cease to flow or be greatly reduced in size.

Geophysical information, though of a highly specialized nature and often indirect in character, permits to prove variations in the physical properties of the water bearing rocks to depths not reached by either physical sampling or imagination. Geophysical methods permit the measurement of certain quantities which are directly related to the presence or absence of water, its quality and probable yield in advance of drilling. Resistivity methods are least expensive and most satisfactory for the location of the water table. The area that can be covered in a given time by geophysical methods, as compared with the test holes which may be bored or the test pits dug, is so great that the resulting economy in water finding operations will be obvious.

USE OF THE HAND

"Whatever you may do, do not commit the great mistake of neglecting the use of your hands. One is apt when immersed in books and examinations and higher courses of study to forget the use of one's own hands.

"It should be a shame for any college student to be unable to use his fingers as deftly, or to do the things that require manual effort as well as any village artisan or labourer in the field.

"You should be better than the man, who had not gone to school or college, even in those things that he does. Unfortunately, this is not the case with most students who go out of college in India now. This badly affects national efficiency all round.

"It should be a matter of patriotic zeal that professors and senior students should set an example in the joyous and efficient use of bodily limbs, whenever any manual labour has to be done. It should be a matter of pride for students to help themselves in every way, and not depend for physical assistance on others, be it at home or anywhere else."

HON'BLE MR. C. RAJAGOPALACHARI.

Fuel Economy in Industry by Insulation.

BY MR. F. R. MOOS,
The Pioneer Magnesia Works, Ltd.
(A paper read at a Symposium.)

My predecessors have lucidly explained to you how to use the minimum quantity of fuel to obtain the maximum generation of heat or B. Th. U., by proper burning of the correct grade and type of fuels by scientific design of furnaces, fire-grates and proper adjustment of draft etc., and last but not least careful storage of fuels. My task is to tell you in a non-technical language how to conserve that heat which has been generated so that the B. Th. U. raised is utilised by Industry to its full extent and the heat losses are avoided by every means within one's power.

The acute shortage of fuel—coal, furnace oil, wood and electric power in India and other countries of the world during and since the War, has rendered the question of heat insulation extremely topical in recent years—more so, on account of rising costs of fuels everywhere. The difficulties of transport are as great in India as they were during the War, making it difficult for Industries in the hinterland to get fuel in time, for continued production, let alone high freight rates which fuel has to bear. The Middle East tangle has scared many Industries and several of them are thinking of quickly reverting to coal from oil if they can help it. The high prices of fuel react very adversely on costs, and in these days of inflation one has to wake up and realise the necessity for economising fuel by Insulation.

It is a well known fact that in the U. K. the provision of efficient heat insulation in an average British Steel-framed Factory has been shown to reduce heating plant and fuel costs by as much as 80 per cent. Of course this includes insulation of an entire building as in the temperate zones. The problem is to retain inside the building the heat that is generated for production as well as for personal comfort.

How does insulation work? Well the most efficient form of heat insulation is a vacuum. The Thermos or Vacuum Flask is a typical example. But for practical purposes for an entire building or a boiler such

a provision is a tall order. The next best efficient form of heat insulation and more practical is *still air* and the relative efficiency of insulating materials may be said to depend on the amount of air that they contain.

Why is Insulation necessary?—The heat which is generated by efficient combustion needs must be transmitted as efficiently as possible to the heat-absorbing surfaces, and further its transmission to those parts of the appliances from which it may be dissipated must be reduced to a minimum. There are three modes of heat transfer Conduction, Convection and Radiation. The first two represent transfer of energy from particle to particle by direct contact. Energy or heat emitted by a hot body is radiation, and is capable of transmission over a wide range of wavelengths according to its intensity. The point to bear in mind is that radiation increases rapidly with increase in temperature level. The higher the temperature difference between the hotter and cooler surfaces the more important relatively is the transference of heat by radiation.

I have told you a little while ago that still air is a highly efficient insulator but air is rarely still and the very existence of temperature difference causes movement. Hot air rises and cold air sinks and this movement induces transfer of heat from one side of the space to another. The wider the space the less opposition to movement and to heat transfer. To reduce the rate of heat transfer we must insert subsidiary walls and reduce the volume of space to restrict the movement of air. It therefore follows that the efficiency of an insulating material will depend not only on the amount of air it contains but also on the manner in which the air in it is distributed. Materials like stone or metals where air pockets are non-existent, are poor insulating agents, while granular fibrous materials, with many small air pockets have a high insulating value. Hence the lower the thermal

conductivity of the insulating material the better is the insulating property and value. This value we may term "Resistivity."

It is now quite clear what would happen without insulation. Different appliances and objects however may require different types of insulation. A building for example may be insulated by asbestos sheets, cork tiles, plaster board, fibreboard and so on. Furnaces will have to be lined with refractories of varying temperature resistances according to the type of furnace, the heat generated and the fuel used as also the stresses required.

The ideal insulating material should inhibit convection and radiation currents, have a conductivity of low order, low water absorption after application to surface, a reasonably low density, low inflammability and a high resistance to fungus, mould and vermin. It should also be resistant to moisture and chemical attack, stable under heat upto the desired temperatures and there should be absence of chemical action to metals. It should be capable of easy application, and should have a general permanence and maintenance of insulating properties.

In Western countries and in U. S. A. there are several heat insulating materials available but no single one of them comes anywhere near the ideal as some deficiency in some way in mechanical and other properties is there.

In India, which is the home for raw materials of several important refractories and insulating products, I find that for medium Temperature Range viz 200° to 850° F. there is nothing to surpass 85 per cent MAGNESIA-ASBESTOS. This range includes Boilers, steamlines, steam accumulators, Drying Plants, flue gas ducts, Turbines, Cylinders and hot settling Tanks.

Above that range viz., for carbonisation furnaces, Kilns, blast furnaces, gas producers and coke ovens, the choice of materials is restricted to refractories of certain types having various compositions.

85 per cent MAGNESIA provides a layer of material having a low heat conductivity between the hot surface of the vessel or furnace and the external surface thus causing the temperature of the external surface to be materially reduced and keeping the outer surface cool.

This covering up of a Boiler or steam pipes or other appliances is known by the term lagging. The fundamental requirements of lagging besides the low thermal conductivity and other values mentioned by me already are its capacity to adhere to the surface to which it is applied, and when operated intermittently i.e., when the vessels are heated and cooled at frequent intervals it should have a low heat storage capacity.

What should be the thickness of a lagging? A good engineer will tell this to you correctly as it will depend upon the thickness of the vessels and/or pipes, their diameters and the pressures at which the plant is to be operated. Do not try to override your Engineer by telling him to make—do with half of two-thirds of the necessary thickness as a "Penny wise pound foolish policy." I have often come across Millowners who have told me that they would buy half the quantity of 85 per cent MAGNESIA as they felt that the 2" thickness desired by the Engineer could be brought down to 1" to save money. It would be better if they did not lag rather than try this sort of economy. For, say if at 160° C. a 4 inch line needs a lagging thickness of 2" to prevent a total heat loss in feet length of 885 B. Th. U/hr. as against a heat loss of 126 B. Th. U/hr with lagging and if it was lagged to half the thickness it will mean a loss of about 475 B. Th. U/hr. The magnitude of the losses which can take place from unlagged steam pipes may be indicated by one example. If a 1" Pipe having a surface temperature of 200° C is unlagged for a length of 200 feet, it may waste 9 lbs. of coal per hour or 35 tons per year. If the same piping had a surface temperature of 360° C. (680° F.) the corresponding wastage of coal would be 105 tons per annum.

The method of application of 85 per cent MAGNESIA-ASBESTOS and similar powder compositions is simple and can be done by any boiler attendant once he is shown how to apply and how to follow the instructions of the manufacturer. Cold tap water is mixed with the magnesia till it is made into a sort of dough. The temperature of the boiler has to be brought down to 50 or 60 pressures and then application may commence by throwing moist pellets—a handful at a time at intervals of 2" to 3" on the surface which must be

thoroughly cleaned beforehand and to which a coat of sodium silicate may be given prior to application. After building up these minor pillars as it were, the interstices are filled up and then smoothed down with a trowel. Generally $\frac{1}{2}$ " chicken mesh wire netting is used after every $\frac{1}{4}$ " or 1" of lagging. Finally the lagged surface is finished with a hard setting compound and painted and/or covered up with canvass or jute cloth. Special paints are available for application to lagged surfaces and an oil paint should never be used otherwise the outer oil film will crack on heating and will bring down chunks of lagging along with cracks.

Very often the installation Engineers do not keep in mind certain difficulties arising out of improper design and lay-out. Equipment and line layout should be such

that mechanics can apply and finish insulation with a minimum of difficulty. Means should be provided for easy access to insulated equipment so that the insulation can be properly maintained. Insulated equipment should be located away from sources of possible damage e.g., chain hoists or where there is traffic movement.

If these simple instructions are followed and it is borne in mind that sufficient and efficient lagging is as essential to conserve heat as it is to wear adequate clothing in a cold climate, you will be saving anything between 50% to 80% of the radiation losses and there would be an economy of your fuel to the tune of 50% to 60% if not more leading to considerable increase in your competitive power as fuel is a major item of cost in any industry.

THE U. N. CHARTER

"Lawyers and economists have to play an important part in the working of a democracy, the former as the guardians of the fundamental rights of the citizens and the latter as promoters of the economic well-being of the people. Today, more than ever, with a controlled system of economy prevailing in most countries the part economists have to play is greater than ever before.

Further, international economic co-operation has come to play a prominent part in the economic life of a country. The second World War had proved that there were two factors which tended to bring about a clash of arms: The economic maladjustment not only within a territory or within a nation but also within a group of countries and social injustice resulting from the perpetration of social inequalities observed as between one set of people and another. As the necessary sequel, at the end of the war a new idea of international economic co-operation took shape in the form of the U. N. Charter.

A change has come about in the outlook of most nations regarding their economic responsibilities and even their economic rights. There was no instance more striking than that of the Marshall Aid Plan, under which large sums of money had been poured generously, without any strings attached to the aid, into European countries by the U. S. for their economic recovery. As for the countries east of the Suez, unfortunately, equal attention was not paid in this regard. But even with reference to Asian and African countries there have been gestures of goodwill in the form of the Point Four Programme of President Truman. This should be appreciated."

SIR A. RAMASWAMI MUDALIAR.

Gleanings from the Press.

NOTES, NEWS & VIEWS.

Research Institute in Madras For Development of Cottage Industries.

A proposal to establish a Cottage Industries Research Institute at Madras is now being considered by the Government.

The idea is mainly to conduct research on the appliances and technique now employed in cottage industries, and to evolve improved appliances and technique of production.

Government's objective in the development of cottage industries is to develop industries which are "basic to the requirements of villagers, whose main occupation is agriculture, and make them economically self-sufficient, as far as possible." In regard to industries which had no rural background, the idea is to increase the output, and stimulate export. The provision of employment for the unemployed might follow as a consequence. The agriculturist, in the "off season", could engage in some profitable work by taking to some cottage industries. A scheme put into execution in April, 1950, provided for the free distribution of improved labour-saving tools, and implements, to the value of Rs. 6,00,000 to enterprising village artisans engaged in select cottage industries, and also for the supply, at cost price of raw materials to the tune of Rs. 12,00,000 through Co-operative agencies specially formed for the purpose. Tools and implements costing over Rs. 200,000 were supplied free to about 700 artisans, who had been able to use them well in view of the instructions given by Village Industries Demonstrators.

The Government had also sanctioned Sir M. Visweswarayya's Rural Industrialisation scheme which is being implemented as an experimental measure, in two taluqs in Nellore and Trichinopoly. Two officers are proposed to be deputed to Mysore where the scheme is being worked in

an entire district, to acquire first hand knowledge of the working of the scheme. It would be extended to other taluqs in the districts in 3 years, and would be complementary to the Village Industries Scheme.

The working of the Cottage industries Development Scheme in Select firkas under the Rural Welfare Scheme of 1946 has revealed the need to lay a greater emphasis on the production side of the utility articles of the improved quality rather than on the mere training of artisans. The scheme was, therefore, revised in 1948, providing for the free distribution of improved labour-saving tools and implements.

Survey proposed

Artisans had appreciated the improved tools, which had also helped to increase the out-put by 50 to 75 per cent. The Economic Adviser, at the instance of the State Cottage Industries Board, had prepared a comprehensive scheme for the survey of cottage industries, which is under Government's active consideration. The scope of the survey would include the assessment of the income of those engaged in cottage industries, and an inquiry into the conditions prevailing in each industry, the mode of employment, sources of raw materials, marketing and financial assistance.

The Government have not enough materials for cottage industries and it is therefore necessary to have correct data to enable the Government to prepare a comprehensive long-term programme. Hence the proposed survey.

Regarding the drugget industry, a Joint Board for Madras and Mysore has been

set up, Such articles not conforming to the specifications, would be prohibited from export, the idea being to eliminate the spurious, and manufacture only such as would have an export value.

The proposal to depute some Ministers to Japan to study cottage industries there is still under consideration.

* * *

Markets the Problem

In developing cottage industries

There is a proposal under examination to make a comprehensive survey and census of cottage industries. The idea is to have a Joint Registrar of Co-operative Societies appointed as additional Director, to be in charge of the cottage industries, independent of the Director of Industries and Commerce. There is also a proposal to have a research institute, to evolve the best technique for the various cottage industries.

The great difficulty in regard to Cottage Industries is to find an assured market for the products, and that depends on the proper standardisation of the articles produced.

The Government is taking steps to see that the articles are standardised, and there is a proposal to open emporia at district museums for certain cottage products. It is also intended to tie up the scheme with the Government of India's scheme for the export of such articles to foreign countries.

Steps will also be taken to improve the designs and finish of handloom products. There is a good market available for Indian toys, and steps will be taken to develop that industry.

* * *

Development of Cottage Industries.

The Government has ordered that steps be taken by the Registrar of Co-operative Societies to form Cottage Industries Committees for the development of Cottage Industries in the Districts. These

Committees will be attached to District Central Co-operative Banks.

* * *

Madras Leading other States.

The biggest cottage industry in the country is the handloom industry and next comes khadi industry. Apart from these two the Government could only develop certain industries which had a firm tradition, and which it did not want to go out of existence.

Government proposed to bring out shortly a brochure on cottage industries, and the people could find from it that Madras State is second to none in India in the development of cottage industries.

The Sub-Committee of the Joint Drugget Industry Board had recommended the location of the processing centre at Vinnamangalam in N. Arcot district.

The backward cottage industries are:—The hand-pounding of rice, flour-grinding, mat-making etc. Besides these, certain cottage industries based on firm traditions, have been selected for intensive development. They include match industry, palmyra fibre and leaf products, leather goods manufacture, blanket-weaving, pile carpets, handmade cotton lace, etc. To stimulate the development of these, Special Advisory Boards have been constituted.

There is a proposal in selected firkas to dismantle the existing rice mills which affected the hand-pounding industry, and also to levy a cess on oil-exPELLER.

* * *

Training in Village Industries.

A batch of 30 students will undergo a 5-month course with effect from Oct. 2, in village industries. The course will be conducted in Grama Sevak Vidyalaya at Kallupatti, Madurai District. The Boarding and Lodging expenses of the trainees will be borne by the Government.

Palm "Gur" Industry in India.

Need for further Development Stressed.

In his message to the Third All-India Palmyra Workers' Conference held at Sarvail, Nalgonda (Hyderabad) the other day, Hyderabad's Chief Minister, Mr. M. K. Vellodi, stressed the importance of the development of the palm gur industry in India generally and in his own State, in particular, so much that he attached greater importance to this aspect than even to the possibility of freeing the people from the evil habit of drinking. For, as he rightly pointed out, the palm gur industry, if developed, will provide useful occupation to a large number of people in the country-side. The necessity for developing this industry has become urgent, especially because of the unemployment among toddy tappers consequent on prohibition. The importance of this industry was also equally stressed by Mr. V. B. Raju, Minister for Cottage Industries, Government of Hyderabad, in his inaugural address to the Conference.

Apart from the need to provide alternative employment for those displaced as a result of prohibition, the development of the palm gur industry is urgently called for in view of the shortage of sugar in the country. Palm gur, when refined, is a valuable substitute for cane sugar, especially in the manufacture of confectionery products. Moreover, palms are superior to sugarcane in many respects. Thus, we are told, date palm gur contains 72.01 per cent. of sucrose, as compared with 59.71 per cent. in cane gur. Moreover, the protein content and calorific value of palm gur, according to nutritional experts, are higher, as compared to those of cane gur. In the opinion of these experts, therefore, palm gur is more nutritious than cane gur.

That there is great scope for developing the palm gur industry in the country would be evident from the fact that the production of palm gur, at present, amounts to only

about 50,000 tons per annum, against the potential yield of about a million tons. The production of palm gur, it is to be noted, is confined to palmyra and date palms. According to the latest report of the Indian Tariff Board on the sugar industry, the number of existing palm trees is estimated at about 50 million, which can yield about a million tons of gur, on the basis of half a maund of gur per annum from palmyra tree and one-fourth of a maund of gur per annum from date palm.

As regards the cost of manufacture of palm gur, an accurate estimate is rather difficult, however, the Palm Gur Adviser to the Government of India has furnished estimates of cost of producing one maund of gur from date palm and from palmyra, as shown in the following statement.

Cost of manufacturing one maund of gur.

	From	
	Date palm	Palmyra palm.
	Rs. a. p.	Rs. a. p.
Raw materials:		
Tree rent	1 0 6	0 12 0
Tapping Wages	7 4 0	9 0 0
Pots	0 6 6	0 7 0
Chemicals	0 2 0	0 2 0
Depreciation	0 1 0	0 1 0
Total	8 14 0	10 6 0
Boiling:		
Fuel and chemicals	4 1 0	5 0 0
Wages	6 9 0	6 9 0
Sundries	0 1 0	0 1 0
	10 11 0	11 10 0

The foregoing table reveals that the principal item in the cost of manufacture of gur from palm is wages, being about Rs. 13.13 in the case of date palm and Rs. 15.9 in the case of palmyrah palm, whereas the rent of the tree is hardly about Re. 1 and As. 12 respectively. Fuel and chemicals constitute about 20 per cent. of the cost of manufacture. In referring to

EXPLOITATION OF MINERALS

"I need hardly emphasise the necessity, value, and importance of the scientific and systematic exploitation of minerals, especially in these days. It is my desire, as indeed it should be of every one, that the minerals which Mother Earth has in store for us, should be employed for the good of humanity, and not for its destruction."

H. H. THE RAJPRAMUKH OF MYSORE

these, the Tariff Board feels that it would be possible, to reduce the cost of manufacture of palm gur, if the expense under fuel and chemicals and wages are appreciably reduced. Besides, proper research and training in the method of tapping, preserving the nira and boiling juice can reduce the manufacturing cost still further.

If the indigenous palm gur industry is to be placed on a sound footing, increased care will have to be taken to solve the various problems confronting it, such as crude methods of tapping and boiling of palm juice adopted in Madras and West Bengal and absence of uniformity in tapping method. There is, therefore, the need for standardising tapping tools, method of tapping, and boiling processes. Further, the industry needs technical advice and guidance. As the tariff Board has pertinently remarked, it is necessary to establish agencies for applying the results of research to palm gur manufacture and also to make the cultivator actively conscious of the need of improvement. Such research on palm gur, the Board feels, should be organised under the administrative control of the Central Government. Mention may be made, in this connection, of the Central Palm Gur Training School at Cuddalore (Madras), which is training skilled workers in the technique of palm gur manufacture. The first step in regard to development of research should be the establishment of a Central Palm Gur Research Laboratory at a suitable place to conduct research into various problems, of the industry. Or, as the Tariff Board had suggested, at least a beginning should be made by establishing a section on palm gur manufacture in the

Indian Institute of Sugar Technology at Kanpur. Under the auspices of this section, a few regional laboratories may be started. All these require sufficient finance. The Tariff Board's suggestion in regard to this is that adequate funds should be made available by both Central and State Governments. The Tariff Board has also recommended that the subsidy granted at present by the Government of India for State palm gur development schemes should not be reduced.

It will be interesting to recall here the achievements of the palm gur development schemes in some of the States. In Madras, the industry is being developed through formation of co-operative societies. There are nearly 2,000 palm gur manufacturing societies in that State, with a total membership of more than 1,26,000 ex-tappers. During 1949-50 these societies produced 30,547 tons of palm gur, of the value of Rs. 122.36 lakhs. In West Bengal the production is estimated at about 5,000 tons per annum. In the Bombay State, a beginning has just been made. The Village Industries Committee has been doing its best to introduce and develop the industry. With a view to developing the palm gur industry in the State, the Hyderabad Government we are told, has sanctioned the provision for running five palm gur manufacturing centres, with an expenditure of Rs. 50,000, 50 per cent. of the non-recurring expenditure being borne by the Centre. In fact, three centres have already been started. It is to be hoped that other States also would follow this example and take all possible steps to encourage production of palm gur.—*"The Commerce."*

"A COMPANIONATE MARRIAGE"

"The difference between a considered change in the par value and a fluctuating rate of a country's currency is the difference between matrimony and companionate marriage. It will be very wrong to try experiments in your currency rates. So far as the community's welfare is concerned, it will do more wrong than if we are to make experiments in matrimony."

HON'BLE MR. C. D. DESHMUKH

Aluminium Industry in India.

Government Resolution on Tariff Board Report.

The Government of India's resolution on the report of the Tariff Board for the continuance of protection to the aluminium industry has just been published. It may be recalled that the case for protection or assistance to the industry was first referred to the Tariff Board in February 1946. After the necessary investigation the Board submitted its report recommending protection to the industry in June 1946. But the Government, after carefully considering the recommendations of the Board, came to the conclusion that the Board's report raised various issues of great importance and that a further technical examination was necessary. Accordingly the Government appointed an official committee for the purpose. In the light of this latter Committee's findings, the Government re-examined the recommendations of the Board and in consultation with the Board, granted protection to the aluminium industry as from 15th May 1949, in the form of a subsidy-cum-additional specific duty scheme.

Subsequently, representations were received from the industry that the rates of subsidy were inadequate. The Government did not accept this contention although it assured the industry that a review would be undertaken by the Tariff Board after a year's working of the scheme. In pursuance of that assurance the Tariff Board undertook a review of the protective-cum-subsidy scheme for the aluminium industry with a view to determining the quantum of protection, if any, required for aluminium ingots, sheets, and circles produced and sold by the Indian Aluminium Company and the Aluminium Corporation of India between 15th May 1950 and 14th May 1952, and to consider the best method of affording such protection.

Aluminium has come to the forefront as an important metal only within the past three or four decades. On account of its remarkable properties, such as lightness, high thermal and electrical conductivity and resistance to corrosion, the uses of aluminium are daily growing in number and importance. Its most important and largest use today is in the building of aircraft. The development of the aluminium industry is important for India, especially because its natural resources for

the production of other non-ferrous metals such as copper and lead, are limited, while those of tin and zinc are non-existent. On the other hand it has very extensive deposits of bauxite, the principal ore for the production of aluminium. The total world reserves of bauxite is estimated at about 60 million tons. Having regard to the importance of the industry thus the Government has been giving active encouragement and substantial assistance to it from the start.

Indian Aluminium Company

The Indian Aluminium Company was started in 1938 as a private limited company under the name of Aluminium Production Company of India, Ltd., In June 1944, it was converted into a limited company. It is a subsidiary of Aluminium Ltd., a Canadian company which owns 70 per cent of the share capital of the Indian Aluminium Company. At present, out of eight Directors, six including the Chairman, are nationals of the country. The Directors of the Company are given a large measure of autonomy in the management of its affairs. The General manager is a nominee of Aluminium Ltd., but, after his appointment he is responsible to the Board of Directors of the Indian Aluminium Company. The Indian Aluminium Company has entered into formal contracts with Aluminium Laboratories Ltd., for purposes of technical assistance and Aluminium Securities for advice and assistance in respect of finance, accounting and auditing.

The Company's alumina works are located at Murti in Bihar. The plant was originally designed for a production of 10,000 tons of alumina. The installed capacity at present however is only about 6,500 tons. But it can be increased to 10,000 tons with a small additional investment. The actual production is limited, as the demand for alumina for the reduction works at Alwaye is only that much at present. The Company's reduction works are located at Alwaye, 1,520 miles from Murti. The rated capacity of the plant is 2,500 tons per annum. The company has plans to expand production at Alwaye to 5000 tons of Aluminium when the necessary power is available. The company has got an up-to-date

rolling mill at Belur near Calcutta, 1445 miles from Alwaye. The potential capacity of the mill is 3000 tons. The pig aluminium produced at Alwaye is fabricated at Belur works. In 1948-49 the Company produced 4360 tons of aluminium hydrate 2347 tons of pig aluminium and 2384 tons of sheets and circles.

As Aluminium Ltd., of Canada commands considerable financial and technical resources and has extensive experience of aluminium production in different parts of the world, the Indian Aluminium Company being a subsidiary of Aluminium Ltd., has great advantage of securing technical and financial advice from the parent company at a small cost. The Company has also the advantage of obtaining electric power from the Travancore-Cochin Union Government at a comparatively low rate. On the other hand, it has to bear heavy freight on transport of alumina from Murti to Alwaye and aluminium from Alwaye to Belur. The total freight on this account comes to about Rs. 273 per ton of pig aluminium.

Aluminium Corporation of India

The Aluminium Corporation of India was formed in 1937 as a public Company. The Corporation started producing aluminium on a regular basis from 1944. Unlike the Indian Aluminium Company the Corporation has the advantage of all its units of production being located together at Jakaynagar seven miles from Asansol. The Corporation has its own coal mines, a thermal power plant, an alumina plant, a reduction plant, a petroleum coke calcining unit and sheet-rolling mill, a utensil manufacturing section.

The capacity of the alumina plant is estimated at 5000 tons, that of the reduction plant at 1500 tons of aluminium. The highest production so far attained as in 1946-47 when it produced 3027 tons of alumina and 1512 tons of aluminium. Since then there has been a decrease in production. In 1949-50 the Corporation produced 2764 tons of alumina and 1272 tons of aluminium. The utensil manufacturing section has not been successful and its activities have been stopped, since September 1950. The Corporation has plans to increase ingot production to 2000 tons and also to install a larger rolling mill. The Corporation has recently secured a loan of Rs. 50 lakhs from the Industrial Finance Corporation which will be utilised for installing a modern rolling mill and a third boiler.

As has been stated earlier the Corporation has the advantage of having all its plants and coal mines located together in the same place. But its cost of power is very high. Its plants are also not well balanced. Besides, the design of its existing boilers is not satisfactory. The Corporation is also handicapped by the fact that its rolling mill has a small capacity and can roll only about one-third of the total production of ingots. Its cost of production of sheets and circles are consequently, unduly high.

