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MADRAS INFORMATION

JANUARY 1961

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This month's cover

The head of the British State to-day is not only the monarch of United Kingdom but also the head of the group of countries that have, after attaining independence, chosen to remain within the Commonwealth of Nations.

India's relations with Great Britain and its Queen are of the happiest and her ties with Britain have grown closer after independence. The People of India would consider it a great honour to welcome Queen Elizebeth on her visit to their country this month. For, she is the link not only between them and the people of the United Kingdom but also the symbol of unity and friendly association amongst the family of nations that are within the Commonwealth.

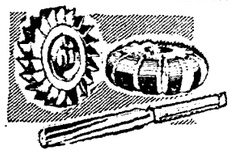
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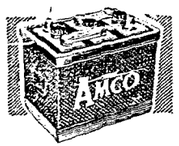
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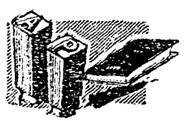


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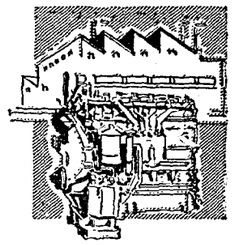
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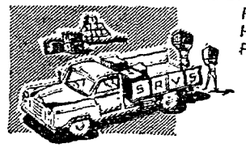


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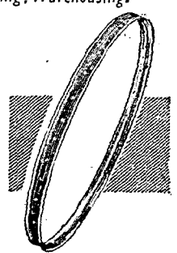
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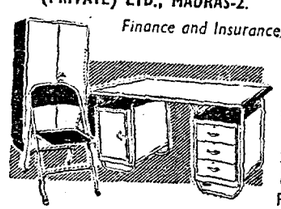
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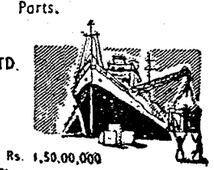
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Agriculture Production Plans

SRI M. BHAKTAVATSALAM, *Minister for Agriculture, Madras.*

Among the many reasons which led to the introduction of the Panchayat Administration, the most important is the need for stepping up the tempo of agricultural production and making it in all respects "A People's Programme". This is clearly stated in the preamble to the Panchayat Act itself. It is therefore necessary that soon after each Panchayat Board is formed, it should utilize all its energies in preparing and implementing a comprehensive Agricultural Production Programme. How is this programme to be drawn up? How is it to be phased? How is the responsibility for the different items to be properly shared by the different persons in charge of the programme? How are the comparatively backward farmers to be made to play their part in the programme? These questions have been repeatedly discussed by the different persons in charge of the agricultural programme and the steps to be taken have been formulated. The memorandum of instructions embodies the broad conclusions, and to some extent, the precise details about how these different aspects of the programme are to be tackled.

Village as Unit

The first thing to be noted about the Village Agricultural Production Programme is that it is framed for the village as a whole. There may be other methods of approach to the problem, but taking the village as the unit is probably the best mode of approach. This will ensure that the progressive farmers would take the leadership and the backward farmers would also be made to fall in line by the pressure of local village opinion. This will also ensure that the supplies and services are planned for a unit of reasonable size, further division being taken up by the villagers themselves. Lastly this will also give proper emphasis to the effort of the collective community in the matter which is almost as important as the activities of the individual farmers themselves.

Governmental Programme

The Food Production Programme can normally be divided into the Governmental Programme and the Villagers' Programme. The Governmental Programme consists mainly of the major and minor irrigation programmes and the supply of fertilizers and insecticides. The scope for major irrigation is rather limited and the expenditure on minor irrigation is being stepped up rapidly. We have taken up a programme of greatly increasing the supply of fertilizers but all that would take time. The Governmental Programme really depends on the finances and other materials which are available. We are doing our best in the matter and expect to be able to deliver the goods soon, the delay being solely due to the unavoidable time taken in establishing new industries and securing additional imports. Wisdom lies not in wasting time on the plea that supplies are not adequate, but in going ahead within all the limitations we have to work under. So, the Governmental Programme need not be made an integral part of the village production plans, being drawn up now.

Additional care needed

Apart from the outside assistance, it is well known that our agricultural production can be stepped up to a great extent by additional care and by the adoption of better farming methods. These items of work fitted into a proper plan will constitute the Village Agricultural Production Programme. Under the instructions now being issued, each village will be called upon to prepare a scheme for development of local manures and a second scheme for extension of improved seeds. The panchayats can also take up any other method of increasing food production which can be given effect to by mobilising local resources. All these items taken together constitute the Village Production Programme. The duration of the programme should normally be a period of three years, as that is the time within which most of the items of work can be taken up and successfully completed.

No time to lose

There is no time to lose and it is my earnest appeal to all the panchayats and the officers of the different departments to bestow their wholehearted attention on this task. I think, within three months, it should be possible for every village in the new Panchayat Blocks to prepare and finalize its full production programme on the lines indicated. This is the beginning, and I hope that the same unstinted effort will be put into fulfil and if possible, exceed every one of the items which are specified in the Village Production Plans. The real test of any democratic institution is its ability to solve its most urgent problems within the shortest time. The main problem facing all of us is the problem of low agricultural production, and if the Panchayats can prepare the plan within the next few months and give effect to it within the next few years, we can say that we have passed the test with full honours and we shall not be found wanting.

The Place of Fish in the Economy of our State

(The text of speech delivered by *Srimathi* Lourdhammal Simon, Minister for Local Administration at the Sixth Meeting of the State Fisheries Advisory Board at Madurai on the 6th December 1960.)

The last meeting of the State Fisheries Advisory Board was held at Thanjavur, a district which is rich in inland fisheries. The Board has been reconstituted early last month, and this is the first meeting of the reconstituted Board. This meeting is particularly important as it is taking place on the eve of the commencement of the Third Plan. We can now take stock of our achievements in the Second Five-Year Plan and discuss our programmes for the Third Plan, the proposed outlay of which is nearly 2½ times more than that of the Second Five-Year Plan. The City of Madurai was the capital of the Pandian rulers whose banner bore the symbol of "Fish", because they realized the importance of fish in the economy of the State. In our deliberation, we have to bear in mind the importance of the fish too and work towards obtaining the maximum benefit from it.

Vaigai Reservoir

As you know, Madurai is in the centre of the hinterland of the southern region of this State on the banks of the river Vaigai and is quite different from Thanjavur in many respects. Though Madurai lacks in river water resources, yet there are many inland tanks, some perennial and some seasonal, fed by the river Vaigai during the rainy season. The Vaigai Reservoir has been taken up for intensive fishery development. It is proposed to construct near the dam site four or five fish ponds and nursery ponds, and quick growing fingerlings will be stocked in the farm and transported to the reservoir for large-scale exploitation in due course. Development of fisheries has been undertaken in several hill streams, lakes and tanks of the district and steps have been taken to introduce special varieties of fishes like Mirror carp, Tench, Golden carp in the hill streams of Kodaikanal, Chinnamanur range and Periyar, and these spots should prove to be of particular interest to the tourists. The adjoining district of Ramanathapuram abounds in many varieties of fauna like chank, pearl oysters, coral, sponge, sea-weeds and sea-cucumbers which are of great economic importance. These are exploited regularly and with the coming into being of a fish processing plant envisaged under the Third Five-Year Plan, I hope the several industries indigenous to this area and connected with the fishing industry will receive greater encouragement.

Besides the Cauvery system, the reservoirs formed in several districts have been taken up for systematic development of inland fishery resources. The fisheries of Mettur Reservoir are well known throughout India. The Bhavanisagar Reservoir is also showing very good results, and commercial fishing is likely to be started there soon. The other major reservoirs like Manimuthar, Sathanur, Krishnagiri and Amaravathi are being stocked with major carps and other species to enrich the fisheries for future exploitation. The several reservoirs formed by the Kundah Project and the Parambikulam Project will also be taken up for stocking shortly. The inland water resources of the State are thus being carefully developed in order to assist the supply of nutritious fish food to the growing population. A sum of Rs. 5 lakhs has been provided for exploitation of fisheries in the reservoirs during the Third Plan.

Help to Fishermen

Fishermen are among the most backward people of this State. Efforts are therefore being made to help them to increase their income. Along with this, social welfare measures for fishermen are also receiving special attention. The Fisheries Schemes have therefore been formulated with the following main objects in view :—

(1) To develop inland, estuarine, inshore, offshore and deep-sea fishing through improved fishing methods, technology and research ;

(2) to provide fishermen with modern crafts and tackles at subsidized rates and through the hire-purchase system and also to provide other equipment like nylon nets and hooks and facilities like fishing harbours ; and

(3) to provide fishermen with long-term credit facilities through Fishermen Co-operative Societies in order to make them less vulnerable to exploitation by the money-lenders, traders and middlemen.

Marine Fisheries

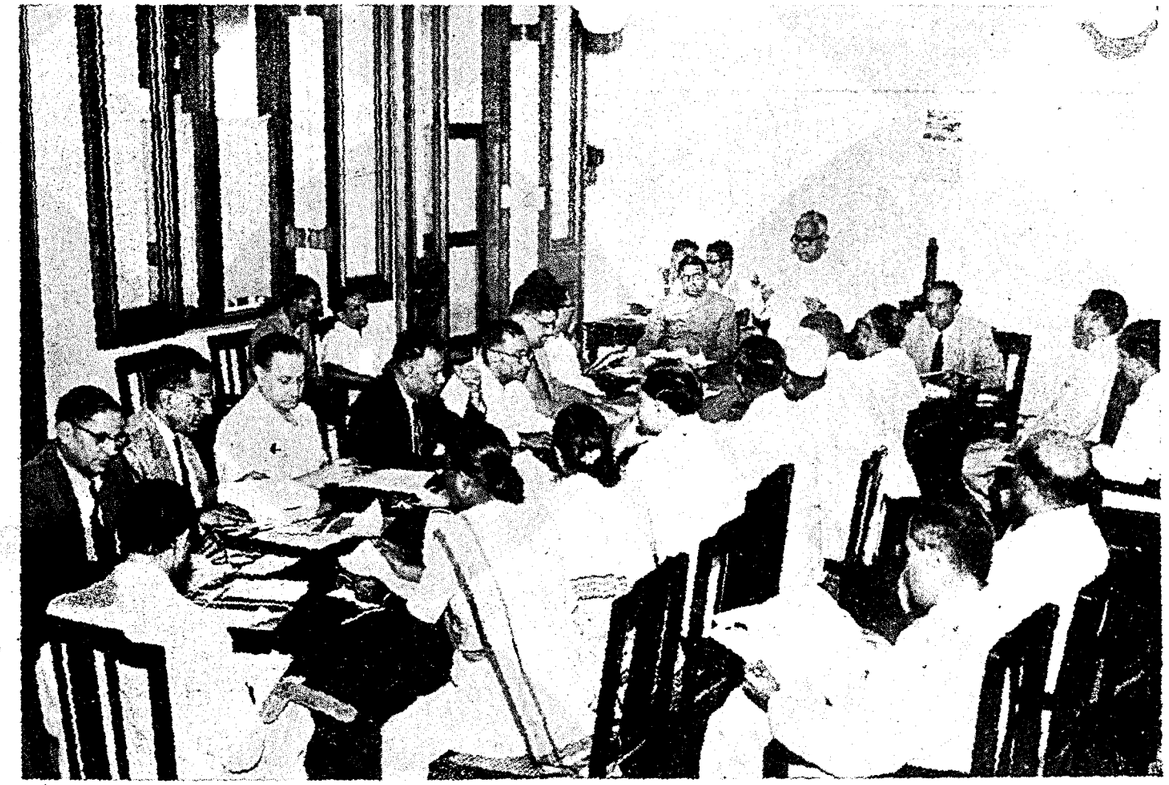
During the First Five-Year Plan, special attention was paid to certain aspects of fisheries development by implementing eight schemes with a total outlay of Rs. 5·83 lakhs. The implementation of these schemes gave considerable impetus to the improvement of the existing methods of fishing and fish culture in inland waters. For the Second Plan, 17 schemes were formulated at a total outlay of Rs. 95·14 lakhs, keeping in view the need for greater development and exploitation of inland, estuarine, inshore and off-shore fisheries and for introducing improved techniques and technological methods, besides improving the socio-economic conditions of fishermen by providing them with better credit and trading facilities. For the Third Plan period, the financial outlay is likely to be Rs. 222 lakhs, of which the probable expenditure during the first year of the Third Plan will be Rs. 42·75 lakhs. Besides the extension on a large scale of the schemes that are already under operation in the Second Plan, it is proposed to take up intensive development of marine fisheries also during the Third Plan period.

Elimination of Middlemen

Under the scheme for assistance to the Fishermen Co-operative Societies, about 22 lakhs of rupees have been distributed to 200 Fishermen Co-operative Societies either by way of loan or grant for disbursement to their members. About 9,500 fishermen benefit by the grant of loans. In addition to the above scheme, another scheme for eliminating middlemen has been sanctioned with a view to relieving fishermen from their indebtedness. During the Third Plan period, it is proposed to spend about Rs. 30 lakhs for giving assistance to Fishermen Co-operative Societies and Federations in the form of loans.

Pablo Boats

During the Second Plan period, so far 65 mechanised fishing boats have been distributed to the Fishermen Co-operative Societies and Federations and also groups of fishermen. Another 67 boats are under construction, and they will be distributed very shortly. In view of the popular demand for mechanised boats it is programmed to construct and supply 400 pablo boats during the Third Plan period. The Board recommended last time that the security deposit collected for the supply of boats might be considered adequate and additional security need not



Sri M. Bhaktavatsalam, Home Minister, presiding over the third meeting of the Employment Advisory Committee Meeting at the Secretariat on 3rd December 1960.

be demanded for the supply of fish net twine and nylon nets. The Government have accepted this recommendation.

Mechanisation Programme

The main bottleneck of the programme of mechanisation is the shortage of boat building capacity, and to overcome this difficulty, Government propose to construct additional boat building yards at suitable centres. Facilities will also be developed for repairs and maintenance of mechanised fishing boats. A scheme for carrying out research for improving the fishing crafts will also be one of the features of the programme of work of the Department during the Third Plan. Nylon nets worth Rs. 6·63 lakhs needed particularly for the mechanised boats have been distributed at subzidised rates to fishermen during the Second Plan. The Scheme is proposed to be continued in the Third Plan with a provision of Rs. 20 lakhs.

Two more fishing harbours, one at Royapuram and another at Colachel are to be established during the Third Plan and the fishing harbour at Cuddalore already taken up for development will be opened to the fishing industry as soon as possible. Mooring facilities like jetties, buoys slipways and the like will be provided at the fishing centres at Tuticorin, Madras and Colachel.

Cold Storages

Two ice plants-*cum*-cold storages, one at Tuticorin and another at Mettur Dam, have been set up this year. More plants will be established shortly at Colachel, Cape Comorin, Thangachimadam, Pulicat and other places. The Government have also under consideration a proposal to install during the next financial year a 2 ton ice-*cum*-cold storage plant with provision for display cabinets in Madurai, which is an important consuming centre. The feasibility of setting-up of such plants at other important centres like Coimbatore and Tiruchirappalli will be considered in due course. This chain of cold storages and the quick transport facilities provided by the Department and the refrigerated van service recently introduced by the Railway authorities from West Coast to Madras will no doubt accelerate the tempo of marketing.

The Government have under consideration a scheme for constructing two model fish markets, one at Madurai and the other at Madras to be executed through the agency of the Madurai Municipality and the Madras Corporation respectively. For the improvement of fish markets, loans amounting to Rs. 2 lakhs have been given to 30 local bodies. A sum of Rs. 5 lakhs has been provided for this purpose during the Third Plan.

Training Centres

One of the handicaps for the introduction of mechanised fishing on extensive scale is the lack of trained personnel for operating modern fishing boats and engines. Given the proper training and encouragement, the fishermen of this State are capable of adopting themselves to new methods. In addition to a programme for improving the two existing training centres at Tuticorin and Nagapattinam, it is proposed to establish, under the Third Plan, one more centre at Madras to train 20 fishermen every six months.



Youth delegation from Latin Americ Countries visited Madras on 23. November ,1960.

One of the Second Plan schemes has provision for installation of three fish meal and oil plants of 20 cwt. capacity, one each at Tuticorin, Nagapattinam and Cape Comorin. Due to difficulty in the release of foreign exchange, the scheme could not be pushed through earlier. However, as the Government of India have now agreed to release foreign exchange amounting to £6,400, the work is likely to be taken up shortly.

Plight of Fishermen

On the socio-economic side, the Department is taking active steps for the amelioration of the lot of the fishermen. Construction of feeder roads to connect fishing villages is being undertaken, and the housing problem is also being tackled to the extent possible with the funds available. We have just sanctioned the revised proposal of the Collector of Ramanathapuram for taking up at once the execution of nineteen road works costing Rs. 2·46 lakhs under the Community Development and National Extension Service Programme. The formation of a coastal road from Neerodi to Colachel in Kanyakumari district has been sanctioned at a cost of Rs. 5·91 lakhs. The Government have also sanctioned the formation of feeder roads costing Rs. 4·71 lakhs for the benefit of fishermen in the districts of Chingleput, South Arcot, Thanjavur and Tirunelveli.

Pearl and Chank Fisheries are State monopolies and give a substantial revenue and earn foreign exchange. Chank fishing is an annual feature, whereas Pearl fishing operations take place according to the availability of oysters in the beds for exploitation. The last Pearl fishing was conducted in March to May, 1960 and this was the sixth in the series started in the year 1955 after a lapse of about 27 years the previous one being in 1927–28. The question of modernisation of Chank and Pearl fishing methods is being explored with the help of Dr. Salvadori, an Italian Under-Water Exploration Expert provided by the F.A.O. With his help some of our Departmental officers and divers have been trained in the use of Aqua-lungs.

We are now at the close of the fifth year of the Second Plan. The increase in fish production as a result of the various plan schemes is expected to be about 20 per cent over the production at the beginning of the Second Plan. The estimated increase in fish production by the end of the Third Five-Year Plan is 25 per cent over the Second Plan production. I hope this target will be achieved without any difficulty.