Present Position

Besides the two main units producing virgin aluminium there are a few other firms engaged in the manufacture of aluminium articles for domestic and industrial uses. Thus, there are at present 20 units for rolling aluminium sheets and circles and a number of units for manufacturing aluminium utensils and hollow-ware. There is one unit, a subsidiary of a British company, which manufactures aluminium foils and strips. There are also two units for manufacturing aluminium cables and one unit each for manufacturing aluminium capsules and for producing aluminium powder and paste.

The estimated consumption of aluminium in 1948-49 and 1949-50 was 13,065 tons and 10,344 tons, respectively. The total demand for various aluminium products during the next three years is put at 15,000 tons per annum. As against this, the production of aluminium is estimated during the next two years to be about 4,000 tons only per annum. While ingots produced at the works of the company have attained a fairly high standard the products of the corporation need improvement. The Tariff Board has recommended that the Indian Standards Institution should take early steps to finalise the standard specifications for aluminium ingots produced in the country formulated tentatively.

Imports of aluminium in all its forms were 9,453 tons in 1948-49 and 6,673 tons in 1949-50. During the first nine months of 1950, they were 3000 tons out of which sheets and circles together accounted for nearly 2000 tons. On the basis of estimates of demand and production there is scope for imports of aluminium to the extent of 11,000 tons per annum in the next two years.

Fair selling Prices.

The Tariff Board has estimated the fair selling price of the company for ingot at Rs. 2882.82 per ton for 1950-51 and

Rs. 2761.84 per ton for 1951-52. The fair selling price for sheets is put at Rs. 3858.9 per ton for 1950-51 and Rs. 3,732.18 per ton for 1951-52 and for circles the fair selling price is Rs. 3,841.03 per ton for 1950-51 and Rs. 3,707.95 for 1951-52.

The fair selling price of ingots produced by the Corporation has been estimated at Rs. 2,790.72 per ton for 1950-51 and at Rs. 2,705.74 per ton for 1951-52. The fair selling price of sheets and circles has been estimated at Rs. 3,942.96 per ton for 1950-51 and Rs. 3,843.72 per ton for 1951-52.

In connection with the loan of Rs. 50 lakhs from the Industrial Finance Corporation, the Aluminium Corporation has claimed for an additional expenditure inclusive of interest on the loan of about Rs. 5 lakhs and suggested that this should be included in the cost of the corporation. The Tariff Board has held this claim as not being justified and said that it should be borne by the additional out put to be produced with the installation of the new rolling mill and the third boiler. For the present it has suggested that it should be treated as deferred revenue expenditure which should be recovered from out of future profits.

The estimated fair selling price of ingots produced by the Company is higher than that of the corporation by about Rs. 90 per ton. The estimated fair selling prices of sheets and circles produced by the company are lower than those of the corporation. The c.i.f. prices and the landed costs of imported ingots sheets and circles have gone up considerably since the introduction of the scheme of protection in May 1949. On account of this factor, there is a reduction in the quantum of protection required for ingots, sheets and circles produced by the companies. The present level of prices of aluminium ingots sheets and circles is not unduly high for consumers. Consequently there is no justification for a reduction of the present rates of duties according to the Tariff Board so far as consumers are concerned.

Main Recommendations

The recommendations of the Tariff Board may be briefly summarised as follows:

(1) There is no case for alteration in the rates of duties on aluminium products as fixed under the protection-cum-subsidy scheme of 15th May 1949.

(2) On the basis of estimates, no subsidy on sale of sheets and circles is payable to the

Indian Aluminium Co., for the period from 15th May, 1950 to 14th May 1952. If any amount has already been paid to the company on this account under a provisional arrangement it should be refunded by the company.

(3) During the period from 15th May 1950 to 14th May 1951 the rate of subsidy on sale of ingots payable to the Corporation is Rs. 129.8 per ton. No subsidy is payable to the corporation in respect of the period from 15th May 1951. If any amount has already been paid to the Corporation in respect of sales during this period on a provisional basis the necessary adjustment should be made.

(4) Before paying any subsidy to the Corporation the Government should satisfy itself that the Corporation has been taking necessary steps to expedite the procurement and installation of its new rolling mills.

(5) If there is a substantial change in the c.i.f. prices of imported ingots, sheets and circles in the future the question of the amount of subsidy, if any, payable to the corporation and the company should be reviewed.

(6) The question of continuing or modifying the Scheme of protection should be reviewed early in 1952.

(7) Government should explore the possibility under the Point Four Programme of securing the necessary technical advice and assistance for the Aluminium Corporation of India from the U.S.A.

(8) The Government should give high priority to the Corporation for importing the necessary plant and machinery for its rolling mills and for the third boiler.

(9) All applications for a refund of duty on aluminium products and aluminium alloys that may be required for various consuming industries, such as A.C.S.R. cables, foils, pre-fabricated houses etc. should be examined by the Government and a rebate of duty if any should be granted only in such cases and to such extent as may be found to be justified as a result of the said examination.

(10) The present concession granted to Aluminium Industries Ltd., by way of a refund of duty in excess of 30 per cent on aluminium rods for A.C.S.R. cables should be continued until 14th May 1952.

(11) The existing rate of drawback duty (7/8th of import duty paid) on exports of aluminium products should continue.

(12) Government should request the Railway Board to consider possibility of giving facility

for transporting petroleum coke from Digboi to Asansol through the Assam Rail Link.

(13) The Central Government should request the Travancore-Cochin Government to make necessary arrangements to supply the Indian Aluminium Company with the additional power required for increasing the production of pig aluminium to 2500 tons per annum.

Government's Decision

The Government has accepted all the recommendations with the exception of (1) and (3). As regards recommendation (1) the Government has not considered it necessary to continue the additional specific duty on aluminium ingots, sheets and circles having regard to the increase in price of imported

aluminium, but the Government has viewed that the existing protective duty of 30 percent advalorem should be continued until 14th May 1952.

As regards recommendations (3) it has decided to reduce the rates of subsidy on the sale of ingots payable to the Corporation from Rs. 129-8 per ton, as recommended by the Board to Rs. 120 per ton and also to pay it only up to the end of October, 1950, for the reason that the price of imported ingots has risen and is progressively rising with the result that the difference between the selling price of the imported and indigenous ingots has been reduced, thus eliminating the basis for a subsidy. No subsidy will be payable to the Corporation from 1st November 1950 :—

"The Commerce"

IMPORTANCE OF RAW MATERIALS

"The importance of raw materials to modern industries need hardly any emphasis. It is commonly known that nothing is more indispensable to industries than raw materials. Even capital and labour are not perhaps so important. It is, therefore the control over raw materials that ultimately determines the industrial prosperity of a nation. A country deficient in basic raw materials can seldom aspire to an industrial career of any considerable importance. Great Britain although herself deficient in many vital raw materials was able to retain hitherto the industrial leadership of the world because of control over the raw materials of vast territories constituting her empire. The source of the incomparable strength of the United States of America lies primarily in her inexhaustible resources. The spectacular industrial achievements of the Soviet Union also, I think, are essentially due to such possessions.

The raw materials, occupying as they do such an important position in industrial life, have influenced tremendously the course of events of this century. In fact, the modern industrial history can rightly be described as one of struggle for raw materials. Germany disturbed the peace of the world twice during the last three decades evidently for annexing new territories for increased supply of raw materials without which German Industries could not thrive. There is no doubt that the question of the domination of raw materials has much to do with the present international conflicts."

Sri S. C. ROY, M.A., B.L.,
Chairman, Dhakeswari Cotton Mills Ltd.

Vegetable Fibre for Rope-Making.

Untapped resources in vegetable fibre offer great opportunities for starting rope making as a cottage industry.

It is also stated that a complete decorticator, an automatic rope-making machine and a contrivance for making rope of three or more plies cost approximately Rs 700.

With a view to explore the possibilities of rope and cordage making from fibres other than jute and cotton as a useful rural industry, the Cottage Industries Department, Madhya Pradesh, conducted a series of experiments in their laboratory, situated in the premises of the Government Central Workshop, Nagpur.

The results thus obtained have been so encouraging that it is now intended to make these results and technique available to cottage industry workers at their doors.

For a long time the problem of making ropes from vegetable fibres has revolved round the question of extraction of fibre either from leaf or bark. Extraction processes were crude and hence uneconomic; the tedium and the labour involved rated the work so low in social estimation that it was considered only fit enough to be given to prisoners as punishment.

The Department has endeavoured to simplify the process into a neat mechanised job with the help of a specially devised, treadle-operated machine. This has been found particularly useful for aloe leaves and mahul bakkal.

The next difficulty was to convert the fibre or grass into twisted yarn and subsequently make strands out of yarn. This was surmounted by the adoption of a Japanese type, treadle-operated, automatic rope-making machine.

All that the operator has to do is to feed the fibre or grass in equal and regular measure and the machine twists the two plies, converts them into strand and automatically winds it over a drum at the rate of 85 yards per hour.

Simple machines have also been devised to convert the strand into rope of any thickness, stout enough for any exacting

duty. Fibres have also been bleached and dyed and are being used for carpet manufacture.

The raw material for this industry can be classified as "cultivator's crop" and "capitalist crop." The former includes sun-hemp, linseed, and roselle and the latter embraces aloe, *bhendi*, plaintain, *munj* grass and roots of *palas* trees and *mahul bakkal*. Of these, aloe, *munj* grass and *mahul bakkal* need special mention.

Aloe Fibre.

Aloe fibre is widely grown at present all over the State as a hedge plant and particularly in Baster large tracts are covered with aloe growing wild. The fibre had a great future as an article of export and as a possible substitute for jute. The fibre of the *sisal* variety is next only to Russian hemp in strength and has been proved to be distinctly superior even to Russian hemp as regards resistance to sea water (J. K. Sirkar, Bulletin 66, Indian Council of Agricultural Research, Page 51). From the time of introduction of hand-driven decortication, extraction of fibre has been made economic. The leaves yield on an average three per cent. dry, cleaned decorticated fibre. The fibre was bleached and dyed and it was observed that it showed good affinity for basic dyes. The dyed fibre is being used for making decorative carpets for chairs.

Mahul bakkal is widely grown particularly in the Balaghat district and, from figures available from the local mercantile community, about 50,000 maunds of this crude fibre are exported annually at a price fluctuating between Rs. 14 and Rs. 18 per maund. The bark yields about 42 per cent. fibre which is used for making cheap cordage for fastening round baskets used by the glass industry and potteries.

A combination of the decorticating machine and the automatic rope-making machine functioning side by side would mean employment to several families, particularly in Baihar *tahsil*. Like aloe fibre, this fibre has also given good results on bleaching and dyeing. What decorative use this fibre could be put to is being studied.

Munj Grass.

Perhaps the cheapest, *munj* grass is fed without any prior treatment to the automatic rope-making machine to yield good

quality strand, cheap enough to be used as a binding material to industry and agriculture. This grass grows abundantly on marshy lands, on the slopes of tanks and irrigation canals and on land usually covered by floods. At present it is commonly used for making rope for cots. This has also been converted into rope for heavy duty. One rope-making machine of the Japanese type is enough to provide employment to several families who could convert this material into an important requirement in the packing departments of various industries.

(The above is an article contributed by Sri S. L. Sahu in the *Sunday Standard*).

THE NEED FOR UTILISATION OF BASIC ARTICLES

"In India, Industry so far has developed in a lop-sided manner because of the fact that for raw materials we depended almost entirely on imports and also because of the international situation then prevailing. For these reasons this lop-sided development was tolerated. But now we have to think differently. We have to realise what will happen if the sources on which we have so far depended were suddenly to stop supplying us with our requirements of raw materials. All these factors have to be taken into consideration.

Basic materials are abundant in India, but the raw materials which are produced from these basic materials are wanting. There is for instance, plenty of coal in the country but we have not the arrangements for getting the necessary raw materials out of this basic commodity. We are now importing steel from abroad. You will find that this is the case in almost every industry. The basic raw materials are here in India but no one tries to turn out the materials needed by industries from these basic articles. Such a step is needed before long and whatever political party may be in power, Government will always help you to take up and make this phase of industrialization a success."

THE HON'BLE Sri HARI KRISHNA MAHATAP.

Raising Living Standards.

Aim of Five-Year Plan.

Mr. Gulzarilal Nanda, Deputy Chairman of the Planning Commission, declared that the two principal strains running through India's first five-year plan were the need to achieve economic progress at the quickest possible pace and, at the same time, to remove social and economic inequalities.

The underlying conception of the plan, he said was that the chronic poverty and backwardness of the rural people and of the entire country could not be eradicated if a radically new approach to the problem of agriculture was not made. The new approach, he envisaged, was through rationalisation of agriculture to increase production per unit and reduce the direct pressure of population on land.

The Deputy Chairman defined the objectives set by the plan for achieving higher standards of living and removing inequalities and pleaded for conscious and planned limitation of population which was an economic and social necessity. He also called for the maximum economies in every direction of public expenditure, improvement in administration and public co-operation for the successful implementation of the plan.

Solving Food and Cloth Problems.

Emphasising the need to produce more and invest in basic development Mr. Nanda said: "The most pressing need of the moment is to overcome the acute shortage of food and clothing and of raw materials for our principal industries. This has to be accomplished very speedily. But this is a very limited purpose. We have to think ahead and deal with those factors in our economic situation which are dragging us down and condemning our economy to stagnation at an extremely low level of development.

"The irrigation and power schemes which are at present in progress are likely to strengthen the economy to a great deal.

To complete these works as early as possible, therefore, becomes a major task of the first five-year plan. The programme for rehabilitation of the displaced persons stands on the same footing. Provision for improved administrative and social services and a more rapid rate of development of the less-developed areas are among the listed priorities."

Mr. Nanda referred to criticisms about the targets set by the plan being not high enough or too much and observed: "It is evident that anything less than what is visualised for the first part of the plan will hardly be worthwhile if we really seek to prevent the standard of living from sinking below the low levels at which it stands now. Necessary resources have to be found and those who doubt the nation's capacity to realise any portion of these estimates in a particular direction must face the alternative of making up the deficiency in some other way.

Need to Check Rise in Prices.

"As for the complaint regarding inadequacy of the plan, I wish we could undertake much more. But it is imperative that we avoid the risk of overstraining the economy of the country and of increased recourse to deficit financing which must conflict with the important objective of preventing a further rise in prices'.

For a significant improvement in the standard of living of the people, he said, the rate of development would have to be greatly accelerated. To what extent that would be possible in the next five years would depend in a substantial measure on the magnitude of the assistance that the more developed countries were prepared to extend to India. The second part of the five-year plan, which would be implemented if adequate external assistance was available would help to increase the tempo of development. Details for that part of the plan are at present being worked out.

On the need to improve the condition of agriculture Mr. Nanda said: "The productivity per acre is so low and the number of persons directly dependent on land so large that after partially meeting the needs of the cultivators themselves the surplus left for exchange is very small."

"This is the crux of the problem and the solution lies in a thorough rationalisation of agriculture so that production per unit increases and the direct pressure of population on land is very much reduced."

To enable the large numbers who eke out a precarious livelihood from land to be absorbed in other occupations, Mr. Nanda felt the State had to assume a great deal of responsibility for promoting cottage and small-scale industries on a planned basis. In the case of large-scale industry too, he said, the Commission had envisaged a positive role for the State. Irrigation and other schemes of development would increase the supply of raw materials and enable some of the major industries to work to full capacity. The increase in the supply of power for which the plan had provided would also assist in the better utilisation of existing capacity and in enlarging the scope of industrialisation.

Regulation of Industries.

The nature of regulation of industry visualised under the Plan, Mr. Nanda explained, "is very different from the familiar idea of controls which stifle initiative and hamper production. Regulation of industry is intended to achieve the two-fold objective of ensuring that the administration of industry conforms to the social purpose of the Plan and that the nation's resources employed in industry are utilised with the maximum efficiency."

"Regulation acquires a new significance when it is understood that it is not going to be an imposition of directives from remote quarters but will comprise measures for improving productivity, efficiency and working conditions worked out in collaboration with the best elements connected with industry."

"This is the Commission's view of the mixed economy in which the private and

the public sector will not be two different spheres but integral and inter-related parts of the same structure serving the same ends."

"The successful implementation of the plan", he observed, "has to take account of certain conditions and limitations. It will hardly be possible to keep intact priorities or achieve targets if the price level is not held by effectively maintaining the necessary controls and adopting other suitable measures."

"We should not, therefore, lose our grip on the price level particularly when the Plan itself is to bring in a fairly large volume of new investment for development. The inflationary effect of the programme in the first part is intended to be kept in check by various measures including an appropriate use of our sterling balances and such external assistance as may be available."

On family planning, Mr. Nanda said, India's population was increasing too fast to permit of a rise in the standard of living, considering the moderate rate at which its development could proceed if it had to rely on its internal resources alone.

"Conscious and planned limitation of population is an economic and social necessity from which there is no escape if a reasonable balance between resources and needs is to be maintained" he stated.

Calling for public co-operation, he said, "The question may also be asked. 'What is there in a democracy to take the place of the unified direction and the force which a totalitarian regime can provide in order to remove obstructions from the path of economic development along a set line'? Our answer is that in a democracy, conscious and organised public opinion having before it an accepted programme for the common good will be the sanction as well as the force behind the plan. A common social outlook which interprets progress in terms of the masses is crystallising among all believers in democracy. This furnishes the ingredients of a national plan as distinct from party programmes"—*"The Mail"*.

Industrial Development

Proposal to pay on productivity.

The Development Committee on Industries, agreed to the principle of conducting productivity surveys in the cotton textile, steel, coal, and cement industries.

The Survey, the groundwork for which will shortly be laid with the help of experts, both Indian and foreign, is regarded "an important and necessary undertaking" by the Committee. It is hoped that it would lead to a stepping up of production.

Agreement was also reached on the recommendations of the Consultative Board for retraining retrenched workers. It was resolved that retrenchment carried out within the framework of rationalisation should be staggered, and that retrenched workers should have the option either of accepting gratuities, or undergoing training for alternative avocations.

Such training will be imparted at Government institutions. Maintenance will be provided to the worker by the employer, subject to a maximum period of nine months.

The Committee instructed the Joint Consultative Board to review the operation of Works Committees to improve their working.

Payment by results.

The question of association of workers with management was also referred back for further consideration by the Board.

Most members agreed to the proposal of payment by productivity, and payment by results, subject to this not being misused by employers.

This question, which grew out of the I.L.O. suggestions, was also referred for further elaboration to the Consultative Board.

Sharing of Profits. The Problem analysed.

The joint consultative Board of Industry and Labour discussed the question of norms and standards for the award of bonus to workers in industry.

The importance of this subject has been emphasised in the draft outline of the first Five-year Plan issued by the Planning Commission, and has also recently been endorsed by the Industries Development Committee. Organisations of employers and workers have also from time to time suggested the evolution of guiding principles and standards relating to bonus.

The formulation of norms and standards of bonus involves an examination of the following concepts regarding the nature of bonus, that is, whether bonus:

(a) is an ex-gratia payment which depends entirely on the goodwill of the employer and which cannot, therefore, be claimed as a legal right unless it forms part of the contract of service, or

(b) is deferred wages payable to the worker to reduce the gap between the wages paid and the living wage standard, or

(c) is a share in the profits which workers may claim as of right in view of the fact that profits are the result of the joint contribution made by both capital and labour, and neither partner can seek to enjoy them to the exclusion of the other.

Economists' opinion.

The first of these concepts, viz., that bonus is an ex-gratia payment, is no longer supported by the consensus of opinion held by economists and reflected in the awards of Industrial Courts. On the other hand, all recent decisions of the Adjudicators tend to support the view that bonus is not an ex-gratia payment and that it could be

claimed as of right by workers, particularly in the following circumstances when :

(a) the workers' wages fall short of the living wage standards; and

(b) the industry is making huge profits.

The principle underlying the view seems to be that bonus is to be related to the profits earned by an industry, and that as profits have been earned with the aid and co-operation of the employees, a part ought to be paid to the employees in the shape of bonus as their rightful share in these profits.

Labour's share.

That leads to the further inquiry: "What is to be the share of the workers in the total profits earned"? In this connexion it may be mentioned that the question of evolving a statutory scheme of profit-sharing has been under the consideration of the Government for well over 3 years. It was examined in detail by a specially constituted Committee which submitted its report on September 1, 1948. The main recommendations of the Committee were :

(a) that it was not possible to devise a system of profit-sharing in which labour's share could be determined on a sliding scale, varying with production, and

(b) that labour share in profits should be fixed at 50 per cent of the "surplus profits" which should be calculated by deducting from "net profits," 10 per cent, for reserves and allowing for 6 per cent, fair return on paid-up capital plus reserves.

The Committee also laid down certain principles about "prior charges" on "gross profits" for the purpose of determining "net profits."

The Report of the Committee on Profit-sharing was not unanimous. Both employers and workers raised objections-naturally on different lines and for different reasons. The Central Advisory Council which considered this report also could not arrive at any agreement.

No uniform principles.

In the absence of statutory regulation, profit-sharing and bonus schemes are of

necessity either voluntary or the result of the Adjudicator's awards, which again have not followed any uniform or fixed principles for calculating "residuary surplus" and the workers share therein. In fact, the standards accepted by the Adjudicators have come in for criticism on different grounds, both from workers' and employers' organisations.

The Joint Consultative Board will therefore, have problems for which a definite solution has not yet been found. The main points for consideration will be (a) the nature of bonus; (b) how far it is to be related to profits; (c) the methods of calculating "surplus" profits as arrived from "gross profits" after meeting prior claims (e.g. managing agent's commission, depreciation, taxation, reserves, return on paid-up capital, return on bonus shares, and return on reserves); (d) the norms and standards for each of these :

The Board also considered whether these norms and standards should apply to all industries alike or may vary from industry to industry:—*The Mail*.

* * * Fall in Industrial Production.

"There is a fall in industrial production because there is no replacement of old machinery. Attention must be devoted for building up a reserve fund for this purpose.

The Government is helping industries in the matter of replacement of machinery by income-tax relief and other means.

The 5-year Plan, which laid emphasis on agricultural and rural development schemes, could be easily worked out with the financial resources available.

The policy of discriminating protection started in 1921 had given the necessary fillip to industrial development.

The demand for removal of restrictions on imports, is purely related to the balance of payments and other financial considerations. India was a party to the world agreement that import bans would not be used as a method of giving protection to industries.

Government had assured that the private sector of industry would be helped to the utmost extent; yet it has not developed to the extent possible, and capital formation is very slow.

When things are in short supply controls are quite necessary. Criticisms against

their continuance is therefore, of no avail.

Industrialists should view their industries as national assets, and the people must co-operate with the Government in working the 5 year development plan successfully."

DR. B.V. NARAYANASAMY.

STATE CONTROL OF PRIVATE INDUSTRIES.

"The State could not do without private enterprise, nor could private enterprise function without the administration of the State.

In order to promote the good of the common man, private enterprise and the State could come to an understanding. The Planning Commission had been trying to evolve that kind of understanding.

As regards State intervention, the first provision in the Industries (Control and Development) Bill is for licensing. This might be called the "preventive aspect of regulation."

A more important provision related to the State giving directions, and taking over concerns. This is curative in character.

The most important provision is for the positive, constructive, and creative role of the State, as represented by Development Councils.

Non-intervention by the State in industries is being urged by certain quarters to let the private enterprises alone to play their part. The best way of destroying private enterprises is to leave them to themselves. Without the administration of the State, private enterprises could not function. Private enterprises and the State have mutually helpful roles to play."

SRI GULZARILAL NANDA.

CONTROLS

"There is frequent criticism of the system of Government controls. Controls sometimes become necessary because of deficiency in the availability of raw materials. But very often the working of these controls gives rise to nepotism, corruption and favouritism. They have helped to create very great bottlenecks which also aggravate and exasperate most businessmen. Government feels that controls are necessary and you feel that controls are hampering progress. If controls are withdrawn to-day, who takes responsibility? Will you, businessmen and industrialists see that whatever goods are in short supply will be made available and will be used for the beneficial expansion of industry? Are you prepared to make a scheme which will make it unnecessary for the Government to resort to controls? You cannot expect the Government just to withdraw controls and leave things as they are without some proper guarantee that no inconvenience to the public will result.

The need for controls is there. If controls have created a demoralizing situation in the country, you should work to remove them but at the same time you should ensure that industrial expansion does not suffer in any substantial manner."

THE HON'BLE Sri HARI KRISHNA MAHATAB

Gradual Rationalisation in Industries

View of Development Committee

The view of the Industries Development Committee of the Central Planning Commission is that rationalisation in industries should be gradual so as not to create problem of unemployment, and that employees thrown out of work because of schemes of rationalisation should be helped.

It could be claimed that a quiet industrial revolution is afoot consequent on the realisation of the need to rationalise and mechanise industries to make them more efficient, and to lower the cost of production.

It is felt in some circles however, that because such rationalisation will result in the loss of work to many persons employed in industries, and will thereby add to the unemployment problem, it is necessary that they should proceed slowly.

3 Suggestions

In order to minimise the hardship that will follow retrenchment consequent on rationalisation, the Committee made three suggestions:

1. To absorb into other sections of industry persons found superfluous in one section because of rationalisation;

2. To afford technical training to the retrenched hands, at the cost of the industry concerned, to make them fit for other industries requiring technical or skilled personnel;

3. To require the industry concerned to give a gratuity, by way of compensation, to retrenched employees.

The Committee also examined the question of employee-employer relations generally, and also specially as arising out of the proposed schemes of rationalisation. The Committee realised that retrenchment is bound to embitter such relations, and examined how harmony between labour and capital could be improved.

The Committee suggested that Joint Committees consisting of representatives of labour and management be constituted for each industry. Such committees might be "Works Committees" to settle differences which might arise in a concern, or Joint

Committees which would be common to several concerns of the same type in an area.

Conciliation

When differences arise which could not be settled by such Committees, they will be subject to negotiation and conciliation by officers appointed for the purpose, such as Conciliation Officers or Officers of the Department of Labour.

In case Conciliation proceedings do not result in a mutual agreement, the dispute will be referred to arbitration, either voluntarily at the instance of either or both parties, or compulsorily by the Government.

Each industry might profitably agree to constitute a Conciliation Committee (consisting of representatives of labour and management, and presided over by an agreed Chairman), which will settle all disputes arising within a specified period, and whose awards will be binding.

There should be no antagonism between the Works Committee in a concern and the Trade Union relating to that industry, in the matter of the Works Committee settling a dispute which arises within its concern. It is not necessary to require that every settlement arrived at by a Works Committee should be ratified by the Trade Union concerned.