Sri T.N.S. Raghavan I.C.S., Chief Secretary to Government, giving away on 29th November 1960 the prize to the best illuminated private building on the Republic Day.

Japanese Agriculture: Its Lessons for India

By Sri C. S. JHA
(Formerly Indian Ambassador to Japan, now permanent representative at the U.N.O.)

Shortly after my arrival in Japan, I had the occasion to listen to an address by Professor Dudley Stamp of the London University at a meeting of the International Geographical Society in Tokyo. Speaking on land and demographic problems of the world, Professor Stamp disclosed that on an acre of land in Japan, the farmer produced food equal on an average of seven Standard Nutrition Units. A Standard Nutrition Unit (S.N.U.) is reckoned to be 100,000 calories a year—90,000 roughly for the requirements of an individual to which 10 per cent is added to make allowance for damage and wastage. The next highest figure is in Italy where an acre of land produces 4—5 S.N.U.'s. Japan thus has the highest yield of food per acre in the world. (Countries like the U.S.A. which have large farm lands have a lower S.N.U. yield per acre, since agriculture is extensive rather than intensive). It produces about 13 million tons of rice a year in about seven million acres of rice land.

Agricultural Excellence

I was struck by this statement. During my tours in Japan I have seen enough to confirm the soundness of what Professor Stamp stated. Japanese agriculture is not only intensive; it is practised with great efficiency. Between crops, the land is seldom kept fallow, and the Japanese farmer extracts the maximum from the little plots of land of which he is owner. One cannot but be filled with admiration at the excellence of Japanese agriculture.

Not more than 18 per cent of the total land of Japan, which is a little over 140,000 square miles, is cultivated. Only 40 per cent of the total population of 91 millions are engaged in agriculture, and of these 15 per cent only are whole-time occupied on agriculture, the rest being engaged part-time in farming and part-time in subsidiary occupations. Yet Japan has to a large extent solved its food problem. It is registering record production year after year, and in rice, it is almost self-sufficient. Indeed, the longer one lives in Japan and the more one has the chance to see the country, the more one is convinced that highly industrialised as the Japanese are, the basis for their prosperity is the excellence of their agriculture and that their industrial greatness rests on a sound agricultural base. Japan, of course, is favoured in the matter of rainfall and in the distribution of rainfall throughout the year, though it is frequently subject to severe natural calamities like typhoons. It is, however, true to say that if Japan should have a succession of bad harvests, even its industrial eminence could not prevent it from facing a severe economic crisis.

Secret of Japan's success

The question which is obviously of great interest to us is what is the secret of Japan's success in agriculture. This question deserves a thorough study—study which should extend to the Japanese field and farming village, with a view to make use of the Japanese experience and reproduce their practices and techniques in suitable areas in our country.

I would confine myself to a brief and rather inexpert appreciation of the methods and practices which make Japanese agriculture so successful and pre-eminent.

The results produced by Japanese farmers can be traced to the excellence of—

(i) their organization and methods,

(ii) their farming techniques, and

(iii) the manner in which the results of experiment and research are passed on to the farmers.

Rice Cultivation

In the latter category may be mentioned the well-known Japanese method of rice cultivation, the use of fertilizers including composts and a large proportion of human manure, and the use of insecticides, combined above all with application and industry of the farmers. No cultivated land is left without crop for more than 15 or 20 days—the minimum preparation time between harvesting one crop and sowing or planting another.

In the field of organization and methods, the following are the more striking features of Japanese agricultural economy:

Land Tenure

The Japanese population today is one of peasant proprietors. This is the result of far-reaching reforms introduced in the occupation period by which the feudal system was abolished, the landlords were compensated (according to them very poorly) and the land was turned over to the

farmers. The latter were permitted to pay for occupied land in instalments. Practically, all Japanese farmers are by now proprietors of the land cultivated by them. They are now free from the dead weight of centuries and instead of having to pay as much as 60 per cent of their produce as rent, they now enjoy the entire fruit of their labour and enterprise. The reforms were no doubt drastic, brought into operation within the space of one year or so, and they initially created grave maladjustments in society and considerable hardships. But that period has now passed; and thanks to these far-reaching reforms, the Japanese village now presents a cheerful spectacle of prosperity and well-being. There has been a new awakening among the farmers; the farmer has now an increasing incentive to produce more. He is now in direct touch with the market instead of having to hand most of his produce to the landlord as rent. The savings of the farming community which are deposited with the Agricultural Co-operatives form the backbone of national savings and industrial investment. A significant psychological change has come over Japanese society which has made for stability and progress. The change of outlook of the farmer provides a good ground for the growth of democracy and the latter in turn has influenced the farmer's outlook and effected an important change in the status of women and the extent of their contribution to the life of the village community and to the management of the farms.

Village Co-operatives

Japanese agriculture and the rural community generally owe a great deal to the network of agricultural co-operatives which cover the whole of Japan. The agricultural co-operative movement in Japan has a long history and the structure of such co-operatives has undergone many changes responsive to changing conditions. Originally started under the Meiji era, these were to a considerable extent improved and supervised and controlled by the State. In their latest forms, however, they are governed by the Agricultural Co-operatives Law of Japan enacted in 1948. Agricultural co-operatives are now democratically elected by the union of farmers, the latter being entirely responsible for management and control with a minimum of State supervision.

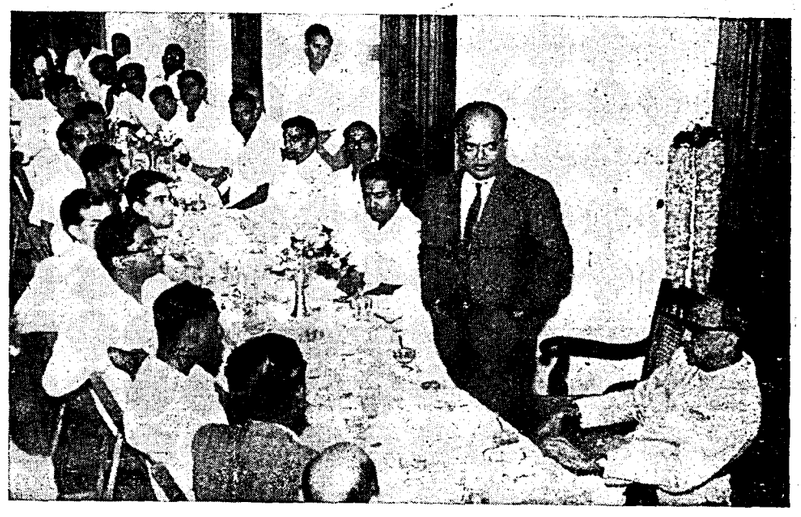
Co-operatives Classified

Agricultural co-operatives are classified in two groups—(i) multi-purpose or general purpose co-operatives, handling the credit, purchasing, marketing and other business, (ii) specified co-operatives dealing with specific activities, e.g., sericulture production and marketing, livestock and dairy, horticultural production and sales, reclamation and settlement, rural industries, etc. The multi-purpose co-operatives hold a dominant position in Japan today.

Agricultural co-operatives are systematically bound up with each other through local unit co-operatives which function within a city, town or village under a Prefectural (Provincial) Federation and the National Federation of Agricultural Co-operatives. There is also a Central Co-operative Bank and a Central Union.

General Purposes Unit

On March 31, 1956, the number of General Purposes Unit Co-operatives was 12,789 which exceeds the total number of cities, towns and villages. Thus, sometimes more than one or two General Purposes Unit Co-operatives exist in the same village or town.



Sri T. N. S. Raghavan, I.C.S., the Former Chief Secretary was the guest of honour at a party got up in the Secretariat on the eve of his retirement.

Agricultural co-operatives carry on a wide range of activities; among these credit, purchasing and marketing are the most important. In recent years, co-operative insurance has shown remarkable progress. Apart from these, there are operations and guidance activities on agricultural co-operatives which are being carried on.

Credit activities

Agricultural financing in Japan falls under three heads—(i) Co-operative financing (through the three stage link up of the Unit Co-operative, the credit federation and the Central Co-operative Bank), (ii) financing by City Banks and other general financing institutions, (iii) financing by Government funds. The last source is usually available at the time of natural calamities or disasters of which Japan has many every year. Loans from Co-operatives form about 25 per cent of the farmer's financing. The greater part of the agricultural co-operative funds is loaned to farmers but surplus funds are deposited with the parent Federation.

The largest source of funds of co-operative financing is savings. The farmers on an average put 50 per cent of their savings in agricultural co-operatives, 15 per cent in Banks, 9 per cent in Postal savings, 11 per cent in Post Office Insurance and Annuities and 6 per cent on life insurance, etc., etc.

Purchasing activities

The purchasing activity of agricultural co-operatives aims at supplying material required for production as well as material for daily needs of member farmers.

The items mainly handled by the Co-operatives are fertilizers, which form 45 per cent of their total purchases, agricultural chemicals, cattle feed, farm machinery and implements. In addition, the Co-operatives are handling increasing business in consumer goods. The Co-operatives themselves have to carry on their purchasing and selling activities in competition with small private enterprise. They have to face the resistance and competition by manufacturers and distributors, and from retail shops in the villages. But, nevertheless, they appear to be handling increasing volume of business every year.

It is estimated that the farmer on an average purchases 45 per cent of his fertiliser requirements, 20 per cent of cattle feed, 10 per cent of agricultural tools and machinery, 5 per cent of agricultural chemicals and 10 per cent of other things from his agriculture co-operatives.

Marketing Activities

Marketing is the most important activity of the co-operatives. Since the varieties of farm products are numerous, the marketing of these is proving an increasing strain; the marketing of perishable goods in particular is proving difficult. The percentage of goods marketed through the marketing co-operatives are roughly—

	PER CENT.
Rice	98
Barley and wheat	75
Sweet and white potatoes	40
Fruits and vegetables	10
Cocoons	30

The agricultural co-operatives operate agricultural warehouses which perform a remarkable function in carrying on Government control over rice in Japan and storing goods sold or purchased by farmers.

The quantity of rice sold by farmers to the Government under the present food policy is about 4 million tons. The total capacity of agricultural warehouses operated by agricultural co-operatives exceeds this amount and, therefore, the rice collected by Government can be stored in the existing agricultural warehouses.

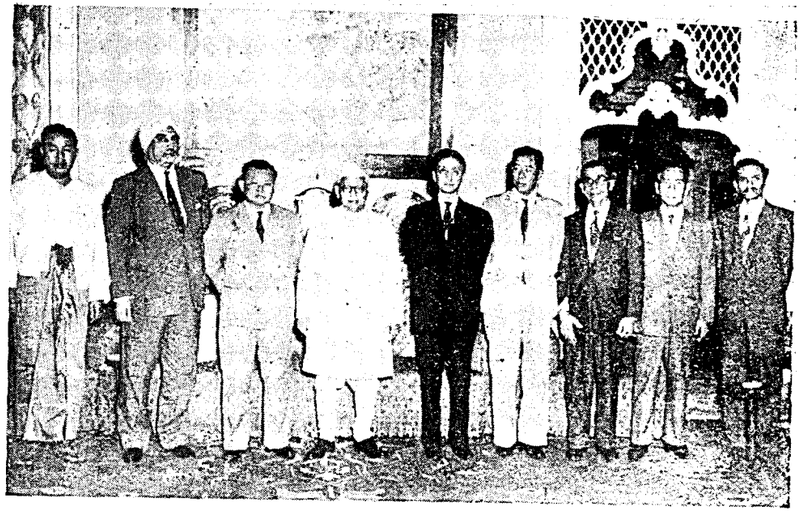
The agricultural co-operatives also help farmers in operating subsidiary cottage industries. Most of the farms in Japan are small and families proportionately large. The farmers, therefore, take to some simple subsidiary cottage industries operated by themselves and their family members. The capital required is small. There is no expenditure on buildings. The farmer operates his small machines in one room of his farm house and the investment on these simple machines seldom exceeds Rs. 400 to 500. The raw materials utilized are farm products, e.g., bamboo, straw, mulberry leaves for silkworm, etc. The agricultural co-operatives guide farmers in these cottage enterprises and undertake the marketing of their products. I have myself visited several farm houses where farmers and their families were engaged in such subsidiary occupations and I was greatly impressed by the practical and inexpensive way in which Japanese farmers and their families utilize their leisure time to supplement their income from their fields. Fortunately, Japan specialises in making small machines suitable for such subsidiary occupation by small and rather poor farmers at very cheap prices. It would be a great advantage for us to buy a whole range of such machinery, which are both hand-operated and power-driven, adopt such as might be useful to us and thereafter ourselves manufacture such simple machines for sale or loan to farmers.

Medical Facilities

Among the other activities of village co-operatives are medical services, mutual relief insurance service, educational and national guide service. Owing to inadequate are social security system in Japan, the farmers in general not in a position to enjoy better medical facilities. Therefore



A party of U.S.J ournalists who met Sri C. Subramaniam, Finance Minister, at the Secretariat on 2nd December 1960 during their visit to the City.



ıe Governor of Madras snapped with e members of the Burmese Trade legation which was in the City in ovember last year.

medical services by agricultural co-operatives are of primary importance. Hospitals are maintained by the Federation of Agriculture Co-operatives and Medical Services to member farmers of the Unit Co-operatives in the Federation. In April 1955, there were 149 co-operative-operated hospitals, 90 health centres, 17,715 sick beds, 1,173 physicians and 4,252 nurses and technicians. These handled in a year over 5 million in-patients and about 9 million out-patients.

Agricultural co-operative insurance is a new enterprise. Three kinds of insurance are being undertaken-life insurance, building reconstruction insurance and co-operative building fire insurance. Today the most popular one is life insurance followed by building reconstruction insurance.

Education and Guidance

Through the medium of movies, film slides, radio broadcasts, pamphlets and leaflets, etc., the activities of the co-operatives are publicised among farmers. Appropriate direction and assistance are given by Administrative authorities and National Guidance Federation of the agriculture co-operatives to the respective individual co-operatives. In this campaign of education of farmers, the co-operatives combine with Prefectural and National authorities and organizations. In Japan, however, the education of farmers is a relatively simple matter. Literacy exceeds 99 per cent and practically every family owns a radio set. I was impressed by the village radio net-work in each Prefecture (about the size of an Indian district) which serves as means of dissemination of knowledge to farmers about weather, crop prospects, methods of dealing with insect pests, public health, education, etc. The village net-work is usually operated by small transmitters operated by the Prefectural Government.

The above description is rather inadequate but may serve to give an idea of the important role that agricultural co-operatives play in Japan and the contribution they have made to the evolution of a healthy economy and a prosperous Japan. Indeed, they may be said to be the backbone of Japan's agricultural pre-eminence.

Reproduction in India

The question arises whether and the extent to which Agricultural co-operatives in Japan can be reproduced in our country. This requires detailed field study by experts who should be charged with not merely writing learned reports, but with the practical task of reproducing in particular areas in India projects on the Japanese model. Our Community Development Projects are already a live organization with much the same objectives as Japanese Agricultural Corps. I feel that the good points of Japanese Agricultural Co-operatives can be detailed into our Community Development organization. It is perhaps within the framework of the latter that we can best utilize the experience of Japan. Development of Agricultural Co-operatives as in Japan will be of the greatest help to Government in operating the monopoly wholesale purchase and distribution of foodgrains.



Prof. Humayun Kabir, Minister for Cultural Affairs, laying the foundation stone for the National Tagore Memorial Theatre at Madras on 19th November 1960.

Veterinary Health Service

Dr. I. D. MANTRAMURTHI, *Deputy Director of Animal Husbandry (Madras).*

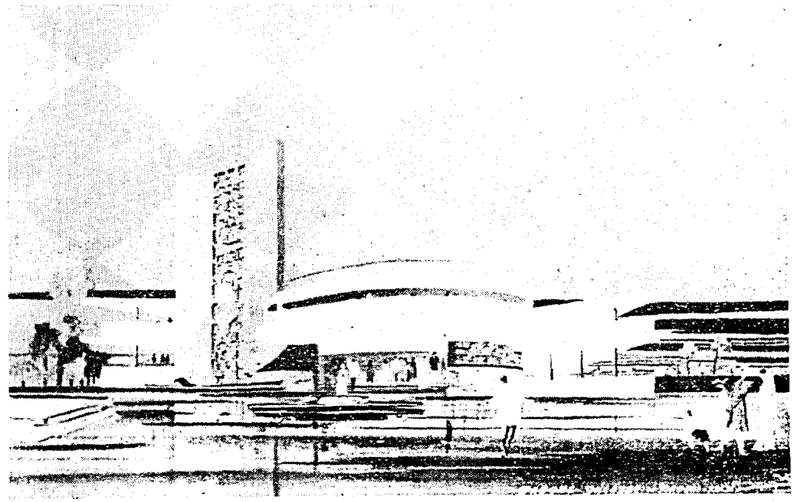
For the expeditious and effective control of contagious as well as non-contagious and parasitic diseases that spread among livestock, an efficient Veterinary organization, both at headquarters and the field, has been set up in the State.

The Director is assisted by one Deputy Director (Veterinary) at headquarters on the disease side supported by the Madras Veterinary College for education and research and the Institute of Veterinary Preventive Medicine for production of biological, research and disease investigation. The field staff consist of District Veterinary Officers, one or two in each district, under the direct control and supervision of the Deputy Director of Animal Husbandry (Veterinary). The District Veterinary Officers have under their control a net work of Veterinary Hospitals, Veterinary Dispensaries, Minor Veterinary Dispensaries, Touring Billets and First Aid Centres manned by qualified Veterinary Assistant Surgeons, Veterinary and Livestock Inspectors and Stockmen who render timely aid to the livestock owners. Though there were only 46 Institutions and 43 Touring Billets in the year 1920, there were 110 Institutions and 87 Touring Billets at the end of the First Five-Year Plan and due to increased demand for Veterinary aid all over the State, it is expected to increase the number of Veterinary Institutions to 198 by the end of the Second Five-Year Plan in spite of the acute shortage of trained personnel to deal with the problem of disease control.