* * * Standardisation of goods Bill referred to Select Committee

The Indian Standards Institution (certification of marks) Bill, 1951, has been referred to a Select Committee to report by Oct. 1.

The Bill seeks to provide for the standardisation and marking of goods, a work which is at present being carried on by the Indian Standards Institute.

The Institute already issued standards for a number of commodities, and is considering standards for a number of others. At present, the standards are voluntarily accepted and the time is not ripe for making them compulsory.

GLEANINGS FROM THE PRESS.

Review of News in Industry, Commerce & Finance.

Development & Control of Industries Bill.

The original structure of the Bill had been completely changed by the first Select Committee. Subsequently, the Planning Commission had considered the whole question, and suggested certain changes.

The original Bill did not contemplate the setting up of a Central Board of Industries, as suggested by the first Select Committee. The original Bill contemplated that the Government itself would issue licences whenever any new industry came into being. Power was also vested in the Government to take over any industry when it went wrong.

The Select Committee introduced the Central Industries Board with the power to issue licences. If any party is dissatisfied with the decision of the Board, then the appeal lies with the Government. A number of conditions are laid down before an industry could be taken over. These provisions, which were introduced by the Select Committee, completely changed the character of the original Bill.

Controlled Economy.

"Now that a controlled economy has been accepted as a feature of our plan," Mr. Mahatab said in parliament, "whatever law we may have to pass in that connexion must be within that scope. The Bill, as it emerged out of the Select Committee, does not fit in with the scheme."

The Government moved a large number of amendments to gain this end in the second Select Committee.

The Planning Commission emphasised the fact that the development of industries would, to a very great extent, be by private enterprise. The aim should be to adapt private enterprise to the country's needs.

It had to be ensured that private industry was efficient, with the emphasis on productivity, and that national resources would not be misdirected. The Planning Commission had suggested the establishment of Development Councils for each industry to achieve this purpose.

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These Councils would consist of representatives of employers, workers, and technicians. Provision had also to be made for levying cess on industry to promote scientific research and improvement in design.

Whenever a Development Council found that a particular unit of industry did not abide by the instructions given to it, it would advise that the unit might be taken over by the Government or some changes made in management.

The Government also proposed to establish an Advisory Council. It would have nothing to do with issuing licences or taking over industries. It would be a general advisory body. The Development Councils would be there to regulate the working of industries internally.

With the help of these Councils, "the intention is to build up certain personnel competent to take charge of industries, whenever necessary, or to run Government industries also."

The Planning Commission's draft report had given "flesh and blood" to the Government's 1948 industrial policy announcement. The role of both private and State sectors in the national economy had been clarified. The Bill, originally introduced in 1949, had been readjusted with this end in view and passed in parliament.

93442 Machinery for India Japanese Offer.

Japan will give preference to exports of machinery in her programme of expansion of trade with India, according to Mr. Iriama, Chief of the Japanese Overseas Agency.

Japan, he said, would require from India in the main, raw cotton, raw jute, manganese iron ore, hides and skins, castor seeds, groundnuts, linseed, cotton seed, spices and tea.

Japan had a vast range of commodities to export to India but the following, would be needed by India: Machinery,

rayon yarn; silk yarn, camphor, dyes non-ferrous metal products and newsprint.

Trade in recent years between the two countries, he said, was not very impressive. He attributed this to India's desire to protect her domestic industry, and the general trend to reduce imports from hard currency areas.

Japanese goods were absorbed well in world markets, he stated. Any slackness in the demand for Japanese products which might result in the event of the termination of the Korean war, would be more than offset by the needs of the economic and social reconstruction of Korea, he added.

Allotment of Iron and Steel.

None for New Rice Mills.

The Government has directed that no iron and steel shall be released from the State non-agricultural quota for the construction of new rice mills and oil mills or for the extension of existing mills, except under its orders.

Iron and steel will, however, be released for repairs to the existing rice mills on the specific recommendations of the factory inspectors or Collectors of the districts. Applications for iron and steel for the construction of soap factories will be considered on their merits, and the supply will be allowed only on authorisation by the Government.

There is no ban on the issue of iron and steel materials for the construction of godowns.

India's Imports of Machinery.

Largest Supply from Britain.

India's imports of machinery, including belting for machinery, totalled Rs. 84.89 crores in 1950-51, of which prime movers, such as railway engines, formed the major item of import.

Machinery was the second biggest item of import in India's foreign trade, surpassed only by her imports of raw cotton and waste, which totalled over Rs. 100 crores.

Of the import of machinery (excluding belting for machinery and printing machinery), totalling Rs. 82 crores, supplies from the U.K. amount to Rs 52 crores, from the U.S. to Rs 14 crores, and from Czechoslovakia, the third largest supplier, to Rs 1.46 crores. Imports of machinery from other countries totalled Rs. 14 crores.

Indian-Made Planes for I.A.F.

Bangalore Factory's Production Scheme.

The prototype of the first Indian-made aircraft, designed and manufactured by the Hindustan Aircraft Factory, successfully made its initial trial flight in the first week of August 1951. This two seater basic trainer, called H. T. 2. was in the air for more than 4 hours in its first flight. The factory executives are satisfied that the designing was basically sound. The plane is yet to be fully tried on the usual regulation tests during the next 3 months. If found quite sound, the prototype will be handed over to the Indian Air Force for approval and the final production programme will emerge thereafter. The factory has programmed to develop 300 such planes for the I.A.F. in the next 3 years, the first plane coming out some time next year.

Hindustan Aircraft Factory.

Directors' Move to Increase Capital.

The Board of Directors of the Hindustan Aircraft Factory decided to seek the permission of the Government of India to increase the undertaking's capital by Rs. 2,00,00,000.

The Board discussed matters relating to the development of the factory, particularly, the production of aircraft and aero-engines. The opening of overhauling bases in various parts of India, using the Bangalore factory essentially for the production of aircraft, was also discussed.

The Hindustan Aircraft Factory has taken over the overhauling base at Barrackpore, but actual work has not started there.

Rs. 1,15,00,000 Scheme for Madras Harbour

To improve passenger and cargo facilities

A new Rs. 1,15,00,000 scheme for the development of Madras Harbour within its present limits, to maximum capacity to provide greater facilities for passenger and goods traffic, and to be financed by the Port Trust's own resources, without waiting for outside help, was explained to Press representatives by the outgoing Chairman of the Madras Port Trust, Mr. G.P. Alexander.

This scheme, would form the preliminary for his two-year-old major expansion

scheme, originally estimated to cost Rs. 4,50,00,000, which involved the expansion of the Harbour Southwards, and the creation of additional berths to accommodate four more ships.

Taken together his new scheme would form "part one", and the scheme for the southward expansion "part two" of an overall expansion scheme.

Approved

Mr. Alexander said that the Port Trust Board approved his proposal to revise the estimate for the Rs. 4,50,00,000 scheme by raising the figure to Rs. 4,90,00,000 and also approved the Rs. 1,15,00,000 subsidiary scheme. The revision in the estimate of the major scheme was necessitated because he had proposed a re-modelling of the scheme to the effect that there would be a straight cut southward from the present south quay, as against the originally envisaged Link at the entrance, the entrance would be moved 150 feet eastwards and further, its width would be 500 feet instead of the originally proposed 400 feet. The revision had also been necessary because of the increase in the prices of materials.

The scheme had been held up pending the possibility of getting financial assistance under the Colombo Plan. The Trust had offered Rs. 30,00,000 to the local Government for the land south of the port for the marshalling yard.

Mr. Alexander said he had put up his new Rs. 1,15,00,000 scheme to provide two additional berths for ships in the present limits of the Harbour, bearing in mind the need to allow space for ships to lie at moorings when storms affected the Port.

New scheme

According to the new scheme, the North Quay which was now used only as a berth for a single coal ship would be converted into one where a passenger ship could be berthed. And in the area behind the north groyne it was proposed to construct a double storeyed transit shed, the first storey of the building being equipped as a passenger landing shed, with facilities for Customs examination sheds, and waiting rooms. Passengers would be able to disembark from the ship straight on to the first storey of the building by means of a movable gangway. On the ground floor, there would be a transit shed for cargo carried by passenger ships, such as those coming from Rangoon and Singapore.

With the conversion of the North Quay into passenger ship berth, Mr. Alexander said passenger ships would not be berthed at the South Quay as now. The berths on the South Quay would be solely used for the landing of cargo. At present, Mr. Alexander explained, the handling of cargo at the South Quay is handicapped by the fact that passenger traffic has to be handled at the same place. Under the new scheme they would be able to handle more cargo at the South Quay.

At present, passengers landing at South Quay have to travel a long distance to get out of the Harbour, but if they landed at the North Quay they would be able to get out by means of a short road from port limits near the Royapuram Level Crossing, Covering, only a short distance from the North Quay.

Coal trade

Mr. Alexander said another change provided for by the new scheme was the creation of a coal berth at the southern end of the East Quay and another further south of it near the bend for oil ships and ships for taking export cargo of ores, such as magnesite, of which larger and larger quantities had been shipped through Madras Port in recent years. It is proposed to isolate the coal traffic to one part of the Harbour, from where its movement over land to the coal yards will be easier than now.

The Harbour has now berths for 9 ships by the quayside, and under the new scheme this will be increased to 11.

Asked if the Trust could carry out the new scheme at once, Mr. Alexander said, they are approaching the Government of India for permission to carry it out.

"We are going to finance this scheme from our own resources," he said, the scheme will take three years to complete.

As regards the major scheme of southward expansion "We cannot start it until

we get assistance under the Colombo plan, and also some other financial assistance," Mr. Alexander concluded.

Big change in next 5 years

Union Minister's expectations

Mr. N. V. Gadgil, Union Minister for Power, Production, and Supply, said that India was using only six per cent of her water resources, and the rest was going to waste. The Government had, therefore, decided to make the maximum possible use of water resources for irrigation, generation of electricity, and cheap transport.

On Feb. 1 this year the power supply in the country had gone up by 29 per cent. In the industrial field, he said, they were fast approaching the point when their pre-war production would be restored. The Sindhri fertiliser factory on which, so far Rs. 15 crores had been spent would shortly go into production, and the Government proposed to spend another Rs. 8 crores on it.

***The expert Technical Mission which advised the Union Government on establishing the Sindhri Fertiliser factory estimated the cost in 1943 at Rs. 10.53 crores. The main reasons for the increase in the estimate to Rs. 23 crores is due to certain important additions to the scope of the project shortly after the submission of the Mission estimate. While the Mission estimate was prepared on the basis of prices ruling in 1944, most of the factory was built and the required plant, machinery and equipment were purchased 3 to 5 years later when the world level of prices had gone up.

Mr. Gadgil said that although after independence the measure of success in eliminating poverty and illiteracy, and raising the standard of living of the people, had not been as great as many expected, yet he could claim that the foundations of future prosperity had been "well and truly" laid.

Mr. Gadgil said that electric power was the foundation of all prosperity. He declared that the country would have turn

ed the corner when three or four multipurpose projects already under construction were completed. He did not doubt that within five years the entire condition of the country would be changed.

Tribute to Engineers

He said that while they could not do without foreign talent, the present projects gave an opportunity to Indian engineers to show the best in them. Engineers from various parts of the world who attended the recent International Engineering Conference in Delhi had paid tributes to the work of Indian engineers in MADRAS, Mysore and Hyderabad, he declared.

The Minister assured that the future development of the country would be on the basis of regional requirements, and there would be no lopsided development.

The Hyderabad Government was making as much progress as Madras State in carrying out the Tungabhadra Project.

Management of Sindhri Factory

Formation of Board being considered

The capital expenditure on the Sindhri Fertiliser Factory was estimated at Rs. 26 crores, including Rs. 3 crores for raw materials.

The manufacture of ammonia had begun. The factory started producing fertiliser from the second week of September, while the formal inauguration will be made some time in October.

At present the factory is being managed by a General Manager working directly under the Government, but the question of setting up a Board of Management is under Government's consideration.

Government had been advised by the Attorney-General that a specific Act would be necessary before any such Board could be set up. The necessary amendments were moved when the Industry (Control and Development) Bill was passed in parliament.

The Government is also considering the question of starting a cement factory at Sindhri to make use of the waste product from the Fertiliser Factory.

Lignite Deposits in S. Arcot.

U. S. mining expert's recommendation.

The Government of India has accepted the recommendation of the official of the U. S. Bureau of Mines, who undertook a preliminary survey of the lignite deposits in S. Arcot, Madras to set up a committee of 4 engineers to continue investigations.

The official had recommended that one of the 4 engineers should be an American mining engineer under the Point Four Plan. The selection of the engineer is receiving the attention of the Governments of India and Madras.

Shipbuilding comes under works Ministry.

The Union Ministry of Works, Production, and supply will, henceforth, handle the shipbuilding industry, including the allocation of ships manufactured at the Vizagapatam yard at the Government's instance. The subject was till now dealt with by the Commerce and Industry Ministry.

Ford Foundation aid for India.

Mr. P. Hoffman, President Ford Foundation said India and Pakistan would be given high priority in the Foundation's scheme of supporting "new activities to help a better use of economic resources in Oversea areas."

The Trustees of the Foundation had allocated \$ 5,000,000 for expenditure overseas in the present year.

Mr. Hoffman is now leading a party of Ford Foundation representatives on a world tour to select the areas in which the Foundation should spend money. Other members of the party are Messrs. C. C. Davis, J. B. Howard, P. H. Holmes, and J. Cowles (Sir.)

Mr. Hoffman said the Foundation had slightly less than \$ 500,000,000 the income of which "is to be spent on international harmony and the improvement of human welfare." The income was roughly \$ 25,000,000 annually.

Policy explained.

The Foundation would not undertake any projects which could be financed by the Government of the areas concerned or by the U. N. or under President Tru-

man's Point Four programme. The Foundation preferred projects "which, by supplementing these other activities, would bring worthwhile results."

Asked whether he could give an idea of possible projects to be financed, after his meetings with members of the Planning Commission and Ministers here today, Mr. Hoffman said it would be premature to say anything about it now.

Replying to another question he said India and Pakistan were to be given high priority among oversea areas, as they had new Governments faced with a number of problems.

Replying to questions on Marshall aid of which he was Administrator, Mr. Hoffman denied that the Economic Co operation Administration in Europe had at any time interfered in the internal affairs of European countries. The E.C.A. was only there to finance recovery programmes, and to see that such aid was not used for any other purpose.

The Foundation was established with the fortune amassed by the motor car manufacturer, Mr. Henry Ford, and his son, Edsel. It lays emphasis on "direct action, and not scholarly study." It is not a bank on which individuals may draw for worthy causes; it will instead formulate its own policies, and seek out those who can put them into effect. Its first concern is to remove war's basic causes, and to build a world foundation for permanent peace. It supports scientific activities designed to increase a knowledge of human conduct."

Second Technological Diploma Examination

The question of holding another examination in December for students who failed in the Technological Diploma examination of May is under consideration of the authorities.

In May, 1,045 candidates appeared for as many as 14 subjects included in the examination, and 400 passed.

Another examination this year also, as during last year, is urged by many 'Anxious Parents'. It is too early to indicate the probable date of the examination, but, in any event sufficient notice will be given to the candidates.

Decline in Oil Seed Prices Due to Enhanced Export Duty

During last two years export of groundnut oil was freely allowed, subject to the maximum target fixed by the Government of India. During October and November last year, large commitments were entered into by Indian shippers and millers with overseas buyers for shipments during November, 1950, to February, 1951, and in some cases up to June, 1951, also. Owing to larger sales and competition from buyers, prices shot up in India. Fearing that export might affect internal supply, the Government of India imposed a ban on the total export of oil on Feb. 26, 1951. On representations Government relaxed the ban partially on March 29 and allowed small quantities against prior commitments to be shipped up to June, 1951.

Since the summer crop is good the supplies in sight are large.

There will be plentiful supply for the Vanaspathi industry and other consumers in India.

Prices have fallen since the middle of May this year when it was between Rs. 470 to Rs. 475; per candy of 500 lbs, today it is between Rs. 340 and Rs. 340. This has affected the whole trade including millers.

In pre war years the average production in Madras State was about 12 lakh tons and nearly 7 to 8 lakhs was exported. Since 1945, there was a progressive reduction in exports. In the last three years, due to the failure of monsoon, the production has fallen and is about 9 lakh tons and of this only about 2 lakh tons is allotted for export.

Manufacture of Telephones Progress at Bangalore Factory

The Government-owned telephone factory at Bangalore is working according to the schedule to produce complete telephones by the end of 1952.

Mr. Raj Bahadur, Deputy Communication Minister, reporting progress in the establishment of the factory said in reply to Mr. R. K. Sidhva in Parliament that the total capacity of the factory would be 15,000 instruments a year.

The annual output in terms of money would be Rs. 2,50,00,000. Out of eight factory units five had been completed, and three

were under construction. All the construction work was expected to be completed by the end of the year.

Colouring of Vanaspati Suitable medium not found yet

The Committee appointed by the Government to find a suitable colour for mixing with hydrogenated oil to prevent adulteration with ghee, is expected to submit its report by October, 1951.

No effective colouring medium had so far been found which would not affect the quality of vanaspati, which would not be injurious to health, which could not be easily eliminated, and which is not objectionable to sight.

Cloth, Cement & Paper.

As against the average monthly availability of cloth for civil consumption of 131,000 bales during 1950, availability for internal consumption has risen to 254,515 bales in June, 1951.

Cement production in the first half of 1951 was 1.51 million tons as against 1.26 million tons in the corresponding period during 1950. The production of paper and paper-board has improved to 63,200 tons in the first 6 months of 1951, as against 52,800 tons in the same period last year.

Among the industries whose performance in the first half of 1951 was below the level attained in the previous year, are bicycles, electric lamps, sulphuric acid, cigarettes, and bare copper conductors.

India's customs and excise revenue

The total gross sea and land customs revenue collected in India in July, 1951 amounted to Rs. 18,99,00,000 compared with Rs. 11,60,00,000 in July 1950.

Of the total customs revenue collections, import duties accounted for Rs. 11,26,00,000 as against Rs. 9,31,00,000, export duties for Rs. 7,36,00,000 as against Rs. 1,59,00,000 and land customs and miscellaneous for Rs. 38,00,000 as against Rs. 70,00,000.

The total gross collection of Union excise duties amounted to Rs. 6,98,00,000 compared with Rs. 6,89,00,000.

Quinine industry Expansion proposed

Questions relating to the future of the quinine industry in the State and the fixing of an appropriate price for quinine were discussed with the Union Health Ministry by the Madras Development Secretary, Mr. J. M. Lobo Prabhu, during his recent visit to Delhi.

Madras and Bengal States produced just under 1,00,000 lb. of quinine, as against the annual consumption of 2,50,000 lb. on an average during the last 2 years. The estimated quinine requirements of the country is 15,00,000 lb. The expansion proposed now in Madras will increase the production to 2,50,000 lb.

Over a million persons died annually due to malaria. It was the State's duty to make quinine as cheap as possible. At present the price of quinine is nearly Rs. 42 per lb. as against Rs. 52 for imported quinine. Unless the price of quinine is raised, it will not be possible to pay more to the Cinchona plantation labour.

There is demand for Madras Quinine abroad. Out of 40,000 lb. of quinine accumulated during the war, over 20,000 lb had so far been sold. Before the end of 6 months, the entire stock including current production will be sold out.

Acreage under quinine

An official note states that 20,000 lb of quinine sulphate is manufactured at the Government Quinine Factory, Naduvattam. The area under cinchona in the Government Cinchona Plantations Nilgiris, is 2,380 acres, and in the Annamalais, about 7050 acres. Of the total of about 9,430 acres 3,500 acres have been planted.

The sale of quinine products for 9 months from July 1950 to March 1951 amounted to Rs. 13,88,852 as against Rs. 5,38,324 in 1949-50.

The Government had ordered resumption of construction of the Modern Quinine Factory at Annamalais. The cost of the scheme is Rs. 24 lakhs and Rs. 18 lakhs had been already spent.

Cinchona plantation is very expensive, costing at the rate of Rs. 5,000 annually

for 20 years. As it is not possible to depend upon the new plantations for the next six years the Government is examining if the factory could be used producing extracts of nux vomica, digitalis and other drugs. The Government is corresponding with Sir R. N. Chopra, Indian Drugs specialist on the matter.

The quinine sulphate produced in the Government factory is up to the B. P. standard. The factory is incurring an annual loss of Rs. 3 lakhs and if the price is increased there would be profit.

Madras Govt. allowed to export quinine

The Government of India had agreed to Madras exporting on an ad hoc basis, 20,000 lbs. of quinine sulphate 20,000 lb. of cinchona febrifuge, and 5,000 lb. of Totaquina.

The question of fixing a uniform price for quinine sold by the W. Bengal and Madras Governments is under the Union's consideration.

As regards the Madras scheme of vegetative propagation of cinchona the Government of India will have it reviewed by its Principal Quinine Officer, before deciding on the question of subsidy.

Copper sulphate industry Protection not necessary

The Government of India has accepted the recommendation of the Tariff Board that the copper sulphate industry does not need protection by way of customs duty at present.

According to a Press Note, issued by the Ministry of Commerce and industry the recommendation of the Tariff Board was based on its finding that the fair selling price of indigenous copper sulphate was lower than the landed cost without duty on imported copper sulphate.

The Government has also decided to bring copper oxide under export control to regulate exports and ensure adequate supplies to the domestic copper sulphate and other industries which can use this material to supplement the limited resources of copper scrap.

Canned vegetables industry Claim for protection rejected

The Government of India has rejected the claim of the canned and bottled vegetables industry for protection, in accordance with the recommendation of the Tariff Board.

The Tariff Board which conducted an inquiry into the claim reported that "no case has been made out for the grant of protection to this industry. The fair selling price of indigenous products exceeds the landed cost of the imported varieties by an amount equal to the existing revenue duty."

The other recommendations accepted by the Government are that steps should be taken by both the industry and the State Governments to develop co-operative farming of vegetables, that stricter measures should be taken for the enforcement of the Fruit Products Order and that the present policy of the Government of purchasing the entire requirements of the Defence Services in respect of canned and bottled vegetables from the domestic industry should be continued.

Gingelly crop in Madras State

The area under gingelly up to July 25, 1951 is estimated at 287,000 acres. Compared with the area of 263,400 acres, estimated for the corresponding period of last year it shows an increase of 7.2 per cent which is due mainly to timely rains at the time of sowing.

A decrease in area is estimated in W. Godavari, Anantapur, Nellore, Malabar and S. Kanara and an increase in the other regions of the State except in Kurnool, Cuddapah, and Tanjore, where the area was the same as that of last year. The increase in area is marked in Chingleput (2,900 acres), N. Arcot (4,500 acres), Salem (2,000 acres), and Coimbatore (5,700 acres).

The yield per acre is expected to be normal in all the districts of the State except in W. Godavari, Anantapur, Chingleput, Coimbatore, and Madurai. In W. Godavari, the crop is reported to have been damaged by heavy rains in July.

India's exports to Dollar area up

The total value of Indian exports, including re-exports to hard currency areas since devaluation up to May 1951, was £55,43,00,000, (about Rs. 263.85 crores). The total value of imports from the hard currency areas during the same period was \$ 86,500,000 (about Rs. 41.17 crores).

A warning to groundnut exporters.

The Government of India has received reports that some exporters have offered groundnut and groundnut oil for sale to overseas buyers with guarantee of export licence, and some have even quoted licence numbers.

It is announcement that no quotas of groundnut and groundnut oil have, in fact, been released for export outside India in the recent past, and firms which are found to have made false statements in this respect will be debarred from receiving licences in future.

Groundnut exports from India Destinational quotas for last quarter of 1951

The Government of India announced destinational quotas of 15,500 tons of groundnut and 11,650 tons of groundnut oil for export during the last quarter of this year.

No other exports of groundnut oil will be allowed till the end of the year.

A Press Note issued by the Chief Controller of Exports said "the export policy for 1952 will be considered only after the final estimates and the internal requirements are definitely known."

Against the quotas now released allotments will be made to established exporters only for shipment to countries, with which India has entered into agreement for the supply of groundnut or oil.

Burma which recently signed a 5-year agreement with India, will receive 9,500 tons of groundnut oil, but no groundnut. Switzerland will receive 12,500 tons of groundnut and 2,150 tons of oil, while Austria will receive 3,000 tons of groundnut only.

Upward trend in production In 40 Industries

Forty important industries, including coal, steel, cotton textiles jute manufactures, cement, paper, diesel engines, electric motors electric transformers, caustic soda, soda ash,

machine tools, copper, lead, power alcohol, and sheet glass, have registered an upward trend in production during the first half of 1951.

Production figures for the period January to June, 1951, reveal that local production, which reached the record figure of 31.9 million tons in 1950, rose to 17.25 million tons in the first 6 months of 1951, against 16.28 million tons in the same period last year. Steel has registered a rise of 48,000 tons in the first half of 1951 going up to 525,000 tons, as against 477,000 tons in the same period last year.

Cloth production in the first 6 months of this year was 2,014 million yards, as against 1,899 million yards in the same period last year. Yarn production in the first half of this year was 631 million lb as against 605 million lb in the corresponding period in 1950.

Trades certification Board Union Govt. proposes formation

The Government of India proposes to set up a National Trades Certification Board to conduct examinations and award certificates of proficiency.

Although training facilities are available in technical and industrial institutions in India, it is said there is neither coordination in the matter of training and testing nor any uniformity of standards and methods of conducting examinations and issuing certificates.

To fill this gap the Government wants to set up a Central Board. A committee has been formed to study the matter. On the committee's suggestion, a questionnaire has been circulated to Chambers of Commerce and other associations.

Cacao cultivation in S. India Scope for extension

India is in a position to meet the demand for superior cacao if a serious effort is made to effect a rapid extension of the area under this beverage crop in all such regions which have been assessed as suitable for it.

In a note on the value of cacao (plant) to S. India the Fruits Department of the Agricultural College stated that Wyanad, lower Palnis, Agency tracts, the West Coast the Nilgiris, Kolli hills, Yercaud and Javidi hills might be considered to be suitable for cacao

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cultivation. Ideal conditions had been found at the foot of the Nilgiris at Kallar and Burliar, and the only variety that had been introduced, the "criollo," had remained in a pure form.

The note gives instructions on the cultivation of cacao and adds that efforts are now under way to increase rapidly the production of cacao for supply to persons interested in cultivating this plant.

Aluminium Industry

Plans for expansion being investigated

Plans for the expansion of the Aluminium industry are now being investigated by the 2 main aluminium factories in India which together produce 3,678 tons as against the total requirements of 15,000 tons a year.