Disease Control

The outstanding livestock diseases which cause serious economic loss to our State are rinderpest, Hæmorrhagic Septicæmia, Black Quarter, Anthrax, sheep pox, Ranikhet, Enterotoxsemi and Foot and Mouth. The total annual loss due to mortality from infectious diseases alone is roughly estimated at 3 crores of rupees. There are many other diseases which do not end in death, but totally reduce the vitality and productivity of our cattle. It is gratifying to record that in our State we have today eradicated the most fatal disease rinderpest from the State covering an area of nearly 51,000 square miles (and well being of 11.7 millions, cattle and buffaloes). The result in the saving to this State in the manufacture and use of the biological for this single disease for the last 5 years compared to the value and quantity of biological manufactured and used in the previous years, in the residuary State is Rs. 75,335. To this must be added the value of cattle saved from these diseases and a loss of productivity in the survivors for a correct appreciation.

Blue-print of the National Tagore Memorial Theatre.



In the same manner all the other fatal diseases of our cattle will be under control and the State is well prepared for undertaking all planned livestock development, marketing and disease control. The total value of loss prevented from the various fatal livestock diseases basing on the available minimum mortality and incidence of the various diseases against which protective vaccinations were done in the years.

Year.	*Number protected.*	*Loss prevented in terms of rupees.*
1946-47 ..	852,217	2,87,73,600
1947-48 ..	761,067	2,53,68,900
1948-49 ..	594,529	1,98,17,600
1949-50 ..	819,425	23,83,400
1950-51 ..	715,022	2,38,34,00
1951-52 ..	217,678	72,55,900
1952-53 ..	230,865	76,93,800
1953-54 ..	10,41,290	3,47,09,600
1954-55 ..	963,615	3,21,20,500
1955-56 ..	19,89,583	6,60,19,800

Great Saving

Is this not a great saving to the State ? Thus the total annual mortality from infectious and contagious diseases in cattle in the State which swelled into more than six digits in the past have been reduced to the minimum in the last five years in cattle while all the Veterinary Institutions and Touring Billets treated 386,658 cases in 1955-56. Control of epidemics and timely treatment of the sick are important items in any plan for the development of livestock in a country. It is therefore indispensable that we must maintain an efficient Veterinary Intelligence Health Service to maintain the 23 millions of livestock in our State in good health and also to keep the State as free as possible from being infected from the neighbouring States.

The aim of this Department is not only to control effectively the contagious diseases during outbreaks but to plan for their total eradication also. It is with this noble object in view an Institute for the manufacture of biological products necessary to protect the livestock of this State against the ravages of the various contagious diseases has been established at Ranipet at considerable savings to the State with a well-equipped laboratory, an up-to-date Library to facilitate research work, latest equipment for the manufacture of biological products on modern lines and specially trained staff. It is pleasing to note that through the services of a F.A.O. Veterinarian, the Institute has now been developed into a pucca Research Centre on modern lines with the latest equipment to improve the efficiency and keeping quality of the biologicals and to ultimately reduce the cost of production. Freeze Dried Rinderpest, Ranikhet and Fowl Pox vaccines are now being released for the first time in this State. Potent Sera and Vaccines for the control of most of the common diseases are manufactured and supplied to the staff of the Animal Husbandry Department not only in Madras State, but also in the neighbouring States of Kerala, Karnataka, and Andhra. With the help of these products, timely vaccinations of cows and buffalloes in actual outbreaks and also in free areas have been done during the last three decades, and the disease position has improved considerably protecting several thousands of valuable cattle and saving lakhs of rupees to the agriculturists. Hence it may be mentioned that this is the first Institute of its kind in India to be provided with such equipment and modern



Officers of the Secretariat got up a party in honour of Sri T. N. S. Raghavan, I.C.S., the retiring Chief Secretary. Sri T. N. S. Raghavan is seen addressing the officers.

devices for the manufacture, production and research in animal biologicals and I may here say that Madras is again giving a lead to other States on Veterinary Research and disease control.

In addition to the manufacture of the above biological products, research work in connection with the improvement of the biological products and study of the different organisms found responsible for causing the disease under field conditions, the antigenic variations, if any, in them and the manufacture of new products to control other contagious and infectious diseases of livestock are also undertaken. This Institute also serves the purpose of imparting education and training to the Post Graduate students of the Department. Are we not proud of this Institute ?

A disease investigation section has also been established at Ranipet to take up prompt measures to investigate the occurrence of cattle, sheep, goats and poultry diseases and to co-ordinate the field workers with research workers through the medium of investigation officers.

Research and Education

In the field of disease control, the Madras Veterinary College has been playing a very important role as it continues to lead in the sphere of Veterinary education in our country. The College, besides teaching, has bestowed much time and attention on diagnostic work and on research and investigation on animal diseases of economic importance. Sustained work on diseases like Nasal Schistosmiasis, Bovine Lymphangitis, Caprine pleuro-pneusonia, Rhinosporidiosis, Surra and luxation of patella pursued in the laboratories of the College has contributed much to the knowlege of these diseases and to their ultimate control. As in the past, researches on various animal diseases are also of equal importance as they are known to cause huge economic loss to the farmers. Many animals are killed annually by a few of these diseases though the majority of parasitic diseases are insiduous in nature. Affected animals are stunted in growth and emaciated and unproductive. To the tiller, the animal power is lost. Yields like meat, milk, eggs and wool become greatly reduced thus affecting the nation's wealth and economy. With a view to enlarge our knowedge about these diseases, a Helmintholgy Research Section has been established in the College.

During the past 50 years, the College has turned out about 2,100 Veterinarians and other allied personnel consisting of 912 Diploma holders (G.M.V.Cs.), 572 Degree holders (B.V.Scs.), 6 M.Sc., 1 Ph.D. apart form the 229 short-term post graduates, 130 Stockmen Compounders, 203 Veterinary and Livestock Inspectors and 45 Scientific Players. An All-India Post Graduate Course in Parasitology has also been started in this College. Thus the College which was started in 1903 with very modern objectives, limited facilities and stock has passed through many vicissitudes and has now grown into a premier educational and post graduate Institute of its kind embracing many branches of Veterinary Science and Animal Husbandry. The College, Hospital, and Laboratories have been equipped with the latest apparatus and appliances and the ailing animals are treated by employing the latest therapeutic agents and techniques.

Clinical Laboratories

Livestock improvement is inevitably linked with disease control. The need for prompt diagnosis and confirmation of the disease cannot be over emphasised in any scheme for disease control. In the practice of modern medicine the part played by Clinical Laboratories is well recognized. Central Clinical Laboratories have therefore been opened in all the Headquarter Hospitals and Livestock farms with necessary equipment including microscopes and refrigerators. These laboratories do help the Departmental staff in quick diagnosis, treatment and control of various diseases. Ten laboratories of this kind are now functioning in the reorganized State of Madras.

Mobile Veterinary Units

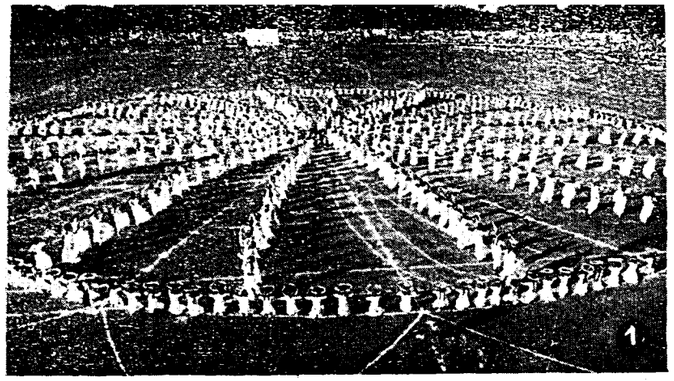
With a view to control all cattle epidemics, mobile motorised units have been introduced in the districts.

We cannot forget the fact that epidemics may break out at any time and anywhere during certain seasons and spread like wild fire, if not controlled promptly. The sera and vaccines used for the protection of animals conferred immunity of a short duration necessitating re-inoculations which will have to be carried out without any loss of time.

Under this scheme one well-equipped motor mobile unit with necessary staff for each district has been planned during the Second Five-Year Plan and two such units have already started functioning in the districts of Chingleput and Thanjavur.

A combined effort by these net work of Institutions helped by the mobile units co-ordinating the field and research workers through the medium of investigation and Inspecting Officers has contributed a great deal in preserving and protecting the livestock of the State from the ravages of contagious and infectious diseases and thus helping the economic well-being of the agriculturists in the State.

Children's Da



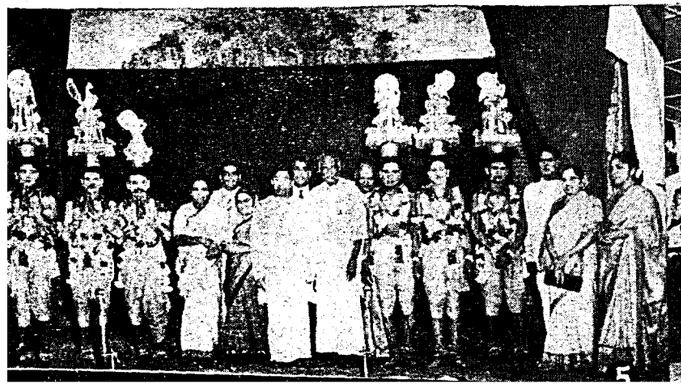






1. Children's Rally at the Corporation Stadium on 5th December 1960.
2. Chief Minister taking the salute at the parade by N.C.C. on 5th December 1960 at the Corporation Stadium.
3. Chief Minister giving away the prize to the best Corporation School.