One of the firms has applied for financial assistance to the Government to expand its productive capacity, while the other firm is making a survey to start another factory.

To some extent, the 2 factories are not working up to their installed capacity because of the want of adequate power. No subsidy is needed to be given to the industry because Indian prices compared very favourably with those of imported materials.

Plastic Industry

Special depreciation rates allowed

The plastic industry will be included in the Income Tax Schedule for allowing special rates of depreciation on plastics machinery and moulds, according to the Secretary of the All India Plastic Manufacturers' Association.

A Press Note issued by him stated that the Secretary of the Central Board of Revenue has informed the Association that the Board had decided to amend the Income Tax Act so as to allow the same depreciation in respect of plastic manufacturing machinery as was allowed in the case of rubber goods.

The Note added that the Minister of State for Finance, Mr Mahavir Tyagi, had informed a deputation from the Association that the industry would be allowed a basic depreciation of 12 per cent on plastic machinery and 40 per cent on moulds as in the case of rubber.

Newsprint allotted to India To be distributed by Government

2,100 tons of newsprint, allotted recently by the Commodity Group in Washington, will be distributed by the Government of India itself to various newspapers.

The stock position of various newspapers will be taken into consideration when the distribution is made.

The Government has no intention to control prices of newsprint at present. These prices in India are based on the landed cost of newsprint, obtained mostly from European countries where the prices are higher than those in the U. S. The U. S. quotation at present is reported to be \$105 (Rs. 500) to \$116 (Rs. 552) per ton, and the price in India is approximately Rs. 1,400 to Rs. 1,600 per ton at present.

To set up Tariff Commission Select Committee report on Bill

The main recommendation of the Select Committee's report on the Bill providing for a Tariff Commission is that, except when necessary, officers of the Government in the administrative services should not be appointed as members of the Commission. If any such appointments have to be made, they should be confined to the minimum.

The report, also recommends that the maximum number of members of the Commission should be increased from 4 to 5.

Members of Parliament or of a State Legislature should not be debarred from becoming members of the Commission. The law, however should provide for the vacation of his seat by a member in the Legislature on his being so appointed.

The Committee has provided for reference to the Tariff Commission of protected industries where the protection given requires to be considered further with a view to its modification or abolition.

Express provision has been made in the Bill to ensure that due regard is given by the Commission to cottage and other small-scale industries engaged in the same or allied field before granting protection to an industry.

In the opinion of the Committee a time-limit should be fixed within which the Government should ordinarily be required to take action on every report of the Commission.

Aid to Industries by Finance Corporation Government to be asked to raise lending limit

The Industrial Finance Corporation proposed to ask the Government of India to raise its present lending limit of Rs. 50,00,000 to a single borrower.

17 loans sanctioned

The Corporation had sanctioned 17 loans involving Rs. 2,38,95,000 during the year ended June 30, 1951, according to its report.

The major industries, which benefited from loans, are textile machinery, mechanical engineering, electrical engineering, cotton textiles, woollen textiles, rayon, electric power, metallurgical industry, iron and steel, aluminium, sugar mining, paper, automobile, and tractors.

The report added that the Corporation had, during the year, relaxed its general policy of granting loans to provide maximum assistance to industries.

In the case of new applicants, the Corporation had allowed reasonable amounts for working capital, in addition to their requirements of blocked capital. Industrial concerns, which had already borrowed from the Corporation, but were in need of further help, were also sanctioned loans.

Financial position

All this was possible, because of the 'comfortable financial position of the Corporation'. During the year, the bonds issued by the Corporation were subscribed to the tune of Rs. 5.3 crores.

The condition of Indian industry is "not without concern" because the restrictions on credit, resulting from stringent monetary conditions and rising prices, are likely to affect the production of existing industries, and check the much-wished-for expansion. Industries are already feeling the strain of finding a larger working capital, and those planning to install additional capacity are hesitating to put their schemes into effect.

'It is only if the position of supply of raw materials from foreign countries eases appreciably as a result of an early termination of the Korea war that all industries will be able to record improvements in production.'

Future applicants, could get the loans sanctioned quickly if they provide adequate information in the forms, and take measures to ensure that the titles of their companies are made perfect, as very often defects were noticed, the removal of which took time.

India's Foreign Trade

Favourable balance in 1st half of 1951

India had a favourable balance of Rs. 9.28 crores in her foreign trade in the first half of 1951, as against Rs. 5.82 in the corresponding period last year.

There has been an increase of nearly 60 per cent in the value of her trade during this period over the corresponding period last year.

High prices of both exportable and importable goods are stated to have been mainly responsible for the increase in the value of her exports as well as imports.

India's exports during the first 6 months were estimated at Rs. 403.01 crores compared to Rs. 252.51 crores in the corresponding period last year.

Imports amounted to Rs. 383.74 crores as against Rs. 246.69 crores.

India had a favourable balance of trade with all countries except the United States and Pakistan during the first half of 1951.

With the U.S. India's exports and re-exports accounted for Rs. 78.20 crores and imports Rs. 78.26 crores, leaving an adverse balance of Rs. 6 lakhs.

India's trade with Pakistan showed an adverse balance exports and re-exports being to the value of Rs. 7.22 crores, and imports Rs. 24.61 crores.

Trade with the U.K. was estimated at Rs. 89.14 crores on the export side, and Rs. 68.95 crores on the import side. The increase in the value of India's foreign trade is partly attributed to the fact that many of the continental countries which were formerly classified as hard currency areas were treated this year as soft currency areas.

Technical aid pact with UNESCO.

India has signed its second technical assistance agreement with U.N. Educational, Scientific and Cultural Organisation (UNESCO).

Under the agreement, UNESCO will send three experts to India to help to set up a scientific documentation and research service for India's growing research laboratories, technical training institutions, and industries.

UNESCO will also make available fellowships and their assistance to Indians for training abroad to become documentation and reference specialists.

The facilities of the service, which is to be set up in India, will eventually be made available to scientists throughout S.-E. Asia.

UNESCO is already implementing its first technical aid agreement with India, which calls for the despatch of 10 specialists in such fields as plastics, dam design, and electrical engineering.

PUBLIC WEAL & PRIVATE ENTERPRISE

"Private enterprise is not likely to solve India's economic problems. The disqualifications of private enterprise are the demand for high incentives, lack of responsibility towards general public, lack of sufficient standard of efficiency, and lack of character among most of those operating and likely to operate the system.

"In our country, before independence greater emphasis was laid on personal liberty, rule of law, and freedom of expression. In the absence of economic advance, however, all these seem valueless and the people will barter them away willingly for any scheme which seems likely to give them the basic element of economic progress.

"Public weal implies the creation of additional wealth and the preservation of our democratic values."

MR. A. D. GORWALA

Over Rs. 6½-Crore Aid for India.

Canadian Contribution under Colombo Plan.

Agreement on Principles of Assistance Signed.

Government of India and Canada have signed notes embodying an agreed statement of broad principles governing Canada's financial aid to India under the Colombo Plan. The Canadian Government has announced that aid of the order of \$ 15,000,000 (about Rs. 6,75,00,000) would be available under this offer during the fiscal year 1951-52.

The notes were signed by the acting Canadian High Commissioner in India, MR. RICHARD GREW, on behalf of Canada, and by MR. S. DUTT, Secretary, Commonwealth Relations, Ministry of External Affairs, on behalf of India.

The "Statement of Principles" now paves the way for detailed negotiations with Canada regarding her aid for some of the development projects of India.

Nature of aid

The contribution is likely to be available partly in the form of goods which would be sold in India, and thus yield counterpart funds for the development of Indian projects, and partly in the form of supplies of capital equipment for such projects.

These projects will be covered by the Colombo Plan and the 5-year plan of India, and will be of various types, probably including those relating to irrigation, water power, and food production schemes.

An official of the Canadian High Commission, accompanied by officials of the Union and State Governments, will be visiting certain projects shortly in this connection.

Details of agreement

"The Governments of Canada and India agree to the establishment of the following principles:

1. All economic aid supplied by Canada to India under the Plan shall consist of goods and services in accordance with specific programmes agreed upon from time to time between the 2 Governments. Similarly, agreement will be reached on the methods of procurement and transfer.

2. In order that Canadian aid may cover different types of projects, different forms of

financing may be used; in particular, aid will be available on either a grant or a loan basis depending on the nature of each specific programme and the use to which the goods and services supplied under it are put.

3. The particular terms of each specific programme will be a matter for agreement between the 2 Governments, subject to the following general provisions:

(A) GRANTS: In any specific programme under which the goods financed by grants from Canada Government are sold or otherwise distributed to the Indian public 'counterpart funds' will be set aside normally. The Indian Government will set up a special account for these funds and will keep separate records of the amounts placed in the account in connexion with each specific programme. It will pay into this account the rupee equivalent of the Canadian expenditures on goods and services supplied under any such programme.

The Government of India will, from time to time, report to the Government of Canada the position of this account, and will supply a certificate from the Comptroller and Auditor-General of India. The 2 Governments will, from time to time, agree on the economic development projects in India to be financed from this account.

Loans

(B) LOANS: For the specific programmes which are agreed to be appropriate for financing by means of loans, the terms of the loans will be determined by the 2 Governments.

These terms will relate primarily to the commercial character of the particular project in question, to its anticipated earnings and to its anticipated effects on the foreign exchange position of India.

U.S. experts to visit India

The U.S. Commerce Department had signed contracts with American firms for the development of industry in India and Pakistan under President Truman's Point Four plan of assistance to under-developed areas.

Specialists of the Armour Research Foundation of Chicago will visit India for:

1. The development and improvement of small-scale industries, using local resources and manpower for domestic and export markets.

2. The advancement of efficiency of the indigenous foundry industry and

3. Consultations with Forest Research Institute officials at Dehra Dun on the latest U.S. methods in the handling of materials, processing and production.

Technical Experts for India

Aid agreement signed with U.N.

India has signed a technical assistance agreement with the U. N. providing for the despatch of experts to India to train Indians in modern sampling techniques to determine the quality of production, according to a U.S.I.S. release.

The agreement was signed on behalf of India by Mr. Benegal Narsing Rau, India's chief representative to the U. N.

Under the agreement, the U.N. will provide the services of a director and three expert lecturers for a period of three months, and the services of an Executive Secretary for 4 months, for the purpose of organising training in India in the techniques of statistical quality control.

The training to be organised by the U.N. experts will be given in locations in India to be mutually agreed upon, and the Government of India will arrange for the attendance of 25 to 30 qualified students at each training centre.

Industrial disputes in Madras State

The dispute between the workers and management of Mettupalayam-Coonoor Bus Service Ltd., Tirupur Branch, over the dismissal of 4 workers and their reinstatement has been referred for adjudication to the Industrial Tribunal, Coimbatore.

The dispute between the workers of Binny's Engineering Works, Madras and their former employers, Messrs. Binny and Co., Ltd., is referred for adjudication to the Industrial Tribunal, Madras.

The Industrial Tribunal, Madras, has given its award in the dispute between the workers and the management of the Indian Metal and Metallurgical Corporation over the closure of the factory from Feb. 17, 1951, and the discharge of 4 workers prior thereto, holding that the management had not acted *bona fide* in closing the factory. The management shall therefore pay all arrears of pay etc., from Feb. 17 till they are taken back to work up to a moiety of the personnel in different branches, selection being determined on strict seniority. It will reinstate the remaining personnel within 4 months of the publication of this award. Workers, who had not put in a continuous service of 2 months prior to Feb. 17, shall not be entitled to compensation or reinstatement. Of the 4 discharged workers, Fitter Raju shall be reinstated from Feb. 7 and he will be eligible for the necessary reliefs.

RURAL QUOTA IN INDUSTRIAL OUT-PUT

"It is necessary to rouse the country's population particularly, the rural folk, from their lethargy, and induce them to contribute their appropriate quota to the country's productive output in a "disciplined manner."

The population of the country should be distributed over the three main occupations, viz., agriculture, industry, and services in the proportion of about 50, 25 and 25, respectively. A 5-year plan for the development of industry and its smooth working is now most essential.

The decentralisation of industries, though advocated as a very desirable measure, had not been a success in practice."

SIR M. VISVESVARAYA.

A year of great stress and strain

Report on India's Financial Position in 1950-51

Upward trend in price level

The year 1950-51 was for India one of "great stress and strain" according to the Reserve Bank of India's report on currency and finance for the year ended March 1951. The report says fresh inflationary forces, generated after the outbreak of the Korea war in June, 1950, added to the disturbances caused by internal factors.

The upward trend in the general price level gathered momentum, and prices reached a peak in March, 1951. Industrial production was more or less maintained around the 1949 level, despite shortage of raw materials.

The total estimated revenue of the Union and State Governments (excluding Rajasthan for which figures were not available) for 1951-52 is Rs. 758 crores and expenditure Rs. 735 crores, leaving a surplus of Rs. 23 crores, according to the report.

Expenditure on security services (including defence) and social services account for Rs. 310 crores and Rs. 150 crores respectively. The overall estimated capital outlay is Rs. 313 crores.

Union Government's public debt

The Union Government's public debt rose by Rs. 154 crores to Rs. 2,089 crores and interest-bearing obligation by Rs. 48.57 crores to Rs. 2,562 crores. (special floating loans and expired loans are included in the public debt but not in interest-bearing obligations. Interest-bearing obligations included unfunded debt and deposits). The union Government's permanent debt stood at Rs. 1,438 crores.

The year was one of "great stress and strain". Fresh inflationary forces generated after the outbreak of the Korea war in June 1950, added to the disturbances caused by internal factors.

These included a series of natural calamities which led to a further deterioration in the food situation, the continued Indo-Pakistan trade deadlock during the greater part of the year, and acute shortage of essential goods.

The uptrend in the general price level noticed during the closing quarter of 1949-50 generated further momentum in 1950-51 particularly during the latter half of the year. Prices tended to be steady between September and December 1950, as a result of Governmental measures, but thereafter the uptrend was resumed and the price index number reached a peak of 438.6 in March 1951, as against 392.4 in March 1950.

Supply of money

The prevailing conditions were reflected in a sharp rise in the supply of money mainly because of the substantial payments surplus as evidenced by a rise of Rs. 38 crores in the Reserve Bank's foreign assets. There was also a heavy pressure on banks for seasonal funds to relieve which the Reserve Bank made open market purchase of Government Securities.

The supply of money with the public showed a rise of Rs. 99.2 crores in 1950-51 in contrast to a decline of Rs. 18.4 crores in 1949-50, and of Rs. 43.3 crores in 1948-49. Currency with the public rose by Rs. 83.7 crores and deposit money by Rs. 15.5 crores. Deposit money had shown a fall in the two previous years.

There were no additions to the supply of money during the year on account of Government drawings on their balances. The demand for funds during the busy season of the year was unusually heavy. Notes in the circulation during the period October 1950 to March 1951 registered an expansion of Rs. 152 crores.

Balance of payment position

Reviewing the balance of payments position and foreign trade, the report says that according to figures for 1950 (excluding transactions with Pakistan) the country had a surplus on current account of Rs. 51.5 crores as against a deficit of Rs. 169.3 crores in 1949, the bulk of the surplus having been achieved during the second half of the year.

This striking improvement, the report says, was due mainly to the devaluation of the Rupee, and to the aftermath of the Korea war.

The most significant development of the year was world-wide re-emergence of inflationary forces consequent on stock-piling, rearmament, and the sharply increased pace of economic activity that followed the outbreak of Korea hostilities.

The emergence of the growing balance of payments surpluses added to the problem of domestic inflation in certain countries by increasing incomes and money supply.

In 1950 the general price level rose by 16 per cent. in the U. S. 14 per cent in Canada, and 21 per cent in the U. K. 28 per cent in Japan. In India the rise was comparatively small being only 8 per cent.

The formation of the Colombo Plan during the year marked a significant step in the field of international financial assistance, and regional planning. The rearmament programmes of the Western world, however, would appear to raise serious doubts as to its successful and timely implementation.

THE NEED FOR A PLAN.

"Independent India is facing a multitude of problems. The hang-overs from the past have to be cleared; the transitional conditions of the present have to be steered through carefully, and the foundation for the future laid firmly. This gigantic task of national reconstruction can be undertaken only through planned effort. Dissipated efforts in diverse directions will only destroy the morale of the nation. Now, more than ever, is a plan needed to present things in their proper perspective, to determine priorities, give sound direction and effect co-ordination. If the nation is to progress, it is essential that there should be all-round development, planned advance and harmonious growth in the various spheres of national activity and no lop-sided expansion in any one branch at the expense of others. A plan should, therefore, have purpose, perspective and poise,—and the present plan possesses all these in ample measure.

The plan for this State is easily the largest in comparison with those of the other States, envisaging an expenditure of 137 crores of rupees. A noteworthy feature of the plan is that greater emphasis has been laid on the development of irrigation, power and agriculture, the total amount set apart under these three heads coming to more than 90 crores of rupees. This is understandable, as Madras suffers chronically from food deficit, and schemes to step up the production of foodgrains must necessarily take precedence over others. The amount set apart for irrigation and agriculture is however much below the original estimate prepared and submitted by the State to the Planning Commission after taking fully into account the needs of the State, the potentiality for development and the executive capacity for carrying out the same. The responsibility cast on this State for carrying out these schemes within the time-limit set out, is something stupendous, requiring not only executive efficiency and skill but also a high degree of idealism, the essential requisite for bringing to fruition reconstruction measures, of such magnitude."

SRI K. RAMUNNI MENON, I.C.S.,
Chief Secretary to Government of Madras.

IMPORT & EXPORT CONTROL.

India's Pepper Exports.

Rs. 19.99 crores earned in 1950-51.

Indian black pepper, which since the war has been among India's major Dollar earners, shows record earnings of over \$42,000,000 (Rs. 19.99 crores) for the year ended June, 1951, and promises to do better this year.

India supplied the U.S. 82 per cent. and Indonesia, the second largest producer, only 18 per cent. of the U.S. total imports of 33,000,000 lb. of black pepper during the period.

From a pre-war export average of 1,100,000 lb., India sold to the U.S. 26,900,000 lb. of black pepper for the year ended June, 1951, according to the U.S. Census Bureau. The average price valuation shot up from the pre-war rate of 5 cents a pound to 156 cents.

India produces over two-thirds of the world's supply of pepper, while the U.S., it is stated, now imports most of the world's pepper. In 1950-51 India exported two-thirds of her exportable surplus to the U.S. and one-third to the U.K., Russia, and the Continent.

Import of Liqueurs and Cordials.

The Government of India has decided to allow the import of liqueurs and cordials against all valid licences issued for the import of brandy, gin, and whisky.

There is no need for any amendment of the licences by the authorities.

Export Licences for Oils.

The Government of India has adopted the principle of "established shippers" in the matter of granting export licences for oils and oilseeds in order to stabilise India's export trade in these commodities.

The basic period for the determination of the past exports of ground nut, linseed, kardiseed, nigerseed, and other oils, and castorseed is 3 financial years from 1948-49.

Exporters are free to choose the best year of their exports out of these 3 years. As regards castor oil, the basic period is.

the financial year 1950-51, but the question of broad-basing the basic period as in the case of the other oils is under consideration.

About 30 per cent. of exports during the basic period are handled by foreign firms and about 70 per cent. by Indian firms.

Before the new policy was adopted, the Government was allowing export on the basis of first-come-first-served. As there was scramble, the Government had changed the policy in order to stabilise the export trade.

Export Duty on Jute Goods.

The Government of India informed a deputation of the Indian Jute Mills' Association of Calcutta that there were no grounds to make any change in the present rates of export duty on jute goods.

The deputation had met the Ministers for Finance and Commerce and Industry in connexion with a request for a reduction in the export duty on jute goods.

Import Licences for Non-Ferrous Metals.

The Government of India has decided to discontinue the system of issuing provisional licences for the import of certain non-ferrous metals, and issue confirmed licences on application.

Any provisional licences, already issued, and which are still valid, will be confirmed on application to the ports.

Import of Caustic Soda Licences Being Granted.

Licences for the Import of caustic soda and soda ash from all countries, except S. Africa, are now being granted freely.

The maximum selling prices for soda ash imported from the U.K., E. Africa, and Pakistan, and for caustic soda imported from the U.K. have been fixed.

As regards imports from other countries, the Government has decided to allow a margin of 10 per cent. over the landed cost towards profit, overhead, and other charges.

Importers who desire to sell the entire import directly to consumers will be permitted to do so provided the selling price does not exceed the landed cost by more than 10 per cent.

In the case of those importers who wish to sell the material to dealers, or partly to dealers and partly to consumers, the Government will notify the maximum selling prices under the Supply and Prices of Goods Act 1950.

Export of Linseed and Castor Oil.

Licences to Be Granted to Dealers.

The Government of India has decided to allow the export of linseed and castor oil by dealers engaged in the internal trade of vegetable oils in addition to export by established shippers and newcomers.

Licences will be granted only to dealers who can prove that their turnover in any fiscal year from 1948-49 onwards has been at least Rs. 5 lakhs. Applications must be made by October 6, and those for the export of linseed oil are invited only at Bombay and Calcutta.

No Restriction on Indo-Tibetan Trade.

There had been no change in the pattern or system of the Indo-Tibetan trade since the Sino-Tibetan agreement was signed early this year.

There is no restriction on the trade between India and Tibet. It is as difficult to impose restrictions on this trade as it is easy in the case of seaborne trade.

Gun Metal Utensils.

For purposes of export gunmetal utensils and brass utensils are treated on the same

basis, and hence the export of gun-metal utensils will be allowed in the same way as brass utensils. The necessary clarification has also been issued to the export trade control authorities.

Excise Duty on Bidi Tobacco.

Concessions to Dealers.

Concessions in certain circumstances in the matter of recoveries of Central excise duty on bidi tobacco cleared during the period March 1 to April 27, 1951, were announced by the Union Finance Ministry.

The concessions, the announcement says, will apply to cases of hardship where, in connexion with the recovery of the difference of 6 annas per pound on such bidi tobacco, consolidated demands are made from wholesale dealers who have themselves collected duty at 8 annas per pound at the time of its sale, and who are now unable to obtain the amount sought to be recovered from purchasers.

In such cases Collectors of Central Excise may, in their discretion, allow instalments up to 6 for payment of the demands.

The Government has also decided that in making the reclassification of such tobacco, the reassessment of 14 annas per pound will not be made where the tobacco (though "capable of use for bidis") could not ordinarily have been used for the manufacture of bidis, or has been known to have been used for purposes other than the manufacture of bidis before September 1, 1951.

In such cases there will not only be no recovery, but the dealers will receive a refund of 2 annas per pound.

NATIONALISATION BOGEY

"It is stated by some that the evils among private enterprises are not so rampant as to call for intervention by the State. It is not right to say that evils should be rampant, and a breaking point should be reached in particular industrial undertakings before the State could play its part.

The Government's effort to bring the private sector under planned regulation is not a step towards nationalisation."

"It should clearly be understood that regulation does not mean, or necessarily lead to nationalisation. The nationalisation bogey should have disappeared after the publication of the Planning Commission's report."

HON'BLE SRI HARIKRISHNA MAHATAB.

ABSTRACTS FROM EXPORT TRADE CONTROL NOTICES.

Licence for import of Diesel Engines

Licences for the import of Diesel Engines of 11 to 20 H. P. for the period January to June, 1951, are to be granted now. Licences will be issued to established importers.

General licences, and licences for Japan and for soft-currency area, will be granted separately on the basis of past imports from each of those areas. Quotas will be calculated on the basis of 33-1/3 per cent for approved importers, and 7½ per cent for other importers, as applied to half of an importer's best year's imports from each currency area.

Export of Cotton Wastes

It is notified for the information of the trade that it has been decided to allow export of not only "all types of soft cotton waste other than silver-waste, roving-waste, bondas and ends" but also of soft cotton waste including the prohibited varieties soiled by oil.

Export of Non-Ferrous Metal Manufactures.

The trade is informed that it has been decided to issue licences for the export of non-ferrous metal manufactures such as domestic utensils etc. during this year upto 25 per cent of the actual shipments of non-ferrous metal manufactures made by individual shippers during the year 1950.

Iron and steel manufactures other than steel helmets and fabricated steel structurals are covered by O.G.L. No. 4. Export of steel-helmets and fabricated steel structurals will not be permitted.

Export of Castor Oil

The trade is informed that it has been decided to release a further quota of castor oil equal to 20 per cent of the quantity shipped by each exporter during the basic year viz. April 1950-March 51 for the period of October 1951-December 1951. Shipments against this October to December 1951 quota will be allowed to be made during July to September 1951 quarter if so desired by the shippers. Eligible exporters should therefore apply for a quota stating the valid Income-tax Verification Certificate Registration Number.

Export of Linseed Oil

It has been decided to allow export of linseed oil during July to September 51 through

established shippers of linseed oil to the extent of 30 per cent of the export (excluding shipments on Government account) by each shipper during the basic year chosen by him out of three financial years, 1948-49, 1949-50 and 1950-51. Eligible established exporters should therefore apply for a quota stating the valid Income-tax Verification Certificate Registration Number.

Export of Solid Cab Rubber Tyres.

Attention is invited to the Notice No. 3216 dated 9-7-51 of the Government of India. The instructions allowing free export of solid rubber tyres contained therein apply only to solid cab rubber tyres which will be permitted only to Manufacturers.

Export of Fire-Bricks.

In partial modification of the Notice No. 3187 dated 19-6-51 of the Government of India, as amended by the Notice No. 3200, dated 30-6-51, the trade is informed that export of fire bricks other than high alumina fire bricks will also be allowed to Pakistan against the quota upto the ceiling limit in accordance with the procedure laid down in the above mentioned notice.

Export of Cotton Manufactures.

In continuation of the Notice No. 3044, dated 7-8-51, amended, the trade is informed that the following items of cotton manufactures will in future be licensed freely for export to all permissible destination:—

1. Azarbands (Cottonbelts used in Pyjamas etc.)
2. Embroidered silk and velvet purses containing cotton.
3. Cotton embroidered goods, which are valued mainly for workmanship involved will only be licensed freely.
4. Cotton razais, cotton braids, cotton wadding, cotton durries, cotton canvas holdalls, cotton raxine cloth and oil cloth. Exports of these items will be permitted to be made by those exporters who had made such exports during any of the three financial years viz. 1948-49, 1949-50, and 1950-51 and upto the full level of their exports in any of these years.
5. Embroidery thread, crochet thread and packing thread, export will be allowed against the quota of sewing thread on spools and reels.

Export of Jute Goods.

The first instalment of the release of destination quotas for export of jute goods for soft currency countries for the half year July to December 51, are as follows:—These quotas will be distributed to established shippers and newcomers in the usual way.