4. Finance Minister presenting the state award to Rajadorai from Tanjore for outstanding service.

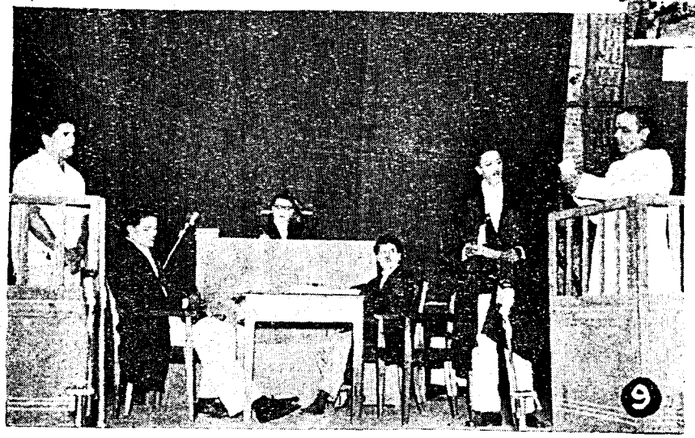




Police Sports



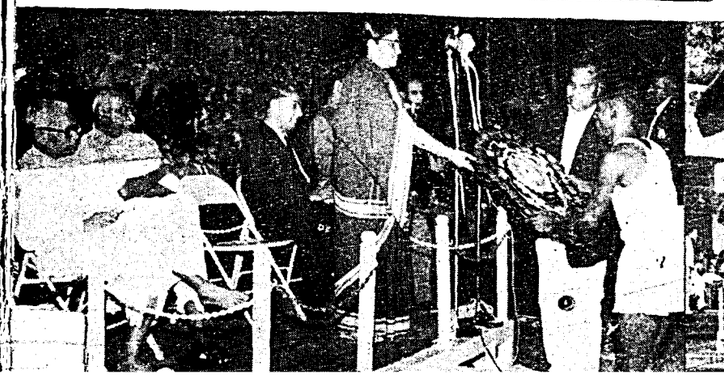


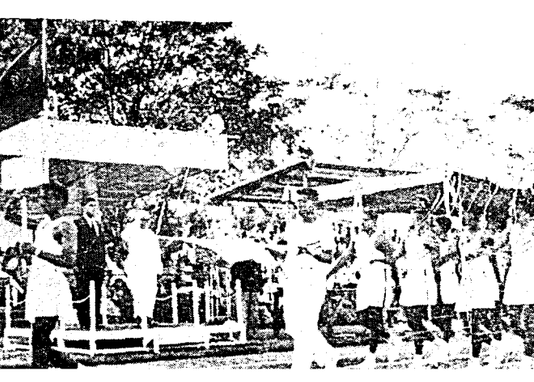




5. Variety entertainment by Police on 2nd December 1960.
6. Chief Minister and Home Minister witnessing the Police Sports.

7. Smt. Bhaktavatsalam presenting the shield to the winners in the Police Sports.
8. Participants in the sports marching past.
9. Variety entertainment.
10. Passing out parade by the Lok Sahayak Sena Camp.
11. Outstanding cadet receiving a prize from the Home Minister.
12. Territorial army Day.





A Corner for Children in the Deer Park

By Sri S. M. A. ASLAM, *P. A. to Chief Conservator of Forests, Madras.*

At a short distance of 5 miles from the City of Madras (next to Gandhi Mantap in Adyar), is a spot for those who seek wilderness as a change from the noise and bustle of the city. This spot is called the " Guindy Deer Park ".

Although it stands no comparison to the many places of the State so popular for their scenic beauty or for their abundance of wild life, the Guindy Park is nevertheless unique, first, because it lends the City of Madras the proud claim of being the only city with a natural park within its close vicinity and secondly because it is perhaps the only sanctuary of its kind in India for animals of the open country. It is rich in jungle fowl besides a fine collection of black buck and spotted deer. It also affords a home for a variety of birds. The flora too is unique as one of the few truly relict patches of vegetation representative of South Indian Scrub.



Children at the Park.

History of the Park

This Park owes its existence to the generosity of the late Shri A. J. John, Governor of Madras, who in March 1958 formally relinquished 1,000 acres of the extensive park area attached to Raj Bhavan to be developed as a natural park for the public. The " Guindy Lodge " (as it was then called) was the property of Sir Gilbert Ricketts and was purchased by the Madras Government after his death in 1817. From 1825 it served as the country residence and week-end resort for the Governor of Madras who moved into it permanently in 1947. Within this park lies the Children's Corner. Dedicated to the people, particularly to the children of Madras, the Park was inaugurated by the Prime Minister of India on the occasion of the First Centenary Celebrations of Forest Administration in the Madras State in 1959.

The fourteen acres of the Children's Corner are like an amphitheatre carpeted with grass and walled in by clumps of trees and scrub jungle. This Park provides for the popular games and amusements found in conventional city parks and gardens and combines with it wide scope for the study of nature.

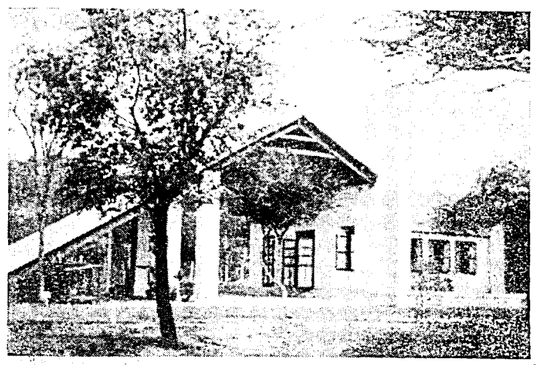
A child can here learn to know a banyan from a peepal as all the different species are labelled with their botanical and their common names. He can have the adventure of adding his tracks to those of birds, squirrels and deer. He can have the thrill of listening to the rapture of song birds serenading him from nearby trees and the delight of listening to the orchestra of parrots and pigeons. He can have the excitement of watching the capering chattering monkeys and the bouncing hare. There are bird baths, avaries, nesting boxes, rockeries and ornamental ponds, all alive with birds who seem to have captured the colours of a sunset in their wings. These birds invite any child to a pleasant game of " identification ".



Look-out Tower.

Open Air Theatre

There is an open air theatre built around a spreading banyan tree. It brings to one the ineffable peace born out of being very close to Nature. The small hut built for the convenience of holiday makers is sure to fascinate a child with all the magic of a doll's house. It has a few comfortable camp chairs and tables, a fine though small collection of books, all replete with pictures of birds and animals and attractive cages containing animals and reptiles. The Park has been electrified with flood lights, and there are proposals for installing a midget train. The riding club adjoining this Park has a few ponies to amuse the children.



Children's Library at the Park.

Joyous Experience

To reach the look-out Tower by an easy graduated slope is really a joyous experience to enjoy. From there one can see the configuration of the land and the park with its well laid-out walks intercepted by beautiful ponds and delightful flower beds. From there one can, if one has a bit of luck, see hares, as they bounce across to the wooded park from the cleared spaces of the Children's Corner, the black buck and the deer, as they steal shyly into the park, and canter back to the forest and the butterflies and bees as they shuttle about doing their job as Cupid for flowers.

A child will immensely enjoy its visit to this Park, and the rare moments of pleasure it will have by being close to nature and witnessing God's dumb creatures at play and at work will be treasured by it. The fear entertained by a child of wild life which hinders its innocent interest in the fauna may vanish from its mind, by learning from its trip to the Park " How easy it is to make friends with flowers and birds and everything in Nature, if you go to them affectionately and with friendship ". (Pandit Jawaharlal Nehru.)



Children witnessing a deer at the Park.

Achievements in the Field of Family Planning

The Family Planning Programme of the Government of Madras is being implemented successfully in all the Family Planning Clinics in the State. Government Family Planning Clinics are functioning in all District Headquarters Hospitals and in most of the Taluk Headquarters Hospitals. In addition, Family Planning advice is given to fathers and mothers in all Primary Health Centres. The Maternity and Child Welfare Centres and Municipal Dispensaries have been requested to give Family Planning advice along with the other advice given to fathers and mothers attending these Centres. Trained staff have been posted to all the Family Planning Centres for giving necessary advice to fathers and mothers. Contraceptives are distributed free and at subsidised rates to fathers and mothers who ask for the same.

Organization

In all urban clinics full-time Women Medical Officers are in charge of the women's section of the Family Planning Clinics and part-time Male Medical Officers are in charge of the men's section. In rural Family Planning Clinics the staff pattern is a staff nurse trained in Family Planning. The Health Visitors of the Primary Health Centres have been trained in Family Planning and put in charge of Family Planning propagation work there. In addition, pharmacists attached to Government Taluk Headquarters Hospitals have been trained in Family Planning, one for each hospital and put in charge of Family Planning propagation work for men in that area. At the Primary Health Centres level, for contacting the fathers, Health Inspectors are to be trained in Family Planning and put in charge of this work.

In the City of Madras, Corporation of Madras, has been divided into six major divisions and one full-time Woman Medical Officer for Family Planning is in charge of one main Centre and seven or eight sub-Centres. In each Centre and sub-Centre either a trained Social Worker or trained staff nurse is in charge of Family Planning Work. There are 44 Mothers' Information Centres for mothers. For fathers, 32 Information Centres are functioning. In each Centre there is a male tutor and a male canvasser for giving Family Planning advice. The work of all the 32 Fathers' Information Centres is supervised by one full-time Male Medical Officer.

A full-time Family Planning Officer is in charge of the Family Planning programme in this State and works under the guidance and supervision of the Director of Medical Services, Madras-6.

The target number of Family Planning Clinics fixed to be opened during the Second Five-Year Plan period is as follows :—

Urban Family Planning Clinics	..	59
Rural Family Planning Clinics ..	..	152

Family planning Clinics

So far 26 Urban and 81 Rural Centres (inclusive of the Clinics opened by Local Bodies and Private Organizations) have been opened and are functioning. Apart from these there are 44 Mothers' Information Centres and 32 Fathers' Information Centres functioning in the City of Madras. Mothers' Information Centres function from 8 a.m. to 4-30 p.m. daily (excepting on Sundays and holidays) and Fathers' Information Centres function in the evening daily between 6 and 8 p.m. (excepting Sundays and holidays). All Government Family Planning Clinics function between 8 a.m. to 4 p.m. on all working days.

In the year 1956–57 there were nine urban and ten rural clinics and in 1960–61 there are 15 urban and 77 rural clinics. Altogether 26 Urban and 81 Rural Centres are run by the Government, Local Bodies and Private Organizations.

Places for opening eight Rural Centres have been chosen but these Centres have not been opened so far for want of staff. It has, therefore, been decided that opening of further number of clinics should be taken up only after the sanctioned clinics start functioning and work satisfactorily.

Budget provision and Expenditure

The expenditure incurred in connection with the Family Planning Programme from 1956–57 to 1959–60 totals Rs. 7 lakhs. Of this amount the share of Central Government is Rs. 5·93 and that of the State is Rs. 1·10 lakhs.

For the year 1960–61, the Central Government provides Rs. 6·31 lakhs. It is expected that Rs. 12·40 lakhs will be spent during this year provided that the target of 59 Urban and 152 Rural Clinics start functioning.

All methods of Family Planning are explained to fathers and mothers and to willing fathers and mothers contraceptives are distributed mostly free. The expenditure incurred on contraceptives in 1957–58 was Rs. 1,430·29 and in 1960–61 is Rs. 63,288·65.

Recently the Government of India have liberalised the grant for distribution of contraceptives to fathers and mothers and have said that contraceptives should be distributed free to fathers and mothers up to an income of Rs. 300 and less per mensem.

Stress is laid on the surgical methods of Family Planning wherever applicable. All facilities are provided to fathers and mothers desirous of undergoing sterilization operation in Government Hospitals.

From 1959 to September 1960, 71,000 fathers and more than four lakhs mothers have been educated and advised in Family Planning in this State.

Sterilization

Every effort is being made to popularise the surgical methods of Family Planning in Madras State.

Sterilization operation is done free to all in Government Hospitals. In addition, in respect of persons with an income of Rs. 200 per mensem and below, hospital stoppages, confinement charges, cost of blood and plasma, cost of drugs, etc., are waived if they undergo the sterilisation operation in an approved Government Hospital.

Free ambulance services are provided for taking mothers willing to undergo Salpingectomy operation to the hospital and back.

Pregnant mothers who are desirous of undergoing Salpingectomy operation immediately after the delivery are admitted into the Government Maternity Hospitals a few days in advance of their due date of delivery if they desire so.

Vasectomy operation has been subsidised in Mad City and six Nursing Homes in different localities of City have been selected and approved by the Governm for this purpose. Under this Scheme, Vasectomy ope tion is performed free in these Nursing Homes for fath with three living children and more and who are desir of undergoing the operation in a private nursing ho The Surgeon who operates is given Rs. 25 per case Vasectomy performed by him under this Scheme.

Intensive Scheme

A new Scheme called the 'Intensive Scheme' popularisation of Surgical Methods of Family Plann is being implemented in Madras City and the whole Madras State. Under this scheme, fathers and moth with three living children and more (in the case of moth undergoing sterilization they should have comple 24 years of age and in the case of the fathers undergo sterilization they should not have attained the age 50 years) who undergo the sterilisation operation in one of the 48 Government Hospitals approved by Government (vide annexure) for this purpose are p a Compensatory Allowance of Rs. 30 each (either father or the mother alone should undergo the operati not both) to cover loss of emoluments and for meet conveyance charges (in respect of fathers) for to and journeys to the Hospital. For Government serva a special casual leave of six days is granted after operation. After the implementation of the Scheme number of Vasectomy operations have increased consic ably in number. The demand for undergoing Vasecto operation in the Government Hospitals is so great n so that, it was found that with the existing facilitie was not possible to operate every day on all the wait



Sri M. Bhaktavatsalam, Home Minister, at the press conference on 3rd December 1960, regarding the preparation of village production plans by panchayats.

fathers. Therefore to cope with the increased number of Vasectomy operations three full-time and one part-time Surgical Units for performing Vasectomy operations alone have been set up in the following Government hospitals in the City :—

1 Government General Hospital, Madras. } Full-time.
2 Government Stanley Hospital, Madras. } Full-time.
3 Government Royapetta Hospital, Madras. } Full-time.
4 Government Hospital and Kilpauk Medical College. } Part-time.

Salpingectomy operation under this Scheme is performed in the following three Government maternity hospitals in the City :—

(1) Government Hospital for Women and Children, Madras.

(2) Government Kasturba Gandhi Hospital for Women and Children, Madras.

(3) Government Raja Sir Ramaswamy Mudaliar Lying-in Hospital, Madras.

Sterilisation operations

In the mufassal, 44 Government Hospitals have been approved by the Government of Madras for performing sterilisation operations under this Scheme. From 1956 to September 1960, 4,948 males and 8,042 women underwent Vasectomy and Salpingectomy operations respectively in this State.

It was originally proposed to have 6,000 Vasectomy and 14,000 Salpingectomy operations performed during the three years from the beginning of the scheme. Of this, during the first year, 1,303 Vasectomy and 1,189 Salpingectomy operations were done against the targets of 1,000 and 2,000, respectively.

Till 30th September 1960, 171 Medical Officers, 173 Nurses, 44 Social Workers, 185 Health Visitors, 182 non-medical personnel and 15 Women Welfare Organisations were trained at the Family Planning Training Institute at Government Hospital for Women and Children at Madras.

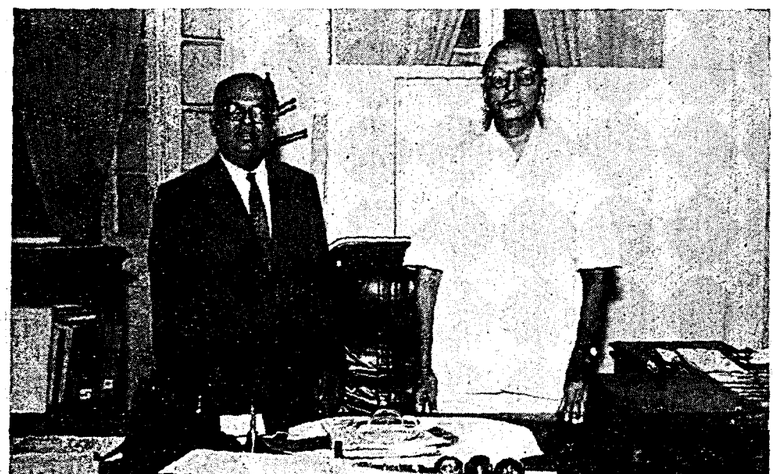
At the District Headquarters Hospital training in Family Planning is given to Maternity Assistants and Pharmacists. One hundred and seventy-two Maternity Assistants and 45 Pharmacists had been trained so far.

Education

The Family Planning staff do door-to-door propaganda educating the mothers and fathers in the necessity for adopting Family Planning for their own and their children's welfare. Mothers and fathers attending the out-patient department of the hospitals and Primary Health Centres are also educated in Family Planning. Copies of the Family Planning Manual published by the Government of Madras are sold to them. Out of five lakhs copies in English and Tamil printed, 345,795 have been sold. Recently the price of the Manual has been reduced to 12 nP. from 25 nP. for sale in the mufassal areas.

Exhibition

Family Planning stalls are held in all major exhibitions, Hospital Day and Courtesy Week celebrations, etc. These Family Planning stalls are visited by large numbers of fathers and mothers who are educated in the necessity for Family Planning by the Family Planning staff with the help of charts, models, etc. Copies of the Family Planning Manuals are sold to them in large numbers on these occasions.



The Former and Present Chief Secretaries Sri T. N. S. Raghavan, I.C.S. and Sri R. A. Gopalaswami, I.C.S. photographed on the eve of the Former's retirement.