Aden, 500 tons; Angola and P. Guinea, 1000; Australia, 35000; Afghanistan, 100; Baustoland, 5; Belgium, 2000; Belgian Congo 1000; Kenya and Uganda and N. Tanganyika, 6378; S. Tanganyika, 840; Zanzibar and Pemba, 45; Br. N. Borneo, 50; Br. West Indies, 3000; Burma, 5452; Chile, 6000; Cyprus, 500; Ceylon, 500; Christmas Island 200; Denmark, 1000; Egypt, 2000; Eire, 1150; Ethiopia, 2000; Eritrea, 300; Fuji, 1000; Finland, 75; French possessions in India, 15; Falkland Islands and S. Georgia, 50; French Cameroons, 800; French Indo China, 550; French Pacific Isles,

65; French Equatorial Africa, 150; French N. Africa, 1500; French Somaliland, 150; French W. Africa (Dakar colonies), 3500; French West Indies, 400; Gambia, 100; Gold Coast, 4000; Greece, 500; W. Germany, 500; Hongkong, 400; Israel, 500; Iceland, 150; Iran, 150; Iraq, 3800; Italian Somaliland, 40; Indonesia, 10000; Lebanon, 500; Lybia, 100; Liberia, 200; Mozambique 2000; Madagascar, 500; Mauritius, 2000; Malaya, 500; Netherlands, 1000; New Zealand, 9000; Nigeria, 4000; Nyasaland, 150; N. Rhodesia 300; Norway, 1000; Peru, 5000; Paraguay, 5000; Pakistan, 25,000; P. G. Sheikdoms, 50; Portuguese Timor, 50; Reunion, 400; S. Rhodesia, 3000; S.W. Pacific Island 350; Saudi Arabia, 50; Sierra Leone, 1000; Sarawak, 100; Sudan, 4000; Swaziland, 100; Sweden, 500; Syria, 2000; Switzerland, 350; Surinam, 100; Singapore, 500; Turkey, 5000; Transjordan, 300; and U.K. 32,000 tons:—*"The Indian Export Journal"*

PRICE AND CONTROL MECHANISM.

"The technique of planning, as conceived by the Commission is to get the best results from the existing order. Though nationalisation of production and complete control over distribution might promise a new heaven, it would imply compulsion and expropriation which are inconsistent with democracy. There is also the question whether the required administrative man-power is available for a task which is not only large but most intricate. The Commission, therefore, considers that a private sector for enterprises must be allowed to exist provided it accepts a new role and a new code of discipline. The new role is to promote its own interests in the context of general good. This is not after all an original concept because in the last analysis social utility is the basis of most human activity.

What is new is a purposive correlation, secured by State policy, through the price and control mechanism. The price policy of the plan is a four-point one:—First disinflation, second control of exports and imports, third check on speculation and fourth increase of outturn. The Commission considers some disinflation necessary since prices which began running away with the war have not stopped doing so. Inflation has had some uses; it has watered down some of the larger incomes and levelled up some of the submerged ones, particularly those of industrial workers and agriculturists; it has particularly in the existing shortage of capital goods, benefited established enterprises.

At the same time the differences in price increases of different raw materials have introduced confusion in production. Inflation has discriminated against those with fixed incomes among whom are Governments with their inelastic revenues; it has caused great hardship to marginal classes particularly the large class of unemployed in the country. The consequences of inflation on Government are particularly serious because they cripple it exactly as new and larger duties devolve on it. Some halt is, therefore, necessary and the Commission wisely suggests that inflation may be curtailed by excluding speculative enterprises, raising output, increasing the volume of imports and enhancing the value of exports. This is held to justify the regime of controls."

HON'BLE SRI P. S. KUMARASWAMI RAJA,
Chief Minister, Government of Madras.

COTTON & TEXTILES.

Revision of Existing Prices.

View of Distribution Committee.

The Central Cotton Distribution Committee considers that no revision of the existing price structure of the various varieties of cotton is necessary, "as the cotton season is drawing to a close."

A resolution to this effect was passed at a meeting of the committee on July 18, 1951 Mr. R. Venkataswamy Nayudu, President presiding.

Sub-Committees were requested to be strict in passing 747 and inferior Cambodia and inferior Karungani. The Regional Committee might however, be requested to fix suitable prices in respect of very inferior qualities of Cambodia and Karungani.

It was resolved at the meeting to revise the procedure regarding the allocation of cotton to mills as follows: Allocations of cotton to mills should be made only after nominees have taken delivery of cotton allocated to them by Sub-Committees.

Nominees have to take delivery of cotton on payment within 5 days from the receipt of the advice of allotment from Sub-Committees and advise the Central Cotton Distribution Committee to that effect.

Mills to take Delivery within 3 Days.

On receipt of advices from nominees, the Central Cotton Distribution Committee will issue advices of allocation therefor. Mills have to take delivery within 3 days on receipt of advices of allocation from the Central Cotton Distribution Committee. The new procedure came into force from July 27.

In regard to handling charges nominees are entitled to charge mills with the actual expenditure incurred, such as godown rent, if any, cartage, and transit insurance, if incurred, in transporting cotton from the place, where it is stored at the time when the cotton is offered to Sub-Committees, to mills or their pressing factories. Dealers should

not refuse to provide godown accommodation until cotton is removed.

In case deliveries to mills are delayed because of transport difficulties, nominees are entitled to charge mills with interest on the value of cotton.

United States Cotton for India. 174,187 Bales

The U. S. Commerce Department's Office of International Trade announced the recent issue of export licences covering 284,529 bales of raw cotton for the period July 23 to August 6.

With INDIA, four other countries will receive the bulk of the cotton licensed for export, INDIA was licensed to get 174,187 bales; the U.K. 45,480 bales, Japan 24,316 bales, Switzerland 12,340 bales, and Belgium-Luxembourg 11,474 bales.

U.S. cotton farmers will harvest 17,266,000 bales of cotton, this year, the third largest crop in the nation's history. Mr. Charles Brannan, Secretary of Agriculture, stated that export quotas would be regulated by an "open-end" export licensing system under which friendly countries could buy all cotton they wanted.

No Need for Despair.

The present yarn shortage is due to the insufficient supply of cotton after the partition of India and also to the shortage of foreign cotton fit for medium counts.

"Things are improving and we have good prospects of getting more indigenous cotton at a much reduced price, and the situation will surely improve. Weavers need not despair, as the present Government is wedded to the policy of doing its utmost to help the handloom industry, which supplies one-fifth of our cloth requirements, and supports two crores of people. No Government can afford to allow such an important industry to deteriorate."

Cotton Allocation to S. Indian Mills.

Up to the week ended August 4, 1951, about 59,424 bales, composed of 22,095 bales of Cambodia and 37,329 bales of Karungani cotton have been allocated to mills in the B Zone since the distribution scheme came into force, says a bulletin of the Central Cotton Distribution Committee.

The total quantity received for fixing prices and grading during the period was 60,806 bales.

Production of Cotton.

Value of Improved Strain.

The prejudice that the seeds of K2 Karungani cotton collected from the second flush will not give a good yield is unfounded, and experiments at Agricultural stations show that there is no difference, either in quality or viability, between the Karungani seeds, produced in the first flush, and those produced in the second flush, and the yield of cotton had also not been affected.

K2 is an improved strain of cotton, but its value has not been fully appreciated by ryots. This year there had been good production of the K2 variety in the second flush because of the good summer rain. In view of the recognised superiority of the K2 seed over the other Karungani strains, it would be a pity if the seeds produced in the second flush are not utilised due to any unjustified prejudice.

The District Agricultural and Cotton Extension Officers have been asked to do intensive propaganda to see that the K2 seeds produced in the second flush also are utilised to step up cotton production, and to bring the entire area under the improved strain, K2 which is produced in Madura, Ramnad, and Tinnevely districts.

Yarn for Madras.

Against the allotment of 22,500 bales of yarn for July, the total receipts were 17,556½ bales. In June, the State received 18,210½ bales.

The allocation to the districts for distribution through trade channels was 6,970½

bales; through the Consumers' Association 92 bales; through the Madras Handloom Weavers' Provincial Co-operative Society 5,508½ bales, and to consumer quota holders 2016½ bales. The Department of Fisheries got 8 bales for distribution to fishermen.

The quantity distributed to handloom weavers who are members of co-operative societies, and to non-members, was 15,276½ bales, and to other consumers 2,280 bales.

Purchase of Cotton.

Nominee System Suspended.

The Central Cotton Distribution Committee, in a Press note announced the suspension of the operation of the nominee system in Madras "B" Zone, and asked nominees not to take delivery of cotton from cotton dealers on behalf of mills as from September, 1, 1951.

The Press note said the Madras High Court had declared on August 31 the nominee system of cotton control unconstitutional, and the Notification of the Textile Commissioner introducing the nominee system invalid. Until such time as the Union Government arrived at a final decision in regard to the practical application of the provisions of the Cotton Control Order, as interpreted by the Madras High Court, "we have perforce to suspend the operation of the nominee system."

"Sub-committees will restrict their function to certifying CO 4 cotton only. They will not pass any price-controlled variety of cotton."

"The nominee system has been acclaimed to have worked very successfully in this zone from every point of view. It is, therefore, essential for the textile industry, the gins, presses, and cotton trade to formulate a revised procedure for the marketing of cotton."

Cotton distribution.

The Central Cotton Distribution Committee states that for the week-ended August 25, 1951, 28,547 bales of Cambodia and 47,729 bales of Karungani were received by the various Sub-Committees for grading, fixing of prices, and allotment to nominees from the commencement of the Distribution Scheme to date. Total allocations

made to mills from the commencement of the Distribution Scheme to date were: Cambodia 28,500 bales, and Karungani 46,839 bales.

Cloth for Export.

Mills allowed to pack 25 per cent of output. Indian textile mills were allowed to pack 25 per cent of their production for export in August and September instead of 10 per cent.

The restriction on packing for export to 10 per cent of the output was introduced in April last with the twin purpose of staggering exports, and increasing the availability of cloth internally.

With the increase in production the record monthly production of 355 million yards was reached in June, the export of cloth was increased in August and September.

For the two months the Government had allowed mills to have 25 per cent of the total packing for export. The only condition is that coarse and medium cloth should not exceed 10 per cent of the total packing.

Marketing of Cotton.

Leading cotton traders will put forth a proposal to the Government to grant permission for the resumption of hedge trading in cotton. The trade has been urging this owing to the prevailing easy cotton crop position. According to them, an early resumption would help to stabilise prices.

The Textile Commissioner's Notification had sought to direct that the sale of raw cotton to mills should be through the nominees of the Government. The nominee system and the regulation of sales of cotton were designed primarily to see that the price of cotton did not exceed the ceiling fixed by the Government.

Legal Experts Consulted.

The officials of the Commerce and Industry Ministry of the Government of India had a two-hour discussion with the Government's legal experts on the effects of the Madras High Court judgment declaring the Textile Commissioner's Cotton Control Order as *ultra vires* of the Constitution and void. The Textile Commissioner, was also present.

A copy of the judgment was received by the Ministry.

Two alternative courses are reported to be under examination at present, viz., pre-

ference of an appeal to the Supreme Court for amendment of the notification to meet the exigencies of law, without militating against the objective of control of cotton prices.

6-year development plan for textile industry

Working Party's recommendation

A six-year development plan for the textile industry in India will be one of the recommendations of the Textile Working Party, which has just finished its investigations, preparatory to the drafting of its final report to the Government of India. It is expected the report will be submitted in two months' time.

In making the suggestion, the Party will take into consideration the overall *per capita* need of the growing population of the country, and the extent to which the industry has expanded in spinning and weaving.

The party held consultations with its own Technical Sub-Committee recording the Sub-Committee's impression of surveys conducted by it in different producing centres.

The basis for rationalisation of the industry according to the general trend of the discussions was the establishment of the normal workload of a worker under suitable conditions, and the manner in which the gains might be distributed to the management consequent on such rationalisation.

Cotton cultivation

The need for extending cotton cultivation, and the measures to be adopted towards that end, will also figure prominently in the report, as a plan for development of the industry must necessarily involve a plan for extending the acreage under cotton, especially in view of the growing demand from Indian mills for long-staple cotton.

During the recent session, the Party heard the views and suggestions of the All-India Exporters' Association and the East-India Cotton Association on better marketing of Indian textile products at home and abroad, and on cotton distribution and increasing the acreage.

The Textile Working Party was appointed on March 31, 1950, to recommend measures to increase textile production, reduce production costs, and improve the quality of products. It was also asked to go into the problem of rationalisation of the industry, and to suggest ways of stepping up the efficiency of labour management.

The Party, with Sir A. Ramaswami Mudaliar as Chairman had visited Bombay, Ahmedabad, Kanpur, Delhi Coimbatore and Madura, conducted first-hand sample surveys of textile mills with the help of technical experts.

Cotton Control Problems. Bombay talks.

Important problems relating to cotton control with particular reference to the distribution system, were discussed at an informal conference in Bombay between high officials of the Government of India and the representatives of the cotton trade the textile industry, and the Indian Central Cotton Committee.

The representation of the cotton trade on price fixation for staple above basic staple up to 4/32 inch figured prominently in the discussions. The request for the inclusion of the choice grade in the schedule was also discussed.

The general opinion was that the Government is favourably inclined to the request of the trade, and a decision is expected shortly.

At present, the Government has fixed prices up to 2/32 inch for staple above basic staple.

The East India Cotton Association represented to the Government that price fixation only up to 2/31 inch above basic staple would "distinctly discourage the marketing of better cotton and encourage mixing."

The Conference discussed in detail the implications of the Madras High Court judgment invalidating the "cotton purchase monopoly" in the nominee system. It also examined the question of appeal to the Supreme Court either in full or only

with regard to certain issues raised by the High Court.

As an alternative to an appeal to the Supreme Court, a suitable amendment to the Cotton Control Order eliminating the selective principle involved in the nominee system, but retaining the objective of control of cotton prices, was also considered.

Mr. S.A. Venkataraman, Secretary to the Commerce and Industry Ministry took part in the discussions.

Cut in prices of fine and superfine cloth from October. 1

The Government of India recently announced a reduction of 4.02 to 4.7 per cent in the prices of fine cloth, and 18.04 to 20 per cent in those of superfine cloth with effect from October 1.

The prices* of coarse and medium cloth, manufactured out of Indian cotton will continue to be the same as at present.

The present reduction has been due to the continued fall in the prices of foreign cotton.

The variations in the prices, which were given effect to during the last two quarters of the current year, have also been due almost exclusively to the fluctuations in the prices of foreign cotton imported into India. The prices of Indian cotton are controlled.

The steep rise in the prices of cotton necessitated an increase of 7 to 8 per cent in the prices of fine cloth and 33 to 35 per cent in the prices of superfine cloth in the April-June quarter.

For the July-September quarter, however, fine cloth prices were reduced by 1 to 1½ per cent and superfine cloth prices by 11.63 to 14 per cent, as the prices of foreign cotton fell.

***The prices of cloth are revised every quarter according to the recommendations of the Tariff Board.

The Industries Control Bill

"Some are inclined to criticize the Industries Control Bill. It is argued that whatever the value of the discipline the Bill may impose, its psychological effect will be even more disastrous than that of the Dividend Control Act. No industry will feel safe for which reason it will avoid the very expansion which may make it efficient. Bureaucratic interference will increase, as the non-official Board to be constituted will rarely be able to escape the influence officials exercise by knowing more. It is further argued that while the Bill might have been appropriate under expanding conditions, it will now add to the strike of capital. These reasons will doubtless be considered when the Bill comes before Parliament. This much, however has to be admitted that the Bill is necessary, if planning is to be successful.

The Development Councils are criticized on the ground that the vested interests represented in them will be hostile to new comers and that some form of monopoly will come into existence. Even if this happens, it must not be forgotten that if such councils really develop industries, investment will have its own way. The real test therefore is whether the councils will have the powers to make themselves felt in the industry and with the Government. This will depend on the representation in them."—SRI J. M. LOBO PRABHU, I.C.S.

COFFEE, TEA & SUGAR INDUSTRY.

In Jan Coffee Production Doubled in 10 years.

Increase in Acreage by 50 per cent.

Coffee production in India has almost doubled itself during the last 10 years while the area under the crop records an increase of over 50 per cent according to the figures available at the Coffee Marketing Office.

The quantity produced in 1949-50 was 5,25,000 cwts as against a turn-over of 2,75,000 cwts a decade ago. Thus the 1949-50 production could well be described as the record since the inception of the coffee industry in India over quarter of a century ago.

The area under coffee plantation has risen from 1,00,000 acres to 2,60,000 acres during the same period. The number of registered Estates also rose from 1,146 to 4,148.

Following the increase in production and acreages the price of coffee has recorded a 500 per cent increase from Rs. 50 to Rs. 246 a cwt. during the period under review. This increase in price levels is attributed to greater demand for coffee, taxes imposed on the industry and the general economic situation created by the last war.

Out of the 1949-50 production about 80,000 cwts valued at about Rs. 1,75,00,000 were exported to countries like Italy, Holland and Belgium, where demand for Indian coffee was great.

Other countries which had their quota were the U.S.A., the U.K. England, Switzerland, Egypt, and the Middle east countries.

According to the latest estimates the crop for 1950-51 would be about 70,000 cwts and the 1951-52 prospects are placed at 4,40,000 cwts. The heavy drop in production is ascribed to unfavourable weather conditions.

The coffee producing industry is in the hands of private companies while the marketing of coffee is done by the Indian Coffee Board, a statutory body constituted by the Government of India in 1943 for the efficient marketing of the commodity.

The Coffee-producing areas are all situated in the hills of South India. They are, Mysore, Coorg, Nilgiris, Wynad, Sherverooy and Palni-Bodi-Sirumalai.

One significant change that has come over the coffee producing industry is that over 60 per cent of the industry is now in Indian hands, whereas a decade ago, it was entirely developed by foreigners.

Coffee is a popular beverage of millions of peoples all over the country, and though there is great demand for Indian Coffee in foreign markets in view of its superior quality, internal consumption which is mounting yearly has put a ceiling on exports.

Coffee prices up Smaller output and greater demand

Coffee stocks are arriving in the 3 producing centres namely Coimbatore, Mangalore and Mysore.

Though the current season's offers are less than last year's the arrivals are expected to increase in the next 2 or 3 months. Normally, the months from October to February are the peak months for the industry.

The following were the receipts for the August pool with prices for 3 grades of coffee.

MANGALORE :—Plantation, 5 tons, Rs. 208-5 to 212-5; Cherry, 250 tons, Rs. 188-11 to 192-15 and Robusta 228 tons, Rs. 193-15 to 202-4.

COIMBATORE :—Plantation 116 tons, Rs. 216-10 to 222-1; Cherry, 14 tons, Rs. 195-2 to Rs. 198; Robusta, 22 tons, no offers.

MYSORE :—Plantation, 125 tons, Rs. 214-2 to 220-3; Cherry, 275 tons, Rs. 192-13 to 196-8; Robusta, nil.

The rates, when compared to the previous season's prices have recorded an increase of 10 to 12 per cent for Cherry and Plantation and from 22 to 25 per cent for Robusta.

This, it is stated, was due to 3 factors, namely, smaller production greater demand, and to some extent exports in excess of what the stocks could warrant.

Indian Coffee Crop Better 20% increase in 1951-52 expected

A 20 PER CENT increase in the Indian coffee crop is estimated for 1951-52 as compared with the last season.

The new crop of about 22,000 tons as against 18,156 tons in 1950-51 is expected to come in by December. This will consist of 16,000 tons of Arabica and 6,000 tons of Robusta as compared with 14,935 and 3,221 tons respectively in 1950-51.

It is stated that all the coffee growing areas in the country have recorded increased production this season as a result of favourable seasonal conditions.

The Board circles anticipate a good supply of coffee to consumers in 1952 in view of the better crop. The peak production of 25,500 tons was recorded in 1945-46.

The Marketing Committee of the Indian Coffee Board met under the chairmanship of Mr. M. R. Parthasarathy, Deputy Chief Marketing Officer, and decided to carry over 400 tons of Robusta to 1952, and dispose off the balance pool stock of 3,500 tons before the end of the year, as the new crop is expected to come in early.

Payment to growers

The committee also decided to pay to growers, 3 annas more per point in October and at least the same amount in November, bringing the total payment to Rs. 1-15 per point.

The Committee has decided to consider the question of paying further dividends at the next meeting in November.

***The various grades of coffee are awarded points according to quality when they are brought into a pool, and growers are paid for their coffee under the point system as dividends from the earnings of the pool. About 80 points are equal to 1 cwt.

Retail sale of Coffee at fair prices 12,160 tons allotted to Co-operatives during January-August

The Indian Coffee Board has sold in pool auctions and allotted to Co-operative Societies for the 8 months ended August, 1951 a total quantity of 12,160 tons of coffee. The release for August alone was 1,326 tons, and for July 1,283 tons. In addition, 1,350 tons were allocated to the Propaganda Department of the Board for 1951.

The allotments to the Co-operative Societies and the propaganda Department are made I-(8)

at fixed basic rates on condition that they retail them to the public at stipulated fair prices with a view to checking speculative operations in the open market.

***The coffee beans sold through co-operative societies are Re. 1 to Rs. 1-8 per viss cheaper than the prevailing open market prices. Per hundredweight, the price of "A" variety is Rs. 173-13, "B" Rs. 170-3, and Peaberry Rs. 188-5. The ruling open market price is about Rs. 240.

The prices of pool auctions have shown an increase in the sales for August compared to those in July.

The Board auctions coffee at three main producing centres, viz., Chickmagalur, Coorg and Mangalore, every month.

The auctioned rates (per cwt. ex-bags and ex-works) of plantation Arabica, Cherry flats, and Robusta Cherry flats, the three main types of coffee, were:

Aug.—Rs. 208-5 to Rs. 222-1, Rs. 188-11 to Rs. 198-13; and Rs. 193-15 to Rs. 202-4.

July:—Rs. 211-5 to Rs. 220-5; Rs. 190-9 to Rs. 198-9; and Rs. 190 to Rs. 200-2.

During the January to August, 1951 the internal prices of coffee, according to the Board, were 50 per cent lower than the prices of comparable types and grades of coffee in world markets. "A" grade coffee had recorded a range of Rs. 306-12 to Rs. 370-1 at Nairobi (Kenya) auctions, and Medellin Columbia Rs. 302-12 to Rs. 320-4 in New York.

Mr. M. P. Appu Menon, Secretary of the Indian Coffee Board stated that coffee consumption in India had doubled to 17,500 tons in 1949-50, as against only 8,000 tons a decade ago.

He added there has been an increase in production also. The average annual crop for the period 1945-46 to 1949-50 was 19.2 per cent more than the average for the preceding quinquennial period that is 19,862 tons and 16,582 tons respectively. The highest yield recorded hitherto was 2,500 tons in 1945-46. At present, 2,24,605 acres are under coffee as against 1,81,013 acres in 1941.

**According to figures made available last month by the Coffee Marketing Office Coimbatore, Coffee production in India has almost doubled itself during the last decade. The quantity produced in 1949-50 was 5,25,000 cwts as against a turnover of 2,75,000 cwts a decade ago. The area under the crop has risen from 1,00,000 acres to 2,26,000 acres

during the same period. Unfavourable weather has caused a downward revision of the estimates of the crop expected in the 1951-52 growing season.

Mr. Menon stated that 24,143 estates had been brought under the control of the Board. Among them company-owned estates were comparatively few. A vast majority of coffee estates was privately owned.

***The coffee producing areas are all situated in the hills of S. India. They are Mysore, Coorg, Nilgiris, Wynad, Shervero and Palni-Bodi Sirumalai.

Mr. Menon added it was not correct to say that the coffee industry in India was monopolised by foreigners before the war. Even before the war there had been a large number of leading Indian planters and a considerable number of estates had changed hands from Europeans during the war years.

***The Coffee Marketing Office Coimbatore stated last month that one significant change that has come over the coffee-producing industry is that over 60 per cent of the industry is now in Indian hands, whereas, a decade ago, it was entirely developed by foreigners.

TEA.

The Central Tea Board has set up a standard for canteens in industrial establishments both from the hygienic and service points of view.

Tea being one of the most valuable earners of foreign exchange, the Board is making strenuous efforts to increase its consumption abroad. It has also its own contribution to make to ease the internal food position. Efforts had to be continued to make tea popular in India.

Foreign competition

Last year though S. India produced only 98,020,000 lb of tea a million below the 1949 production. India's total production exceeded 6,00,000,000 lb., more than the total production of undivided India in 1946. Other countries, chiefly Indonesia and Ceylon, were developing their production substantially.

"It will be very difficult to hold our own unless we are able to keep up our propaganda on a high level so that we shall be able to increase, or at least maintain, our export figures."

The best quality tea was exported to the foreign countries, because India wanted to earn more foreign exchange than what inferior quality tea would bring in.

The internal consumption of tea had in the past decade, risen from 90 million lb, to about 160 million lb. "Prohibition in a way, has helped the increase in consumption of tea in S. India."

The increase might be above 25 per cent.

SUGAR.

Forward trading in sugar suspended

Forward trading in the Kanpur Sugar Market has been suspended for an indefinite period because a letter received by one of the sugar dealers from the Joint Secretary to the Union Ministry of Food and Agriculture stated "Forward delivery contracts in respect of free market sugar are not permissible."

Sugar production up

The production of sugar in India since Nov. 1, 1950 amounted to 1,094,777 tons, as against 969,278 tons in the previous season.

Despatches were 743,793 tons as against 701,736 tons last season. The production of sugar for 1950-51 prior to November, 1950, amounted to 3,155 tons.

The opening stock, production despatches, and the closing stock of sugar in respect of central sugar factories during the fortnight ended July 31, 1951, were 446,799 tons 176 tons 43,451 tons, and 403,524 tons.

The production of sugar for the 1951-52 season up-to-date amounts to 3,000 tons.

The total figures for the production and despatch of sugar since Nov. 1, 1950, are reported to be 1,094,831 tons and 782,581 tons respectively, as against 969,685 tons and 745,764 tons during the previous season.

Sugar industry

Sugar occupied "a very important place in the industrial development of the country"

"Probably after textiles, this is the largest industry giving employment to a large number of workers, and the capital involved in it is easily about Rs. 300 crores." The Government had managed to keep down the foreign imports of sugar, and retained Rs. 25 crores that were going out of the country.

Uttar Pradesh and Bihar, are the main sugarcane producing areas in the country. The average yield per acre in these two States, is below 15 tons per acre, while Bombay and Madras had been producing between 20 to 40 tons per acre.



Why Government Decided Additional levies on Commercial crops?

The present assessment rates on land were fixed with reference to the net income likely to be derived if food crops were grown. The cultivation of commercial and plantation crops was always profitable and income fairly high when compared with that of the cultivation of food crops. The index number of the wholesale prices for commercial products was 674 in Jan. 1951, with prices on Aug. 21, 1939 taken as the base, whereas the corresponding index number for food crops in Jan. 1951 was only 363.

In the years between 1939 and 1951 the market value of some commercial crops has gone up greatly, in some cases 10 times and in the case of pepper 40 times the pre-war level. During the settlements, and re-settlements, a higher rate was not levied on commercial crops, or other valuable crops, with the result that in the case of land growing commercial and plantation crops the assessment was only a small proportion of the net income from the land. The Land Revenue Reforms Committee, whose second report was recently published, considered that these crops could well afford to bear higher rates of assessment, without hardship. The Committee also considered that the principle of progression should be introduced in the land revenue system by levying a greater surcharge on larger holdings paying over Rs. 150 of assessment, pending the introduction of agricultural income tax. For the above reasons and also in view of the present financial position of the State which made it necessary to tap all available sources of revenue, the Government decided to bring forward this measure.

Surcharge proposal dropped

The Government had taken note of opinions and comments already expressed about this measure both in the legislature, the Press and outside. As a result of further deliberation, the Government proposed to make important changes in the Bill and to bring official amendments, at the Select Committee stage, to the Bill as published.

The most important is that it proposed to drop the surcharge on holdings paying above Rs. 150 per annum. The main reason for this deviation from the original Bill was the fact that this charge was supposed to be in addition to the standard assessment as finalised by the method recommended by the Subramaniam Committee.

The Subramaniam Committee thought there should be standardisation of assessments, with reference to price levels of 1860-61 and 1904-05 and that, with reference to the sliding scale of the price index the money rates for each year should be determined. The surcharges indicated by them for holdings, over Rs. 150 was in addition to their standardised rates levied in proportion to the level of prices.

As the standardisation of rate has not yet been examined, the Government felt that it would not be proper to introduce this additional surcharge on larger holdings till a decision on that principle is taken.

Some cash crops exempted

As regards commercial crops, the Government has decided to make certain important reductions in the incidence to the tax, and to remove certain crops altogether from the proposed new levy.

Thus the charge on betel, vines, coconut fruits of the citrus varieties sugarcane and turmeric which were all to be 6 annas in the rupee of land revenue payable are now proposed to be reduced. The charge on vineyards and on onions and mangoes would be removed, and the levy on plantains maintained at eight annas in the rupee.

The charge on cotton will be removed that on pepper and tobacco reduced from Rs. 10 per acre to Rs. 5 per acre. and the charge on cardamom, coffee and tea reduced from Rs. 3 per acre to Re. 1 per acre. The proposed charge on groundnut of Re. 1-8 per acre will be removed.

It is proposed to introduce a levy on lands growing arecanuts at eight annas in the rupee.

The main object of these alterations, is as far as possible to make the incidence of the charge less onerous on agriculturists and to remove from the list certain products on which the charge is not worth while because it is small.

The Government has also decided that a concession be made to benefit small holdings where a quarter of the area grown with commercial crops will be exempt to a maximum of three acres.

Clause 5 gave the Government power to notify other exemptions and will give the Government power to grant partial, or total exemption when crops failed and also in the case of crops which yield only in the second year, or only after a number of years.—*The Hon'ble Minister for Land Revenue.*

Steps taken to increase sugar output in Madras State

The quality of sugar required by the State is about 1,20,000 tons per annum.

In normal times when there was no control, the percentage of sugar requirements met from local production was about 50, but at present 65.5 per cent of the State's requirements is met from local production.

The average quantity imported in normal times is about 50 per cent of the demand. It is not possible to state the average quantity imported per annum under control as the control had been in force only for a short period. In 1950.

26,767.2 tons were allotted by the Union Government from North Indian factories. There were no imports from abroad during that year.

The following steps have been taken to increase the production of sugar in the State. The supply of sugarcane to factories is ensured by the reservation of cane areas. The creation of a free market for sugar produced by factories in excess of the quota fixed for each of them for supply to the Government for controlled distribution has encouraged factories to crush for longer periods; propaganda by special staff in the improved methods of cane cultivation; ten new sugar units have been permitted to be set up in the State, of which 2 have started production. Two more factories were expected to start working in the next season. Five Factories have been allowed to expand their capacities, of which 4 have already effected expansion. The Government has prepared a 3-year plan for the consideration of the Planning Commission for the intensive cultivation of cane and to increase sugar production.

There is no reasonable parity between the controlled and free prices, and as production increases, the free price is bound to drop, and in course of time things will adjust themselves.—*The Hon'ble Minister for Food & Fisheries.*

Development Schemes Not Included in 5-Year Plan.

Monetary Limitations the Cause.

All schemes which had been investigated and which were in progress were forwarded to the Commission with the State Government's recommendations. It is for the Commission to include such of the schemes as it found suitable, having regard to the financial aspect of the question.

The State Government found it difficult to find funds for the schemes already included which are expected to cost in the aggregate Rs. 137 crores.

Schemes Included in the Plan.

The State Government had provided the Planning Commission with a list of All development plans prepared by the State

Government. Only the following Hydro-electric and Irrigation projects that had been sanctioned and were in progress had been included in the Plan.

Irrigation: Lower Bhavani Project, Malampuzha Project, Mettur Canals Scheme, Rallapad II Stage, Romperu Drain, Cauvery Delta Drainage improvements, Manimuthar Project, Upper Pennar Project, Bhairavanitippa Project, Araniar Scheme, Walayar Scheme, Mangalam Reservoir, Tungabhadra Project.

Power:—Moyar Hydro-electric Scheme, Pykara III Stage Extensions, Papanasam II Stage Extensions, Machkund Scheme (civil works and power station, Madras share), Machkund Scheme Transmission Line, Madras Plant Extensions, Nellore Thermal Scheme, Madras-Mettur Inter-connexion, Transmission Lines and Distribution System, Tungabhadra Hydro-electric Scheme, and Acquisition of electrical undertakings.

The schemes had not been assigned any priority as between themselves as they had all been sanctioned. Development schemes

relating to Rayalaseema were also included in the plan. Details of schemes of each department are being finalised. The Commission called for the views of the State Government on the question of creating a non-lapsable, Irrigation Development Ways and Means Fund, and on the levy of betterment fees in areas benefited by irrigation.

The Commission had also asked this Government to prepare a supplementary plan for the development of irrigation and power costing about Rs. 40 crores.

The Pulichintala, Krishna-Pennar, and Ramapadasagar projects were all placed before the Commission.

Contribution by Beneficiaries.

Even if the people likely to be benefited are to contribute a portion of the expenses for the schemes, it will cover only 3 or 4 per cent. of the total, and the rest of the money will have to be found elsewhere.

The cost of the Tungabhadra irrigation Project will come to about Rs. 19 crores. —*The Hon'ble Minister for Finance.*

PRIVATE ENTERPRISE IN THE NATIONAL PLAN

“Our fight against poverty and unemployment and our attempt at the economic betterment of the people become our major objectives. This is the next vital stage of our journey after political independence. This can only be achieved by social and economic planning so that our resources can be used to the best advantage and increased as rapidly as possible. It cannot be achieved by leaving things to chance or to the vagaries of private enterprise or by the encouragement of the acquisitive instinct.

We have had unfortunately an abundance of anti-social practices in this country during the last war and after. This has to be combated on a planned basis and with controls where necessary. Nobody likes controls, but controls of certain commodities become essential when the acquisitive instincts of some individuals or groups come in the way of public good.

Private enterprise, therefore, has to be related to, and brought into the pattern of the National Plan. It may be encouraged but it should always function within that pattern. If it goes outside that pattern, then it upsets the plan itself.”

The Hon'ble Pundit Nehru

ECHOES FROM PARLIAMENT.

Best Method of Protection Tariff duties.

The Government had held the view that quantitative restrictions "as such are not a very healthy measure of protection." "But at international conferences India could secure concessions only by agreeing to impose quantitative restrictions. In cases of industries which had been started during war time and industries for which raw materials are available in the country, such restrictions by underdeveloped countries are legitimate.

"This, however, does not mean that the Government has adopted quantitative restrictions as a measure of protection. The Government holds that tariff duties are the best form of granting protection."

Except in exceptional cases quantitative restrictions will not be adopted.

Dy. Commerce Minister.

Foreign capital

According to the Reserve Bank, Foreign investments in India amounted to nearly Rs. 398 crores, and the extent of foreign control over Indian industry through the managing agency system totalled to nearly Rs. 44,71,00,000.

Once foreign capital was invested in the country it became, for purposes of the Industry Control Bill, an indigenous industry.

Dy. Commerce Minister.

Fall in prices of fine and superfine cloth

Some categories of fine and superfine cloth are now being sold below ex-mill prices in Bombay.

The cloth market had registered a considerable fall in prices in Bombay State. Medium and coarse varieties of cloth had not registered any fall in prices, as there had been a good demand for coarse and medium cloth.

The Minister for Commerce & Industry.

Fall in Jute Prices Abroad No cut in export duty now.

There had been an around fall in jute goods prices abroad. Since July there had been a fall, and on Aug. 31, 1951, the spot market prices in the U.S. came down to 25 cents (Rs. 1-3) per yard from the ceiling price of 32.30 cents (about Rs. 1-9) fixed by the U.S. Government in June last.

The fall in prices in foreign market was reflected in the fall in the Calcutta prices of jute goods generally.

The prices obtaining in foreign market still provide a margin of profit to the exporters of jute goods after payment of the export duty at the present rate.

The demand in the U.S. had fallen not on account of manufacture of substitutes for jute goods, but because their stock-piling had now considerably decreased.

The prevailing price of jute goods and the decrease in demand in the U.S. were taken into account and the Government of India came to the conclusion that the export duty need not be reduced now.

The Minister for Commerce & Industry.

Production of Cloth by Mills.

Textile mills will no longer produce varieties of cloth which are not wanted by the State Governments.

From July onwards, the State Governments have to submit their requirements indicating the varieties of cloth they need, to the Textile Commissioner, who would direct the production of cloth by mills accordingly.

The State nominees are at liberty not to lift their quotas if the varieties are not according to the State Governments' indent. Supplies are now made to suit the needs of the respective State Governments. There is, therefore, no question of mills producing un-wanted varieties of cloth.

The Minister for Commerce and Industry

Price of fine cloth to be Reduced

There has been no increases in the prices of coarse and medium cloth produced from indigenous cotton. From July 1 the prices of superfine and fine varieties have been reduced on account of prices of foreign cotton having gone down, and they will be reduced still further.

The price of cloth is entirely dependent on the price of cotton. The price of indigenous cotton for the next crop will be fixed in November.

15 mills were closed down owing to cotton shortage during the current year, and three partially closed.

So far as Indian cotton is concerned, allocations for 1950-51 crop are over. Allocations for the purchase of new cotton crop of 1951-52 will be made during November.

As regards foreign cotton those mills which had placed forward orders against import licences will be receiving supplies as and when shipments arrive.

The imports will be adequate.

***During the current year, increase in price of cloth was announced on Apr. 5. The increase then of fine cloth was 7 to 8 per cent and superfine 33 to 35 per cent. The increase in coarse and medium cloth was 3 to 4 per cent. On June 22, when the previous revision of prices was made, the Government of India reduced the prevailing prices of fine and superfine cloth by 1 to 1½ per cent and 11.63 to 14 per cent respectively for third quarter commencing on July 1. This was due to a fall in the prices of U. S. and Egyptian cotton.

No increase in output

Eighty-four cotton textile mills have not shown any improvement in the production of cloth and yarn during the quarter ending July 31 as compared to the production in the previous quarter.

No action could be taken against these mills till the Industrial Development and Control Bill is passed. Statutory orders in force do not require mills to produce a minimum or any specified quantity.

The Minister for Commerce & Industry

Liquidation of failed Banks

The Government of India is actively considering the question of constituting a committee to devise the necessary legisla-

tive and procedural changes on an all India basis for the purpose of enabling the Reserve Bank to undertake the liquidation of failed banks.

84 Banks were so far reported to have gone into voluntary and compulsory liquidation since the passing of the Banking Companies Act 1949. The deposits in the banks which had gone into voluntary liquidation, amounted to Rs. 42,16,000 and in the case of the banks that had been ordered to go into liquidation the deposits amounted to Rs. 14,90,00,000.

West Bengal topped the list with 34 banks having gone into liquidation during the period, with Madras coming next with 26.

Only in the case of one Bank, namely the Nath Bank Limited Calcutta, the Reserve Bank applied for being appointed as Official Liquidator and was so appointed by the Calcutta High Court. The Reserve Bank resigned from the office of the Official Liquidator in August 1950 as some creditors objected to its being the liquidator when it was itself the largest creditor and there was the resultant conflict of interests.

It was felt that delay could not be obviated in the realisation of assets of the banks in liquidation even if the Reserve Bank undertook liquidation unless far-reaching changes were made in law and also in the rules governing procedure in various High Courts relating to liquidation proceedings. Nothing spectacular could therefore, be achieved by merely entrusting the work of liquidation of these banks by the Reserve Bank. The Reserve Bank has, however, suggested the appointment of a committee to devise the necessary legislative and procedural changes on an all-India basis in this respect.

The Minister for Finance

Petrol rationing not likely

Supplies from U.S. may cost more

Unless there is some unforeseen change for the worse in the supply position, there is no likelihood of petrol or kerosene rationing being reintroduced.

All Oil supplies from the third week of June had been from sources other than Abadan.

"So far, there has been no increase in the prices, and the selling prices of aviation spirit, motor spirit, and kerosene are the same today as they were when the supplies were stopped from Persia.

"However, since freight charges from the U.S. are higher than from the Persian Gulf, a very small increase may occur in the case of some products which have to come from the U.S."

The bulk of the supplies to India, continues to be from sources in the Persian Gulf outside Persia.—*The Minister for Works Production & Supply*

Industrial Production and Export Trade

Position Improving

Following partition, India has ceased to be an exporter of raw materials, and our export trade is dependent on industrial production. The development of our export trade must, therefore, receive special attention in our plans for industrial progress.

Regarding cloth export policy, on the basis of last year's production and the export figures, the total quantity of cloth left, both handloom and mill made, is only nine yards *per capita*. "Judged by any standards this is too low a figure."

The Government has, therefore, fixed an overall export quota, of about 840 million yards from the current year's production, which, we hope, "will be about 4,000 million yards. After taking into account handloom cloth, we should have about 11.4 yards *per capita* in the country for internal consumption."

Against frequent changes

Government never relished the idea of going on making changes in these arrangements as "we want to see the orderly development of industry and the trade."

As for oil exports, the points which governed the cotton textile exports applied in general to a wide range of other exports. In order to obviate the recurrence of a situation akin to the one which occurred in the trade, the Government felt it necessary to revise the procedure for licensing so that the danger of sales exceeding the available supplies would no longer exist.

Under the system of quota licensing, based on past exports for oil and oilseeds, there is not the same rush for selling and buying as there was under the first-come-first-served principle in consideration of sporadic demand.

The exporter had freedom to buy and sell at an opportune moment, and also the assurance that he could do a certain volume of business without going through a period of uncertainty between finalising a contract, and the grant of a licence.

The recent export policies of imposing new restrictions on exports, in bringing under export control what had hitherto been free might seem to a superficial observer as showing disregard for the importance of exports to their economic development. "A closer examination, however, of the restriction which we have had to introduce will show that they are, in fact, not calculated to hamper our export trade, but, on the contrary, to strengthen it."

Govt.'s anxiety

The export trade had considerably improved. The average monthly exports of Indian merchandise since August last have been Rs 58.8 crores as against the average of Rs. 44.1 crores in the corresponding months of 1949-50 and Rs 36 crores in the same period in 1948-49.

"Our balance of payments position over the last 12 months has been very satisfactory and we have therefore been able to pursue a somewhat more liberal policy in regard to imports."

The anxiety of the Government is not so much about how they are to pay for their imports, but "how we are to obtain the supplies which we need."

Since India started taking raw jute from Pakistan, "we had to decontrol our own prices, as the Pakistan prices were outside our control, and it was not possible to continue a sectional control"

This measure, has had some satisfactory effects. It had drawn Indian jute to the mills which had enabled us to maintain production throughout this difficult period. The demand from foreign markets for jute products continues to be good, and our export has been progressing satisfactorily. In June alone, shipping bills were passed for export of 66,000 tons, which is a record figure for any one month.

The Council, during its present session, is expected to discuss the change to the established shippers system, instead of the present "first-come first served principle in the export licensing procedure, and is

expected to specify the qualifications for a newcomer and the regulation of exports.

The Minister for Commerce & Industry

More dhotis, and saris

Our people have suffered considerably from the shortage in the supply of cloth and yarn. Last year production was relatively low, and there was also the need to maintain exports at a level high enough to balance our imports. This year, our cotton harvest has been better, and we are also doing our utmost to secure cotton from abroad. Certain restrictions have been placed on textile mills in regard to export, which has been strictly limited.

Stress has been laid on the manufacture of dhotis and saris which have been specially in short supply. There has been already a marked improvement in this matter of cloth and yarn, and it is hoped that this improvement will continue during the next few months.

It is important for us to help in every way the handloom industry in India, which is of considerable dimensions and gives employment to a very large number of people. This depends chiefly on the supply of yarn, and efforts are being made to increase this supply progressively.

The rise in prices in recent months, as judged from the wholesale price index, has been the cause.—*The Union President.*

2,500 Tons Newsprint

Indian papers to get it on pro rata basis

The Government of India have decided to distribute 2,500 tons of newsprint on a pro rata basis among the Indian newspapers irrespective of the stocks held by them.

The quota was granted to India as an emergency allocation by the International Materials Conference.

Smaller newspapers having a consumption of less than 5 tons have the full quota. Originally, the Government thought of excluding newspapers having more than 6 months' stocks from the list for the purpose of distribution of this emergency newsprint quota but on the advice of the Eastern Newspaper Society, it has been

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decided that those newspapers may also have a pro rata share.

A protest had been received by the Government against the decision.

The Deputy Commerce & Industry Minister.

Welfare of plantation labour

The Labour Bill provides for the welfare of plantation labour, and regulates the conditions of work in plantation.

Although the Plantation Industry is one of the biggest industries in India employing more than 10,00,000 workers, there is at present no comprehensive legislation regulating the conditions of plantation labour.

The various existing Acts relating to labour either did not confer any substantial benefit on plantation labour or did it only to a limited extent. The Labour Investigation Committee had recommended a Plantation Labour Code and a conference of representatives of State Governments, employers and workers had agreed in January, 1947, that there should be separate legislation for this class of workers.

The Bill applied in the first instance to tea, coffee, rubber, and cinchona plantations. The State Governments are empowered to apply the provisions of the Bill to any other class of plantation subject to the previous approval of the Union Government.

Among the salient features of the Bill are provisions for the appointment of chief inspectors and inspectors for the purpose of implementing the measure and the appointment of surgeons for certifying and examining workers. There is also a provision for the supply of drinking water. The State Governments might make rules requiring employers to provide educational facilities for workers' children and housing accommodation.

The labour Minister, had succeeded, even without any Act, in getting some amenities to plantation labour by means of negotiations with employers who responded to persuasions and negotiations, and agreed readily to increase the wages. The housing conditions in some tea estates are

good. Conditions in the plantations owned by Indians are worse.

As regards special consideration for small employers, primarily there should be no exploitation of labour in the country. All possible protection should be given to some industries, but free and unrestricted exploitation should not be allowed. It is not possible to run an industry by providing a minimum standard of wages it would be better if it goes out of existence.

Workers have bad habits, like drinking. But it has to be analysed why workers took to drinking. Was it not because

they wanted to drown their misery? They had no other source of recreation. The real difficulty was that 'our appreciation of labour problems was simply an intellectual appreciation.' Some sort of social service among workers is going to be introduced.

This Bill may not be very progressive But it will be a step forward in providing amenities to plantation labour. All possible safeguarding will be taken to see that "unscrupulous" employers will fulfil the requirements of this measure.

The Hon'ble Minister for Labour.

THE FIVE YEAR PLAN.

"The Five-Year Plan now before us has been variously described, by some as ambitious and grandiose; and by others as uninspiring and patchy—good in parts like the curate's proverbial egg—all according to the predilections of the critics. Surely a Plan which aims at recovering the standard of life prevalent at the beginning of the War, can by no means be considered anything vaulting. Whatever it be, it is certain that it has not erred on the side of generosity in the matter of provision for social services; and no one appears to be more conscious of it than the Planners themselves. Hence it is their emphasis on the need for harnessing private effort on organized basis on the lines of a Bharat Seva Sangh to which all associations are to be affiliated and through which co-ordination and regulation are to be effected; as also the need for adequate and systematic training of social workers, and for the establishment of a central social research organization of social sciences. But private charity is largely a resultant of the prevailing political, economic and moral climate. Many imponderables complicate any calculation, not the least of which are the level of taxation obtaining, the speed of income redistribution, the social incentives the speed of income operating and above all, the attitude of man to man, or perhaps of man to God, or a realization that both these are one and the same."—Dr. B. NATARAJAN, *Economic Adviser to the Government of Madras.*

State Aid to Industries Statistics.

APPENDIX I.

CLASSIFICATION OF THE INDUSTRIES FOR WHICH AID WAS GRANTED FROM 1923-24 TO END OF SEPTEMBER 1949.

Serial No.	Type of Industry.	Number.	Amount of aid sanctioned. Rs.	Remarks.
1	Silk	5	1,22,600	Rs. 17,800 shares.
2	Gold thread	1	6,500	
3	Paper	4	9,79,216	Includes Andhra Paper Mills to which certain concessions regarding new materials, etc., were given.
4	Envelope manufacture	1	6,300	
5	Saw mill	1	9,600	
6	Cotton spinning and weaving	2	7,55,000	
7	Sugar and jaggery	2	68,600	
8	Match factory	4	31,500	Includes the East India Matches Co., Rajahmundry to which certain concessions of re-extraction of soft wood from forest were given.
9	Dye works	2	1,60,000	
10	Tile works	3	1,09,250	
11	Oil	7	29,05,000	
12	Toy manufacture	2	850	
13	Enamel works	2	26,000	
14	Coir factory	1	500	
15	Radio and electrical goods	3	2,01,500	Rs. 2,00,000 shares.
16	Fountain pen	5	14,000	Rs. 2,500 overdraft.
17	Button manufacture	5	1,008	Rs. 108 non-repayable subsidy.
18	Chemicals	3	2,33,000	Rs. 25,000 overdraft and Rs. 2,000 subsidy.
19	Bee-keeping	2	500	Rs. 100 non-repayable subsidy.
20	Dairy	1	16,800	
21	Metal industry	6	2,08,500	
22	Basket making	1	192	Non-repayable subsidy.
23	Shoe making	1	500	
24	Medical goods	3	77,600	Rs. 7,500 shares.
25	Motor tyres	1	12,000	
26	Ink	1	500	
27	Iron and steel	1	35,000	
28	Scientific instruments	2	14,800	
29	Manufacture of bread	1	2,000	
30	Stove manufacture	1	85,000	
31	Cycle manufacture	1	8,000	
32	Engine manufacture	1	1,000	
33	Bone mill	1	3,000	
34	Brassware	2	3,620	
35	Soap	1	85,000	
36	Agricultural implements	3	1,40,000	
37	Porcelain	1	60,000	
38	Manure	1	25,000	
39	Shuttles, looms and charkas	1	2,000	Subsidy.
40	Whitting from sea shells	1	33,000	
41	Brass-holders for electric bulbs	1	2,000	
Total		87	63,46,636	

APPENDIX II.

LIST OF SUCCESSFUL INDUSTRIES.

Name of the applicant.	Type of Industry.	Amount of aid.	Date of sanction.	Date of repayment	Remarks.
1 Messrs. Muppanna Somaraju and Veeraraju, Silk merchants Peddapuram, East Godavari District.	Silk	50,000	23rd December 1924	...	Repaid in full.
2 K. Subbarayudu, Toy maker, Kondapalle, Kistna District.	Toy manufacture.	500	22nd July 1932	1936-37	Do.
3 Messrs. Boddu Peddanna & Sons, Vizianagaram.	Oil Mills	40,000	28th September 1931	Pending	Instalment being paid.
4 The Metal Industries, Ltd., Shoranur.	Metal	8,000	30th March 1933	1941-42	Amount fully repaid.
5 Sri Ramakrishna Sugar Mill, Kirlampudi, East Godavari District.	Sugar Mill	50,000	31st March 1936	1944-45	Do.
6 Messrs. K. V. Ratnam and Bros., Rajahmundry.	Fountain pen	1,500	13th August 1937	August 1947	Do.
7 K. Subbarayudu, Toy maker, Kondapalli.	Toy manufacture	350	26th November 1937	1942-43	Do.
8 The Button manufacture Co-operative Production and Sales Society, Thiruparagadu, N.A. District.	Button manufacture.	108	31st March 1938	...	Recovery of subsidy waived.
9 Sri Raguramaraju, Courtallam, Tinnevely District.	Bee-keeping	400	31st March 1938	1942-43	Amount fully repaid.
10 Sri G. Changanlal, The Envelope Factory, Madras.	Envelope manufacture.	6,500	30th November 1939	Pending	Instalments being paid.
11 The Andhra Scientific Co., Ltd., Masulipatam.	Scientific Instrument	14,000	31st March 1951	March 1946	Amount fully repaid.
12 Sri Mithodai Rama Rao, Proprietor, The Hygienic Bread Factory, Nellore.	Bread Manufacture.	2,000	5th December 1939	...	Do.
13 Sri S. M. Ramalingam Pillai, Melacheval, Tinnevely District.	Dairy Farming	16,800	10th October 1939	1942-43	Do.
14 The Madras Chemical Industries, Ltd., Madras.	Chemical Industry	25,000	9th November 1939	...	Overdraft with Imperial Bank of India for a period of one year expired on 21st December 1940. Amount fully repaid.
15 Sir A. Dharmaraju, Proprietor, Associated Home Industries.	Manufacture of sign boards, and Electrical fittings.	1,000	24th May 1939	...	Amount fully repaid.
16 Sri M. Ratnam, Ratnam Industries Vepery, Madras.	Enamel Works	1,000	26th May 1939	Pending	Instalments being repaid.
17 The Surgical Cotton Mills, Ltd., Rajapalayam.	Manufacture of medical goods.	7,500	March 1941	...	Government have taken shares to the value of Rs. 7,500.
18 The Quilandy Artisan Co-operative Society Malabar.	Brassware Industry.	620	March 1940	...	Non-repayable subsidy.

2,25,278

APPENDIX II.—(contd.)

LIST OF SUCCESSFUL INDUSTRIES.—(contd.)

Name of the applicant.	Type of Industry.	Amount of aid.	Date of sanction.	Date of repayment	Remarks.
19 The Madras Enamel Works Ltd., Madras.	Enamel Works	25,000	28th June 1940	1941-42	Amount fully repaid.
20 The Kohinoor Industries, Kalyampur, South Kanara.	Ink	500	24th October 1940	December 1944.	Do.
21 The Industrial Engineers and Merchants, Bezwada.	Steel Rolling Industry.	35,000	5th June 1940	1947.	Do.
22 P.C. Munusamy Naicker, Mutham village, Tiruttani, Chittoor District.	Brass Metal Industry.	500	1st November 1941.	April 1944.	Do.
23 Santapet Basket Makers, Co-operative Society, Chittoor.	Basket Making	192	19th March 1940.	...	Non-repayable subsidy.
24 The Metal Industries, Ltd., Shoranur.	Metal Industry	25,000	31st March 1942.	May 1944.	Amount fully repaid.
25 Puttur Taluk Co-operative Bee-keeping, Honey Production and Sales Society, Chekkodi, South Kanara.	Bee-keeping	100	31st March 1941.	...	Non-repayable subsidy.
26 The Gandhi National Tanning and Shoe-making Co-operative Purchase and Sales Society, Ellore.	Tanning & Shoe-making.	600	31st March 1942	...	...
27 C. M. Doraikannu Pillai, Salem.	Button Manufacture.	300	Do.	Pending.	Instalments being repaid.
28 T. G. Natesan Pillai, Salem.	Do.	200	Do.	Do.	Do.
29 Sri M. Arunachalam Pillai, Salem.	Do.	200	Do.	Do.	Do.
30 Sri Ramaswami Chettiar, Pannappatti, Salem.	Do.	200	12th March 1943.	Do.	Do.
31 The Andhra Pharmaceutical Works, Vijayawada.	Medicines	20,000	31st March 1943.	March 1947	Amount fully repaid.
32 K. V. Ratnam Bros; Rajahmundry.	Fountain pen	500	5th July 1943	...	Overdraft for Rs. 500 with Imperial Bank of India.
Total		3,23,570			

NATIONAL PLANNING.

"Industry and Labour have an importance not to be measured directly by the population involved, but to be understood in the influence they have on employment of all kinds. According to economic theory, capital in industry represents an accumulation of past labour and skill, which magnify the result of human labour employed. To the extent therefore industry makes available time and labour saving devices, it enhances the quality and quantity of production in other fields. In Agriculture, industrial equipment like tractor, and industrial products like fertilizers are making an increasing contribution. As far as industrial labour is concerned, its organization, efficiency and standards of remuneration, set an example for labour in all other fields. It is the spear-head of the movement to improve the conditions of the economically depressed classes. On the way organized labour secures its right and discharges its responsibilities will depend the future of the working classes. Naturally the subjects of industry and labour have a tremendous importance, which the Planning Commission has duly recognized."

HON'BLE SRI H. SITARAMA REDDI,
Minister for Land Revenue & Labour.

APPENDIX III.

LIST OF UNSUCCESSFUL INDUSTRIES.

Name of applicant.	Type of Industry.	Amount of aid.	Date on which aid was granted.	Date of repayment of last instalment	Remarks.
		Rs.			
1 Rice & Saw Mills, Ltd., Coondapur, South Kanara.	Saw Mill	9,600	31st March 1925..	29th November 1929.	Loss of Rs. 2,849 in 1926-27 Mill brought to sale by Collector. Loan recovered in full.
2 Sri Muthiala Seenappa Ramana Match Factory, Bellary.	Match	20,600	29th September 1927.	1934-35 ..	Amount fully repaid.
3 The Zamindar of Belgaum, Parvatipur.	Match Factory	11,000	18th July 1928 ..	Do.	Do.
4 The Salem Dye Works Syndicate, Ltd., Salem.	Dye works	10,000	26th November 1928.	1937-38 ..	Do.
5 Sri B. Abraham Tile Works, Tanjore.	Tile	4,250	22nd December 1930.	1934-35 ..	Do.
6 Sri A. C. Krishna-swami Pillai, Muthupet, Tanjore District.	Coir factory	500	8th April 1935 ..	1938-39 ..	Do.
7 Sri Hanumantha Rao, Nellore.	Electrical goods.	600	22nd March 1937.	1937-38 ..	Do.
8 Sri S. T. David Bone Mill, Ennore.	Bone Mill	3,000	1st April 1939 ..	July 1941.	Do.
9 Sri G. Venkataratnam, The Scientific Industrial Works, Coimbatore.	Workshop Equipment.	800	1st December 1938.	1942-43 ..	Do.
Total ..		59,650			

APPENDIX IV.

LIST OF STATIC INDUSTRIES.

Name of the applicant.	Type of Industry.	Amount of aid.	Date of payment.	Date of repayment	Remarks.
		Rs.			
1 The Kallakuruchi Co-operative Agricultural Society, Ltd., Kallakurichi.	Sugarcane crushing.	18,600	8th December 1925	1936-37 ..	Repaid in full.
2 The East India Match Co., Rajahmundry.	Match	[Concessions.]	1930 ..	...	Certain concessions for extraction of soft wood from forests.
3 Kollegal Silk filatures, Ltd., Kollegal.	Silk	17,850	31st October 1938.	..	Government have taken shares to the value of Rs. 17,850.
4 The Andhra Paper Mills, Rajahmundry.	Paper	[Concessions.]	10th January 1937.	...	Government have taken over the management.
5 The Radio and Electricals Ltd., Madras.	Radio and Electrical goods.	2,00,000	14th January 1946.	...	Government have taken shares to the value of Rs. 2,00,000.
Total ..		2,36,450			

APPENDIX V.

LIST OF INDUSTRIES THAT HAVE FAILED.

Name of the applicant.	Type of Industry.	Amount of aid.	Date of sanction.	Date of payment.	Remarks.
1 The Carnatic Paper Mills, Ltd., Madras.	Paper	6,49,216	14th March 1925.	1928-29 ..	Sum of Rs. 2,49,216 written off.
2 Sri D. Rangaswami Naidu, The Andal Mills, Gudiyattam, North Arcot District.	Cotton	5,000	1st May 1925 ..	1933-34 ..	Declared insolvent. Building and machine brought to sale. Rs. 1,715 written off in 1936-37.
3 Sri L. Nanjundasamy, Proprietor, Silk reeling concern, Bastipuram.	Silk	750	12th December 1930	1933-34 ..	Concern brought to sale by Collector as money was not utilised for the purpose Rs. 750 written off.
4 Sri C.M. Ramaswamy, Iyer, Ram Ram Safety Match Works, Tholampalayam, Coimbatore.	Match	500	14th May 1931 ..	1933-34 ..	As money was not utilised for the purpose concern brought to sale by the Collector. Balance of Rs. 209 written off.
5 Sri S.L. Venkatachala-pathy, Kumbakonam.	Gold thread manufacture.	6,500	20th March 1939.	1945-46 ..	Business suspended due to loss. Rs. 2,490. written off.
Total		6,61,966			

STANDARD OF LIVING.

"No doubt, our primary aim is to level up the standard of living of the lowest class; but if that could be achieved only by levelling down the incomes of the higher groups, then we have to resort to that process whether we liked it or not. After all, the authors of the plan are all mature administrators, who would rather build on firm ground than raise false hopes, but even they have thought that there is further taxable capacity on the land.

Ours is the most deficit of all States in food and all that deficit is in rice. Annually we part with crores of money to import rice from outside at dictated prices. We have still immense water resources in this State with fertile plains lying on either side to grow all the rice we needed and we have prepared a 15-year plan for that purpose. A good few of the schemes included in this latter plan, including the Godavari and the Krishna River Valley Schemes, have been fully investigated by us at enormous cost. We have also perfected the necessary technical organization for implementing the schemes.

The Planning Commission is now engaged in selecting schemes for inclusion in the second part of their plan costing Rs. 300 crores. Let us hope that in the apportionment of priorities, the special needs and facilities obtaining in this State will receive the proper attention of the Commission and we will soon be in a position to achieve some at least of our long-cherished dreams."

HON'BLE SRI B. GOPALA REDDI,
Minister for Finance.

**List of Industrial Concerns to whom State Aid was Sanctioned
during the period from 1-4-51 to 15-9-1951.**

Serial No.	Name of Concern.	Loan Rs.	Subsidy Rs.	Overdraft Rs.	Remarks.
1	Indian Metal Works, Kurnool	18,000	...	...	...
2	South India Carbonic Gas Industries Limited, Madras	1,00,000	...	...	...
3	Vannudiars (Manufacturers) Ltd., Madras	1,85,000	...	...	...
4	A.S.T.E. Rodrigues and Co. Katpadi.	5,50,000	...	...	...
		8,53,000			

**List of Industrial concerns to whom aid was actually disbursed
during the period from 1-4-51 to 15-9-1951.**

Serial No.	Name of the Concern.	Loan Rs.	Subsidy Rs.	Overdraft Rs.	Remarks.
1	Tuticorin Spinning Mills Ltd., Tuticorin	5,00,000	...	...	...
2	Kasturi Engineers Ltd., Coimbatore	50,000	...	...	...
3	Vannudiars (Manufacturers) Ltd., Madras	1,85,000	...	...	...
4	Sri. P. A. C. Ramaswamy Raja Rajapalyam	1,39,000	...	...	...
		8,65,000	...	...	...

UPTO 20-9-1951 about 300 Certificates were issued to industrial concerns to enable them to obtain licences for import of raw materials, machinery, etc., needed by them.

27 applications from foundries in this State for allotment of pig iron for PD IV/51 and 23 applications for Period I/52 were forwarded with the recommendation of the Department to the Government of India. An allotment of 1240 tons of pig iron was made to the State for Period III/51 in May 1951 and this was distributed to 82 foundries in the State list. In September 51 an allotment of 931 tons was made for period IV/51 and arrangements are being made to distribute it.

51 applications for iron and steel from SP factories in the State were recommended to Government of India for Period IV/51 and 62 applications for Period I/52. 570 tons of iron and steel were allotted to the State for each of the periods III/51 and IV/51 and this was distributed to 76 and 74 factories respectively.

**Expenditure by States (Five Year Plan)
(Part 'A' States)**

State.	Rs. (Crores)	State.	Rs. (Crores)
Assam	12.5	Orissa	15.0
Bihar	55.7	Punjab	15.5
Bombay	120.4	Uttar Pradesh	91.1
Madhya Pradesh	43.7	West Bengal	68.8
Madras	137.0	Total	559.6

**Expenditure by States (Five Year Plan)
(Part 'B' States)**

State	Rs. (Crores)	State.	Rs. (Crores)
Hyderabad	40.5	Rajasthan	15.2
Madhya Bharat	22.8	Saurashtra	21.5
Mysore	36.6	Travancore-Cochin	26.1
Pepsu	8.3	Total	171.0

**Expenditure by States (Five Year Plan)
Part 'C' States.**

State.	Rs. (Crores)	State.	Rs. (Crores)
Ajmer	1.61	Himachal Pradesh	4.48
Bhopal	3.67	Kutch	2.68
Bilaspur	0.42	Manipur	1.00
Coorg	0.53	Tripura	1.50
Delhi	6.02	Vindhya Pradesh	6.24

The Need for Qualified & Trained Personnel.

"The potential high standard of Indian technicians and scientists, had been proved by distinguished work accomplished in many fields by Indians. However, we cannot be satisfied with the present standard in India, which is not as high as in many other countries.

Greater stress should be laid on the practical application of theoretical knowledge gained in classes, the need for more opportunities to visit factories and vacation training in industrial establishments, and for closer co-operation in general between colleges and industries. As in other countries, leading professors should be given opportunities of acting as consultants to industries, while practising engineers should be encouraged to give some of their time to lecturing in colleges.

Exchange of knowledge.

Most engineers, will find their job concerned with men as much as machines, and capacity for good human relations is as important as technical knowledge. Engineering colleges should include a course of industrial relations in their curriculum. Industry would greatly appreciate this, as India is woefully backward in the important science of industrial relations which has made great strides abroad in recent years.

The exchange of knowledge between countries through visiting professorships is now available under the U.N Technical Assistance Scheme, the U. S. Point Four programme, and the Colombo Plan at no cost to this country. Engineering colleges and institutions should get together, formulate plans, and seek the assistance of the Government.

It should be the objective of the modern system of education to lay more emphasis on the intensive study of subjects like science, engineering technology, etc.

The potentiality of modern science to bring prosperity to the people is immense. The country's progress, too, depended upon the extent to which science and scientific inventions are harnessed for the development of industries. Education should be imparted for training proper personnel to step up industrialisation in our country.

Starting of new industries.

We could no longer rest satisfied with the agricultural industry alone as the mainstay of our people, because the agricultural industry, in the absence of the other modern industries, could not better the economic life of the people.

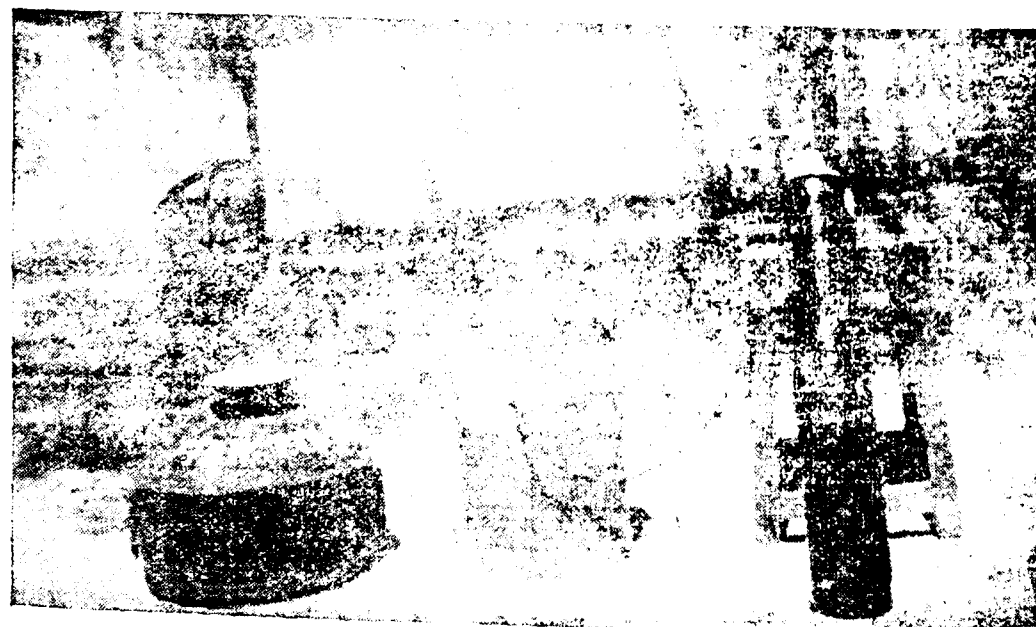
In our schemes of industrialisation new avenues should be found and new types of industries should be started, covering every sphere of production. We should be less dependent on foreign goods, but should keep pace with other advanced countries in the industrial fields. The immense reserves in natural resources and manpower should be harnessed to increase production, and thus to bring about a sound and stable economy in the country.

Realising the need for qualified and trained personnel for the implementation of their schemes, Government have been impelled to start more engineering colleges and also technical and technological institutes. There are now 4 engineering colleges in the State, of which one is located in Coimbatore. Institutions to impart training in other technical and technological subjects have also been started by the Government and spread over important centres of the State. These institutions are sending out year after year not only personnel well-equipped and trained in civil, mechanical and electrical engineering but also skilled technicians and artisans.

The great irrigation and hydroelectric schemes and the river valley projects sponsored and implemented by the Government create a huge demand for Engineers. The demand for education in engineering, is therefore great."

THE HON'BLE SRI P. S. KUMARASAMI RAJA.

FISHERIES SECTION



A comparative study of the transport of fish-seed in oxygen tin carriers and in ordinary tin carriers.

By SRI S. V. GANAPATI, *Hydrologist,*

AND

By Sri P. I. CHACKO, *Assistant Director,*
Freshwater Fisheries Biological Station, Madras.

With a view to effect improvements in the existing method of fish-seed transport in ordinary tin carriers which involves changes of water at intervals of about 6 hours, experiments were conducted in specially made oxygen tin carriers on the model of those used by Dr. Hamid Khan in the Punjab (1946). The conditions of existence in ordinary tin carriers were compared with those in the oxygen tin carriers. Those experiments showed conclusively that oxygen tin carriers are to be preferred to the existing method of transport in ordinary tin carriers, especially when fish-seeds have to be transported over long distances.

Experiment No. I:—In this experiment, three oxygen tin carriers and an ordinary open tin carrier were used. They contained 1.036 and 0.48 c. ft of water respectively. In one of the oxygen tin carriers 200 fry of the milk-fish, *Chanos chanos*

(Forsk.), 2 to 3 inches in size were placed; and the third was kept as control. In the ordinary tin carrier, 100 fry of the same kind and size were introduced. Every six hours, a fourth of the water in the ordinary tin carrier was changed and replaced with fresh pond water: and samples of water were taken before and after each changing. The tins were set aside at the room temperature for 24 hours. At the end of this period samples of water were taken from the oxygen tin carriers also. The results of analysis are shown in Table I, from which it will be seen that the percentage of mortality was considerably lower, i.e., only 2 to 6 in the case of oxygen tin carrier in spite of the slight fall in pH from 8.9 to 8.6, whereas it was 22.0 per cent in the ordinary tin carrier. This experiment showed clearly the importance of changing of water for increasing the oxygen content of the water in the carriers.

Table I

Conditions	Oxygen Tin Carrier			Ordinary tin carrier.				
	Control 11-5-49	A 11-5-49	B 11-5-49	10-5-49 12 noon	11-5-49 6 p. m.	11-5-49 12 night	11-5-49 6 a. m.	11-5-49 12 noon
Temperature before change, °C.	32.6	...	...	32.6	30.2	29.2	28.6	33.3
Temperature after change, °C.	33.2	34.2	33.4	...	32.2	30.2	28.9	33.3
Turbidity (c. m.)	9.8	9.8	8.6	...	10.2	10.1	10.1	10.4
Free CO ₂ , pp. 100,000.	nil	nil	nil	nil	nil	nil	nil	nil
CO ₂	7.13	5.71	5.42	8.27	7.42	6.85	6.28	5.99
HCO ₃	46.71	47.58	48.16	44.68	46.13	47.29	47.58	47.58
pH	8.9	8.6	8.6	9.0	9.0	9.0	8.9	8.8
Dissolved O ₂ (cc/l).	2.826	2.420	2.436	2.726	1.423	1.267	1.046	0.846
No. of fish introduced.	...	200	100	100	...	...	...	...
Percentage of mortality	...	2.0	6.0	...	...	10	6	6

Experiment No. II:—This experiment was similar to the former but with the important difference that the period of transport was kept at 48 hours. The results of this experiment are shown in

Table II. This confirms the conclusion arrived at the last experiment, namely that the percentage of mortality in the case of oxygen tin carriers was considerably lower than in the other case.

Table II.

Conditions	Oxygen tin Carrier			Ordinary tin carrier								
	Control 18-5-49	A 18-5-49	B 18-5-49	16-5-49 12 noon	16-5-49 5 p.m.	12 night	17-5-49 6 a. m.	17-5-49 12n ooa	17-5-49 6 p. m.	12 night	18-5-49 6 a. m.	18-5-49 12 noon
Temperature before change, °C.	33.9	..	...	33.9	...	..	...	...	...	...	...	...
Temperature after change, °C.	30.4	31.0	30.4	...	31.6	29.9	28.2	34.2	32.4	30.6	30.1	3.04
Turbidity (cm).	6.8	6.8	6.8	6.8	6.4	6.4	6.8	6.6	6.7	6.5	6.6	6.4
Free CO ² , pp. 100,000.	nil	nil	nil	nil	nil	nil.	nil	nil	nil	nil	nil	nil
CO ² ,	7.14	6.24	7.14	9.51	7.43	7.14	5.96	8.03	7.73	7.43	7.14	6.54
HCO ³ ,	52.0	52.0	51.69	50.79	49.58	50.79	52.29	48.97	49.28	50.18	50.48	52.0
pH	9.0	9.0	9.0	9.0	8.8	8.8	8.9	9.0	9.0	9.0	9.0	9.0
Dissolved oxygen (cc/l).	4.896	2.172	2.946	4.896	2.142	1.426	0.846	5.380	2.104	1.896	0.746	0.474
No. of finger lings introduced	..	200	100	100	...	..	...	...	...	...	...	...
Percentage of mortality	..	2.0	4.0	...	3	1	35	4	4	4	nil	2

Experiment No. III:—In this experiment fry of the mullet, *Mugil cephalus*, Forskal 1 to 3 inches in size, were transported from the Adyar Fish Farm to Vellore. Both the methods were tried; and the duration of journey was 7 hours. The conditions of existence are shown in Table III.

It will be seen that the percentage of mortality was considerably lower in the oxygen tin carrier. *Chanos chanos*, measuring 2 to 6½ inches were also transported from Pamban to Madras in an oxygen tin carrier. Only two died during this transshipment.

Table III.

Date: 18-4-1949.	Oxygen tin carrier		Ordinary tin carrier.	
	Adyar 9.30 am.	Vellore 4.30 pm.	Adyar 9.30 am.	Vellore 4.30 am.
Temperature of water °C	31.5	35.3	31.1	30.9
Turbidity (o.m.)	30.0	> 30.0	> 30.0	> 30.0
Free CO ₂ pp.100,000	nil	nil	nil	nil
CO ₂ "	0.874	0.291	0.874	0.291
HCO ₃ "	29.92	26.362	29.92	31.397
pH	8.3	8.15	8.3	8.1
Dissolved O ₂ (cc/l)	3.846	7.47	3.634	0.698
Chloride, pp. 100,000	140.0	140.0	140.0	140.0
No. of fish fry	116	112	119	100
Percentage of mortality	—	3.4	—	15.88

Experiment No. IV.—In this experiment 100 *Etroplus suratensis* (Bloch) measuring 2 to 3 inches in size, were transferred from Madras to Mettur Dam by train. The period of transit was 18½ hours. The conditions of existence at Madras and at Mettur are shown in Table IV. The high oxygen content even after reaching Mettur Dam will be evident. The gradual decrease in oxygen content and in pH is striking in the case of the ordinary tin carrier only.

Table IV.

Conditions.	Oxygen tin carrier	
	Madras 25-5-49. 5.0 pm.	Mettur 26-5-49. 11.30 am.
Temperature °C	34.6	31.5
Turbidity (om.)	> 30.0	> 30.0
Free CO ₂ , pp. 100,000	0.234	1.076
CO ₂ "	nil	21 nil
HCO ₃ "	17.231	.463
pH	7.7	7.1
Dissolved O ₂ (cc/l)	4.896	5.584
No. of fishlings	100	97
Percentage of mortality	—	3

Experiment No. V.: A collection of aquarium and public health fishes comprising of 23 *Esomus danricus* (Han.), 10 *Trichogaster fasciatus*, Bl. Schn., 15 *Oryzias melastigma* (McClelland), 10 *Laubuca laubuca* (Ham.), 10 *Barbus stigma* (Cuv. and Val.) 4 *Brachydanio rerio* (Ham.), and 22 *Lepidocephalus thermalis* (Cuv. and Val.) were kept in a closed oxygen tin carrier for 22 hours from 1 p.m., on 3-8-1950 to 11 a.m., on 4-8-1950 without any mortality. In an open tin carrier in which a similar collection was kept simultaneously, there was a mortality of seventeen. Two lots of 80 fishes consisting of 16 *Gambusia affinis* (Baird and Girard), 2 *Rasbora daniconius* (Ham.), 6 *Macropodus cupanus* (Cuv. and Val.), 44 *Barbus stigma* and 12 *Brachydanio rerio* were kept in a closed oxygen tin carrier and an ordinary tin carrier for 26 hours from 2-15 p.m., on 3-8-1950 to 4-15 p.m., 4-8-1950; and the mortality was nil and 14 respectively. Since then several consignments of these varieties of fishes were sent to different parts of the State with no or negligible mortality.

Experiment No. VI.: A consignment of 50 *Rasbora daniconius* (2½-2¾ inches), 25 *Barbus stigma* (2½ inches), 12 *Brachydanio rerio* (1¾ inches), 50 *Trichogaster fasciatus* (1¾ inches), 4 *Esomus danricus* (4 inches), 4 *Laubuca laubuca* (3 inches), 4 *Lepidocephalus thermalis* (2½ inches), 2 *Macropodus cupanus* (2 inches) and 4 *Oryzias melastigma* (1½ inches) were transported by air to Bombay in an oxygen tin carrier without any casualty. The fishes were introduced and sealed in the container at 8-30 a.m., on 7-8-1950 and despatched by an Air-India plane. The container reached Bombay at 3-40 p.m., and was opened at 4-40 p.m., by the Honorary Secretary of the Aquarist Society of India, when all the fishes were found alive.

From all these experiments it would appear that the use of oxygen tin carriers are to be preferred to ordinary tin carriers in as much as they dispense with the frequent changes of water. A temperature of water above 29 °C does not seem to be

fatal to fish-seeds as has been stated by Jagannatham (1947). There is also no need to condition the fishlings before transport. The longer the distance of transport, the greater seems to be the efficiency of the carriers.

Mitra (1942) indicated the advantage in sealing fish fingerlings in a suitably designed vessel along with oxygen for despatch as ordinary parcel in India. Raj and Cornelius (1949) transported a consignment of 60 fingerlings of the Mirror Carp (*Cyprinus carpio*) from Ootacamund to Kumaon in a sealed petrol tank of 10 gallons capacity without any mortality. Vaas (1951) has conducted recently several experiments on the use of sealed drinking-water jerry cans under oxygen pressure for air transport of fish and fry with marked success, the percentage of survivals in journeys lasting 12 to 50 hours being 90 to 100. The use of oxygen to facilitate fish transport is now being practised in many countries. Hall (1949) has described a type of container that is commonly used for this purpose. In America, introduction of compressed air into fish-carrying compartments attached to specially designed truck and railroad car and into containers transported by airplane is extensively adopted as accounted by Copeland (1947). It is hoped that these

procedures would be commonly employed in India for stocking the innumerable inland waters for developing their fisheries.

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FINANCE COMMISSION'S DUTY

"The Finance Commission is charged under the Constitution with the duty of making recommendations to the President on the distribution between the Union and the States, of the net proceeds of taxes to be divided between them and the allocation, among the States, of the respective shares of such proceeds, the principles which should govern the grants-in-aid to the States out of the Consolidated Fund of India, the continuance or modification of the terms of the financial integration agreements entered into by the Union Government with the Governments of Part-B States (former Indian States), and any other matter referred to the Commission by the President in the interests of sound finance."

The Hon'ble Sri C. D. Deshmukh.

Thermal Stratification in Lakes and Ponds.

By Sri S. V. GANAPATI, B.A., M.Sc.,
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AND

Sri R. SRINIVASAN, M.A.,
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INTRODUCTION.

Waters occurring in nature may be broadly classified under two heads: those occurring on the earth's surface and those occurring under-ground. The former may be running or stagnant, perennial or periodic. Running waters such as rivers and streams are designated as *lotic* type while stagnant waters such as lakes and ponds are called as *lentic* type of waters.

Under whatever conditions they may occur they are almost always contaminated with impurities, which may be of organic or inorganic origin or both. The impurities of organic origin are more interesting from the fisheries point of view.

Those impurities which have life in them may be macroscopic or microscopic, and may belong to the animal or vegetable Kingdom. In order to understand the occurrence and distribution of these organisms (chief among them being fish), it is necessary to study the conditions of existence or the environmental conditions, which influence considerably their formation, development and destruction. The conditions of existence in a lake or pond may be further divided as follows:—

(a) *Physical conditions*: morphometry, meteorology, geology of the catchment area, temperature, density, viscosity, transparency, colour and water movement.

(b) *Chemical conditions*: Dissolved gases; and inorganic and organic substances of biological significance.

(c) *Biological conditions*: Periodicity, seasonal distribution etc. of macro and micro-animals and plants.

All the three conditions are inter-dependent and contribute to biological productivity in lakes and ponds. An attempt

has been made to describe the first set of conditions namely physical conditions; and of these temperature is the most important single physical factor, a factor of such great importance that it may be considered as the foundation upon which the whole edifice of biological productivity in lakes and ponds virtually stands. It influences profoundly both directly and indirectly the conditions of existence; and as such the subject of "Thermal Stratification in lakes and ponds" is of vital importance to fish mongers.

2. *Definition of Thermal Stratification*: A piece of water is said to be thermally stratified when there is a difference in temperature between the surface and bottom layers. If one gets into Parthasarathy Temple Tank or any of the temple tanks after 10 A.M., on a sunny day, he will find that the temperature of the upper layer is greater than that of the bottom layer. When such a condition exists in a piece of water, then the water is said to be thermally stratified.

There are several types of thermal stratification, but of these two types are very important. They are (1) direct type (2) inverse type. When the upper layers are warmer than the bottom layers in a piece of water, then it is said to be of the direct or normal type; and when the upper layers are colder and the bottom layers are warmer, then it is called the inverse type of thermal stratification.

Secondly, the difference between the surface and bottom layers may be fraction of a degree or several degrees. The maximum difference rarely exceeds 10°C.

3. *How to find out the Temperatures of the surface and Sub-surface layers in a piece of water.*

(a) *Surface temperature*: The temperature of the surface layer can be readily determined by means of an ordinary specific heat thermometer which is divided to a fifth or tenth of a degree and ranges from 0° to 50°C. If the water surface is smooth, the bulb of the thermometer is immersed in an inclined position just beneath the water surface and the reading is taken without removing it from the water. Parallax should be avoided by holding the thermometer exactly at right angles to the line of light.

But if the water surface is agitated on account of wind action, then it is better to use a special type of surface thermometer, which is calibrated just like the former one but which is enclosed in a metallic frame and provided with a cup in which the thermometer bulb is immersed. Some of the surface water is dipped up and its temperature then noted.

(b) *Vertical distribution of temperature*. When it is desired to record the temperature of water at different depths in a lake or pond, special methods will have to be adopted.

(a) The simplest but less accurate method is to enclose a weighted thermometer in a stoppered bottle and to let it down to desired depths, then to open the stopper so that the water from the particular depth will enter the bottle. Then sufficient time for the bottle and thermometer to acquire the temperature of that water layer is allowed; next the bottle is raised to the surface, and the temperature is read without taking it outside. But there are practical difficulties in this method. If the water is very turbid, then it will be very difficult to read the temperature accurately and it cannot also be used to very great depths.

(b) Another method is to use any one of the several reversible thermometers available in the market. The principle underlying this instrument is as follows. The capillary of this instrument is constricted near the bulb and causes the mercury to separate when the instrument is inverted. The shape of the constriction is such that no subsequent change in temperature is recorded. In operation the thermometer is lowered to the required depth and reversed by a special device such as a falling weight or by a propeller that spins when the instrument is pulled up a short distance

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The thermometer must be handed to the surface for each reading; There are also several electrical types of deep water thermometers, of which one is available at the Fresh Water Biological Station.

4. *The seasonal variations in the surface and bottom temperatures of a piece of water in the temperate region.*

If the water temperatures of the surface and bottom layers of a lake or pond have been noted once a week and at a particular spot and time for a year and the values plotted graphically, then you will get a typical graph from which the following conclusions may be drawn.

(i) February, March & April ... Spring (turn over) May, June and July ... Summer (Direct stratification) August, September, October ... Autumn. (Turn over) November, December, January ... Winter. (Inverse stratification)

(ii) In winter the temperature immediately under the ice is at 32°F.

(iii) When the ice breaks up in Spring, the temperature begins to rise up till about the 1st of August.

(iv) Cooling begins and continues regularly through the autumn until the lake freezes in December.

(v) The surface temperature of the water fluctuates with the air temperature during the course of the day and from day to day. The maximum is usually reached between 2 and 4 p.m. and the minimum between 5 and 7 a.m. The amplitude of variation is seldom greater than 5°F.

(vi) *Bottom Temperature*: During winter when the surface is frozen, the temperature is not far from that of maximum density (39°F). The heaviest water is at the bottom and the lightest is at the top; and the intermediate layers are arranged in the order of their density. Under these conditions, the water is in comparatively stable equilibrium but is inversely stratified i.e. colder water overlies the warmer water. This is the period of winter stagnation.

So, in a temperate lake or pond there are two periods of thermal stratification and two periods of circulation. Of these, thermal stratification in summer is the most important for our purposes and therefore it may be studied a little more in detail.

Thermal Stratification in summer.

As a result of the normal conditions of weather acting on a lake in summer it divides itself into three well defined thermal regions.

(A) The epilimnion—

- (a) A stratum in which the temperature is nearly uniform.
- (b) warmest part of the lake.
- (c) fall of temperature varies from a small factor of a degree to several degrees.
- (d) the amount varies with the temperature of the surface and is subject to diurnal variation
- (e) greatest in the afternoon of a hot calm day, least in the early morning when the surface may be cooler than the stratum below.

(B) The thermocline:

- (a) Stratum of rapid cooling whose limits are somewhat arbitrary.
- (b) fall of temperature equals or exceeds 1 degree per meter.
- (c) its upper limit is usually fairly definite but its lower limit is often arbitrary.
- (d) 60—70% or more of the fall in temperature takes place in this region.
- (e) subject to variation in thickness under the action of wind.

(C) The Hypolimnion:

- (a) extending to the bottom.
- (b) temperature falls slowly, and the curve is almost a straight line.
- (c) the amount of fall in temperature varies greatly with the conditions of warming in spring.
- (d) it may be less than 3 to 6°C and 60. m thick.
- (e) 11% of the total fall or 40%.

5. Stability of Thermal Stratification;

The stability of thermal stratification depends on a number of physical factors such as (a) density of water (b) viscosity of water (c) transparency, (d) dissolved substance, (e) colour, (f) water movement, (g) morphometry and (h) meteorology. Each of these factors may be considered in its relation to thermal stratification very briefly. Some of them favour and others oppose thermal stratification.

(a) Thermal stratification and its relation to density of water.

The density of water depends chiefly upon temperature. Variation in density due to temperature changes is relatively large. This

variation becomes of great importance in explaining the stratification and the water movements which are responsible for the distribution of plankton and at certain seasons of the year for the transportation of nutrient substances of biological significance.

Water has the unique property of having its maximum density not at 0°C when ice is formed but at 4.0°C or 39.2°F. As the temperature goes down below 4°C to the freezing point of 0°C it becomes less dense. As the temperature of water increases gradually from spring to summer when the maximum is reached, it becomes least dense or lightest at the maximum summer temperature.

The change in density.

between	4 ⁰	—	5 ⁰	C is	0.00008
“	9	—	10	“	is 0.000081
“	14	—	15	“	is 0.000145
“	24	—	25	“	is 0.000252
“	29	—	30	“	is 0.000298

It will therefore be evident that the density of water with an increase of temperature of the same amount in a higher range of temperature decreases more suddenly than in the neighbourhood of maximum density. So the significance of density at different temperatures for the stability of thermal stratification of lakes with high temperature will be evident.

In temperate lakes, the range of temperature in the thermocline is to be found in the range of 10-15°C, while in tropical lakes between 25 - 30°C. Therefore for the same difference of 5°C, in the tropics, thermal stratification will be conditioned by a stability 2 to 3 times as great as that found in the temperate region.

Density at 10°C.	=	0.999727
“ 15°C.	=	0.999126
Difference for 5°C	=	0.0006.1
Density at 20°C.	=	0.988230
Density at 25°C.	=	0.987071
Difference	=	0.001159.

So thermal stratification in tropical lakes must be more stable than that in temperate lakes for the same difference in temperature.

(b) Thermal stratification and its relation to viscosity;

Viscosity is internal friction. Any particle of higher specific gravity than water, suspended in water, tends to sink. This tendency is opposed, however, by the viscosity of water. The more viscous the water, the greater this opposition. The viscosity of water varies with the temperature.

(c) Thermal stratification and its relation to morphometry.

Length, breadth and depth, location; shape and size play a very significant part in influencing the stability of thermal stratification.

1. Lakes with very steep sides are lower in temperature than with shallow margin.
2. smaller lakes have higher temperature than larger lakes.
3. wind effect is larger in bigger lakes. On the size of the lake depends the efficiency of wind.

Convection currents or (Forces opposed to stability) are set up in lakes and ponds under the following conditions.

- (a) cooling and sinking of surface water when sun sets or after a heavy fall.
- (b) entry of colder water from a tributary after a heavy fall
- (c) Meteorological changes summer to autumn.
- (d) alterations of winds and calm.
- (e) alterations of cloudy and clear sky.
- (f) cooling of surface water by evaporation.

These conditions produce a favourable situation for the creation of convection currents in surface layers and thus help to produce circulation as against thermal stratification.

Thus a thorough study of the general effect of thermal stratification in lakes and ponds will enable us to explain many phenomena in aquatic biology.

MARKETING OF FISH

Scope for extension through co-operatives

“The Mettur Reservoir yields a substantial supply of fish throughout the year, at a time of unprecedented food shortage, and provides occupation for a large body of fisherfolk. 200 units of licencees and 40 units of departmental fishermen, members of the Mettur Fishermen Co-operative Society, daily fish in the lake at different centres. The Department has 2 mechanised motor boats capable of a good speed carrying 2 to 3 tons. The catch of an individual unit is 50 lbs a day, and the maximum 500 lbs.

The society, could in course of time extend marketing through co-operative societies instead of employing merchants, and consumers will be able to get fish at anything between As. 6 and As. 8 per lb.

A total 1,81,834 lbs. of fish, including 33,728 lbs caught departmentally were taken out in June, of which 1,21,947 lbs were sold in fresh condition, and 25,25,828 lbs. were iced and supplied to out-stations. 27,410 lbs of cured fish was also obtained, and sent to out-stations for sale.

Due to quick transport facilities, the Department brought into the city 480 tons of fish in fish transport vans. During June, the 6 transport vans transported 1,06,520 lbs of fish.

The Department, supplied 350 bales of yarn at subsidised rates to fishermen. Under the salt subsidy scheme 8,760 maunds and 10 seers or 250 tons of fish was saved from spoilage.”

The Hon'ble Mr. J. L. P. Roche-Victoria,
Minister for Food & Fisheries.

Tuticorin Coral Fisheries.

BY Mr. V. D. SPURGEON, B.A.,

Head of Fisheries Section, Central Polytechnic, Madras.

Introductory.

It is common knowledge that sea covers three fourths of earth's surface. But the sea is so vast that one cannot easily comprehend its magnitude being 140 millions of square miles in area. To a layman the sea appears as a huge barren waste. But the largest animals and the tallest plants grow in it. Millions of organisms in varied shapes, sizes and hues live in the unfathomable depths. Almost every life in the ocean is of commercial importance. The food fishes like Seer, Pomfret, Cook-up, Jew-fish, Bombay-duck, and Leather-Jacket, oil yielding ones like Whales, Sharks, Cod and Sardines, chemicals like Iodine, Salt (Sodium chloride) and Algin, precious objects like pearls, precious Coral, Pearl essence, sponges, agar-agar, ambergris, turtle-shell, conch-shell, etc., are all wealth from the sea. Of these CORAL is not much spoken of in India much less in our Presidency.

What is a Coral?

In early times CORAL was taken for a seaweed. Naturally the elegant branches and the stem planted in the sandy bottom misled the early workers. Due to advancement of marine science it is now definitely known that CORAL is an animal. A CORAL, though outwardly appears to be a single individual, bears a great number of organisms—the polyps—held together by Calcareous secretions. The CORAL does not seek light but is capable of living in great ocean depths as well as in shallow margins around Islands carrying out all the normal work of an animal.

Different Kinds in Coral.

There are varieties of Corals. These are classified by marine biologists into different families according to their underlying likenesses. Among them are fan-shaped, pen-like, cup-like, mushroom-like, brain-like, horn-like, claw-like and flower-like Corals. These varieties never fail to impress even a casual observer.

Corals with elegant spreading branches and others with geometric designs are not uncommon. The colouration of pink, yellow, green, brown or purple is yet another fascination of these lovable creatures. There is an almost infinite variety in form and colour among Corals.

Important Coral Fisheries.

Important Coral beds lie on the Algerian and the Tunisian Coasts. Near Sicily also good Corals are reported to be available. The control of Coral fisheries in the Mediterranean passed hands among Western powers in early times. Coral Fisheries on the North African Coast were highly renowned in the Middle Ages. In the Red Sea there is black Coral Fishery. The Japanese Coral fishing industry is known to be of high standard. Many of the Pacific Islands are formed entirely of Coral rock. The great Barrier Reef consists of gigantic masses of Coral Rock fringed by living coral.

Uses of Coral.

Of course precious CORAL is for jewelry. The working up of Corals into ornaments is an Italian Art. It is said that there are 600 establishments in Italy for CORAL ornaments. Corals are mostly cut into beads to be strung as necklaces, bracelets, armbands and rosaries.

As said above Corals display all fancy shapes, sizes and colours. As such they are excellent articles for decorating drawing rooms, public halls, private apartments, and to serve as paper weights, and curios.

In Turkey Corals are employed freely for many objects such as pipes, weapons and the trappings of horses. Corals are popular in North Africa with the exception of Egypt. Persians set them in amulets, necklaces and garters. They make a religious use as gifts to the dead as corals are believed to keep evil spirits aloof from their bodies. The clever trader is often able to exploit the ignorance and superstition

of local population to his advantage. While perfect Corals were exported to China for use as buttons in caps, tons of worm-eaten beads found a ready market in India because certain natives were led away by a blind belief that the evil spirits took up their abode in the little cavities of worm-eaten Corals. Thus what was worthless in China and elsewhere found a market in India.

While the Coral used in jewelry is only one species, there are scores of others among Corals which also have certain Commercial importance. Because the main component in the body tissues of Corals is Calcium Carbonate (lime) the Corals can be made to yield this important chemical for various industrial purposes.

Coral Fishing at Tuticorin.

At Tuticorin on Tinnevely Coast Coral Industry is steadily gaining ground.

The Gulf of Mannar, peculiarly enough, has many Islands along the Tinnevely and Ramnad Coasts. These are of Coral origin. Coral colonies having existed in these spots from time immemorial have grown thick and massive. To these were added sea debris and sand. Thus slowly these colonies formed themselves into Islands and are seen opposite to Pamban, Kilakarai and Tuticorin in our Province. Because they are Coral in origin, they are veritable sources of Calcium Carbonate.

In Tuticorin within about 3 and 5 miles from the shore are the Hare and Church Islands respectively. Over the Islands and upto two fathoms (12 feet) depth around the islands broken bits of corals are commonly met with. The fishermen call such loose and broken bits of corals as "Challi." Unskilled fishermen who cannot go to deep water for Coral fishing, and children gather the "Challi" along the shore and in neck deep water 100 men and children are engaged throughout the year in this collection. Nearly 5000 boat loads of "Challi" are brought ashore in a year for treatment.

The second type of coral is known as "Kadaya" (medium sized). The third kind is called "Nuraikal" (large sized) meaning thereby "stones with bubbles of air." The second and third varieties are not simply picked out but have to be hammered and broken loose from large

coral colonies at a maximum depth of 6 feet and to be hauled up to the canoe. This is hard labour. Here the fishermen have to know diving as well, as heavy blocks of coral all the time hold their breath and remain at the bottom without being themselves lifted up to the surface on account of natural buoyance. This busy fishing goes on all the year round. 70 canoes are engaged with 7 crew and fishermen-divers in each. The Coral fishing canoes measure 36 feet in length 9 feet in breadth and carry a full load of 2 to 3 ton Corals at a time. The crew and divers belong to the famous Baratha Christian Community to whom we owe much for the advancement of fishing Industry and Navigation in the South. The sail used in Coral canoe is lug type. In the afternoon the canoes set their sail and return to the shore opposite Tuticorin Pearl and Chank Fisheries office in Thera-sapuram area. On the shore numerous coolies keep ready to receive the canoes and quickly unload the 'Catches' for the day. The "Challi" and "Nuraikal" are sorted out and separately heaped. The latter is dexterously stacked in the form of huge cubes and rectangles as the unit in purchase and sale of coral is a cubic yard. The selling price is noted below:—

"Challi"	Rs. 2-8-0 per cubic yard.
"Kadaya"	Rs. 4-8-0 " "
and "Nuraikal"	Rs. 6-0-0 " "

Coral Lime Manufacture.

As the "Challi" is dead and deteriorated limbs of Coral colonies, is easy to calcine. Hence it is wholly consumed for manufacture of lime. About 15 cubic feet of "Challi" is put into a lime kiln at a time and the top layer of "Challi" completely covered with mud in the form of an apex of a cone and fire kindled from the bottom of the kiln. It takes three days to get completely calcined and requires Rs. 40 worth of coal cinders. 3 to 4 days time is allowed after complete burning for the lime to cool down.

The kiln is 9 feet high and measures 12 feet across the mouth. There are 40 kilns of this type at Tuticorin. All kilns work all round the year except for a short break in rainy weather.

The 'Chunamb' so manufactured is not pure white. Hence good results cannot be expected in white-washing. Mostly coral 'Chunamb' is used in making mortar. Tuticorin is rapidly expanding in population, industry and area. To meet the increased demand for constructing dwelling houses, factories and Mills mortar is greatly needed for which Coral 'Chunamb' alone is available. The chunamb is sold at Rs. 3 per "Lasthri" (Each lasthri is about 192 measures.)

Coral in Place of Stone.

The "Nuraikal" because of its hardness cannot be quickly burnt for lime. Hence it is used in place of granite, and brick for big constructions. The Coral chunks can be had in all sizes and shapes. And so house construction, erection of compound walls, metalling of roads and building of culverts are carried out conveniently with corals. In Tuticorin it is a peculiar sight to see the compound walls of offices and factories, the sides of dwelling houses, the revetment of roads and tops of culverts, exhibiting the shape and size of corals and sometimes even the 'polyps'. By looking at the huge compound wall running round Fisheries Office one can form a correct opinion of the different types of corals obtainable in the depth of Tuticorin sea. The cheap way of raising a compound wall is simply to stock large corals at the bottom and smaller and lighter ones at the top without mortar or cement in between stones.

The corals meant for construction purposes are usually stacked in the open air and allowed to remain exposed to sun and rain for about a year. This is obviously

to wash the salt from the corals. Corals used straight away from the sea make the plaster and white washings to fall off rapidly. It is an impressive sight to see the North beach of Tuticorin to be full with corals of various types neatly arranged in huge blocks in several rows—some to be bleached by sun and washed by rain and others ready for sale. It is estimated that the annual output of "Nuraikal" is 3,000 tons 800 cubic yards of Rs. 50,000 worth.

Future for Coral Fishery.

The demand for Coral for lime and house construction is ever increasing at Tuticorin. To cope up with the large market the coral fishing industry has to grow. There is scope for more Canoes joining this fishing and more divers finding well paid employment in this line. There being no middlemen to exploit, the coral fishermen stand to great profit. Nearly 500 coolies are employed in transporting corals from the canoes to shore, in stacking them in rows, in filling up the kilns, feeding the fire, carrying 'chunamb' to carts and so on. About 490 crew and fishermen go to sea for coral fishing. Nearly 20 carts and cartmen wait at the shore to transport the lime and corals to town. The Coral fishing industry at Tuticorin has a bright future. It is proposed to float a limited company for the manufacture of Caustic Soda. With plenty of good quality salt at cheap rate in the Tuticorin salt factories and with coral lime so easily procurable from Tuticorin sea, it is hoped that Caustic Soda manufacture will be a success. When this heavy metal industry thrives naturally coral fishing will prosper more and more in this part of the presidency.

DEEP-SEA FISHING IN MADRAS.

Department's work

According to the fortnightly report ended June 30, deep sea fishing operations during the period yielded 7,634 lbs. of fish, and a total quantity of 25 lakhs of fingerlings, mullets etc., was collected and stocked in the departmental and private waters.

Pudukottah Municipality's tanks had taken up, 18,070 labco variety of fish for stocking purposes. A total quantity of 1,31,551 lbs. of fish was caught from Mettur area, and Rs. 46,284 was realised by way of sale proceeds. Fishing operations conducted in the departmental waters had yielded a revenue collection of Rs. 3,393 and the hire charges for the departmental vans realised during the period amounted to Rs. 1,300.

FISHERIES NOTES AND NEWS.

Development of fishing Industry.

Government's help assured.

Mr. K. N. Anantharaman, Director of Fisheries, opening the first Malabar District Conference of Fishermen's Co-operative Societies, on 29th September assured them that all the available data about the marketing movement and protection of fish would be placed at their disposal at every stage. The officials of the Fisheries Department would only be too happy to help them by making valuable suggestions in the marketing of fish.

Mr. Anantharaman said that realising the importance of fish in human diet, the Madras Government is spending lakhs of rupees on fishery development schemes.

The fish catch in the 2 districts of Malabar and South Kanara represented two-thirds of the total landings of Madras State, and these landings only represented a fraction of the total available fish wealth of India. He said they had to see that fishermen got adequate return for their labour. The middlemen should be eliminated, and fish should be marketed by the Co-operative Societies.

Mr. Anantharaman also referred to other problems, like preservation of fish, and methods by which cured fish could be better distributed in the interior. He hoped, when the cold storage plant costing nearly Rs. 10 lakhs was installed at West Hill, many of the problems of fishermen will be solved.

LATE DR. S. T. MOSES M. A.,
DSC., F.Z.S., F.R.A.I.

Dr. Moses was formerly Assistant Director of Fisheries in Madras and later joined Baroda State Fisheries Department as its Director. He held that post till his retirement three years ago.

Dr. Moses was an able administrator and keen researcher. He wrote many original accounts on Madras Fisheries. His Voluminous publications about Baroda Fisheries are of great scientific value. Besides, he was gifted to write popular articles in simple and lucid style in dailies, weeklies and Journals.

He was ever ready to help the cause of science. Quite recently we, the F. T. and N. section wrote to Dr. Moses to give us free copies of some of his publications. He promptly sent them and wrote to us to feel free at all times to approach him for help and advice. His last act of kindness for us was the writing of a long article entitled "The Madras Fisheries—A Retrospect." This article was read out to us and published in last issue of "Indcom."

At 10-30 p.m. on 10th of August 1951 Dr. Moses departed this life and entered eternal rest. Late Dr. Moses was a noble hearted, cheerful and genial soul. He has left behind lofty ideals for all of us to follow.

Dr. Moses' death is an irreparable loss to Fisheries World. The F. T. and N. section feels extremely sorry for his sudden demise.

Activities of Fisheries Section in Central Polytechnic during July, August and September 1951.

NEWS:

All Fisheries students who passed last Technical Diploma Examinations through Central Polytechnic, Madras, were appointed as apprentices in Madras Fisheries Department and posted to Vizagapatam during August.

This year 12 students have joined the 1st year F.T. & N. class in Central Polytechnic.

On 11-8-51 F.T. and N. students visited "Sivaranjita," at Madras harbour accompanied by Pilot Officer Sri V. V. Seshadri to study Navigation and Seamanship.

Students visited Fisheries Museum in Zambazaar market and Training Fishing zone. They went on board of Fishing Vessel Madras to witness Deep sea fishing.

The new students, have enrolled themselves as subscribers of "Indcom" journal.

The Office-bearers and class representatives of F.T. and N. section were elected on 18-8-51.

* * *

The F.T. and N. students and staff passed a resolution condoling the demise of Dr. S. T. Moses—former Director of Fisheries of Baroda—who helped the students with free publications and contributed articles for "Indcom."

* * *

For the first time final year students left on a tour of Northern circars and Ceded Districts during the fishing season (September). They will visit Samalkot collection centre, Bobberlanka hilsa hatchery, Rajahmundry demonstration tanks (started by the present Central Polytechnic Section

Head in 1944); Ippur fish farm, Krishnapatnam angling centre, Nellore waters, Kurnool, Sunkesula Fish farm etc. They will collect rare varieties of fish during this tour for Polytechnic Fisheries museum.

* * *

F. T. and N. students were organised into "Museum squad," "Paper-cutting squad," "Debate-squad," "swimming-squad," "hilarary-squad," "Drawing-squad," "Gasses-squad" etc., according to their individual aptitudes.

* * *

A list of books and publications (in Fisheries and Biology) available in Connemera and University Libraries has been prepared for the guidance of students who want to refer extra literature.

METTUR FRESH FISH FOR MADRAS.

8,000 lbs. per day expected.

"Under the scheme of exploitation of the Mettur Reservoir for fishing operations, it has been programmed to catch about 3,000 lb. per day through departmental units of fishermen, and to obtain another 5,000 lb. through private licensees.

It is proposed to convert the catches into dried fish for distribution to deficit districts, at a fixed price. A portion at present was gutted, iced, and sent to several stations, and the balance cured under hygienic conditions for disposal as dried fish, sold by the Department, wherever possible, through co-operative societies, and private dealers selected by Collectors.

The price of fish in different centres varies because of transport charges."

The Hon'ble Mr. J. L. P. ROCHE-VICTORIA,
Minister for Food & Fisheries.