So far nine major exhibitions have been held in the City and mufassal since 1957 up to date in all of which Family Planning stalls were opened and were of immense help in educating the public opinion regarding Family Planning.

Ad hoc Orientation Training Camps

Ad hoc Orientation Training Courses of the duration of about three to four days to fathers and mothers are conducted at Gandhigram, Chinnalapatti, under the auspices of the Avvai Rural Medical Service by trained Family Planning staff. There is a proposal to conduct similar Ad hoc Orientation Training Courses in the various parts of the State for the benefit of fathers and mothers. These courses enable fathers and mothers to get orientated in Family Planning in a short period of three to four days. There is also a proposal to set up Mobile Education Teams for training personnel in different places.

Films on Family Planning

Madras Government has produced a short feature film in Tamil on Family Planning entitled "Family Welfare" of the duration of about 33 minutes and 3,000 feet in length. This film while narrating the story of three families, brings out clearly the necessity for every individual for adopting Family Planning for his own and his Family's welfare. Similar documentary films in Tamil explaining the facilities provided by the Government for the benefit of the people, for adopting Family Planning, will be produced shortly and released to the public.

Mothers' meetings and Fathers' meetings are held separately in all Family Planning clinics, when mothers/fathers discuss Family Planning and one of them who has undergone the surgical operation explains to the others how simple, and safe the operation is and about its benefits. Such meetings are helpful for convincing fathers and mothers about the simplicity of the surgical methods of Family Planning and their harmless nature.

Literature on Family Planning

The following literature has been published by the State Government and copies are being distributed free/sold to mothers and fathers.

Family Planning Manual, English and Tamil, for sale at 25 nP. per copy in urban areas and 12 nP. per copy in rural areas.

Reports of personal experiences (English and Tamil); One Act Play—Tamil; Pamphlet furnishing a note on "Advice to be followed before and after Vasectomy operation; Advice to married persons explaining the Intensive Scheme for Popularisation of Surgical Methods"; Pamphlet containing information as to facilities made available in Government Medical Institutions, etc., for Surgical methods; Souvenirs in Tamil and English on Family Planning Day celebrated on 18th December 1959 and 18th December 1960; and Happy Family Planning Calendar.

Besides the above, seven varieties of charts showing comparative data of food consumption, family size, per capita income, etc., in India as compared with certain European Countries and District Maps showing location of Family Planning clinics were printed and supplied to all Family Planning clinics in this State.

Two thousand and five hundred strings of wooden coloured beads explaining the Safe Period Method were purchased and are being distributed in Family Planning clinics to fathers and mothers who practise the Safe Period Method.

Posters and leaflets on Family Planning received from the Director-General of Health Services, New Delhi, have been distributed to all the Family Planning clinics for display in these clinics and distribution to fathers and mothers.

Cinema Slides

Cinema slides in two varieties depicting two families in contrast to show happiness through Family Planning and unhappiness due to lack of Family Planning have been prepared and will be shown in all Cinema Theatres in the State.

Government of India have been addressed for the sanction of a Mobile Propaganda Unit equipped with necessary propaganda materials for going round and educating people in Family Planning especially in the rural parts.

Research on Sub-fertility Scheme is being carried on under the guidance of Dr. M. K. K. Menon, Director of Institute of Obstetrics and Gynaecology, Government Hospital for Women and Children, Madras.

The State Family Planning Board was constituted on 18th July 1956. The Co-ordination Committee of the State Family Planning Board was constituted on 7th May 1957.

The State Family Planning Board meets as often as necessary and offers valuable suggestions to the Government for further progress and implementation of Family Planning Schemes.

The Co-ordination Committee on Family Planning meets in Madras City every quarter and reviews the progress made in Family Planning in the City in the quarter and gives suggestions for achieving further progress.

List of approved Surgeries

North Arcot

Government Headquarters Hospital, Vellore.
Government Hospital, Tiruvannamalai.
Government Hospital, Gudiyatham.

South Arcot

Government Headquarters Hospital, Cuddalore.
Government Hospital, Villupuram.
Government Hospital, Chidambaram.

Chingleput

Government Headquarters Hospital, Chingleput.
Government Hospital, Conjeevaram.

Salem

Government Headquarters Hospital, Salem.
Government Hospital, Krishnagiri.
Government Hospital, Dharmapuri.
Government Hospital, Attur.

Coimbatore

Government Headquarters Hospital, Coimbatore.
Government Hospital, Erode.
Government Hospital, Gobichettipalayam.
Government Hospital, Tiruppur.

Tiruchirappalli

Government Headquarters Hospital, Tiruchirappalli.
Government Hospital, Karur.
Government Hospital, Pudukkottai.

Thanjavur

Government Headquarters Hospital, Thanjavur.
Government Hospital, Nagapattinam.
Government Hospital, Kumbakonam.
Government Hospital, Mannargudi.
Government Hospital, Mayuram.
Government Hospital, Tiruvarur.

Tirunelveli

Government Headquarters Hospital, Palayamkottai.
Government Hospital, Tuticorin.
Government Hospital, Ambasamudram.
Government Hospital, Nanguneri.

Ramanathapuram

Government Headquarters Hospital, Ramanathapuram.
Government Hospital, Srivilliputhur.
Government Hospital, Virudhunagar.
Government Hospital, Aruppukottai.
Government Hospital, Rajapalayam.

Madurai

Erskine Hospital, Madurai.
Government Hospital, Dindigul.
Government Hospital, Periakulam.
Government Hospital, Palni.

The Nilgiris

Government Headquarters Hospital, Ootacamund.
Government Hospital, Coonoor.
Government Hospital, Kotagiri.
Government Hospital, Gudalur.

Kanyakumari

Government Headquarters Hospital, Nagercoil.
Government Hospital, Padmanabhapuram.

Madras City

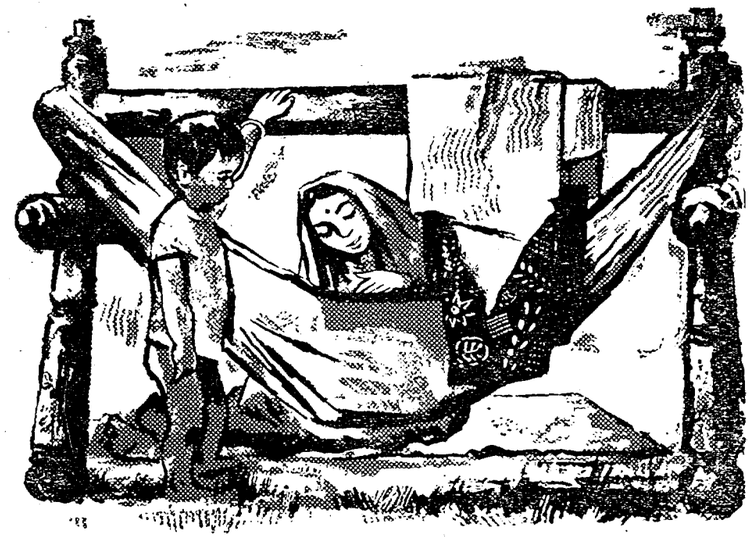
Men—
Government General Hospital.
Government Royapetta Hospital.
Government Stanley Hospital.
Government Hospital and Kilpauk Medical College.

Women—
Government Hospital for Women and Children, Egmore.
Government Kasturba Gandhi Hospital, Triplicane.
Raja Sir Ramaswamy Mudaliar Lying-in Hospital.



Dr. Theodor Heuss, former President of the Federal Republic of Germany presenting to the Chief Minister a cheque for Rs. 17,100 towards flood relief work on 16th November 1960.

a new life



'Do you not hear the entrance of a new theme?'
Do you not hear the asserting cry of the newborn,
see myriad men rise to work;
to build, to wield the power of the sun?

Fashioning life, making a world that offers a little more:
a little less of the care, a little more of the joy.

Yes, you feel the awakening—
an ancient nation sheds the stagnation of the ages.

TODAY, as in the past, our products help to make homes cleaner, healthier, happier. But today we are also working for . . .

TOMORROW, when the evergrowing urge for better living will demand still greater efforts. And we shall be ready with wider service, new ideas, new products . . .

Today and Tomorrow... Hindustan Lever serves the home

PR.2-1.5

TRANSPORT OF FRESH FISH

By SRI S. T. CHARI, B.SC., A.R.I.C., *Superintendent, Fisheries Technolcgical Station, Tuticorin.*

There has been a considerable improvement in the landings of marine as well as fresh water fish in India as a result of the implementation of fishery development schemes in the Second Plan. Marine fish landings alone amounted to 800,000 tons in India in the year 1956. Madras State has a coast line of 620 miles and above 400,000 acres of inland waters. Our production of sea fish amounts to 50,000 tons and the Kanyakumari district with coast line of 42 miles only stands foremost in the matter of marine fish catches.

The increased production of such a perishable commodity like fish has a significance only when the produce reaches the consumer in a prime quality at a reasonable price. This could be achieved by preventing the produce from bacterial spoilage at the source, during transport and its subsequent marketing. It is estimated that the spoilage of fish or marketing of inferior quality of fish accounts for 20 to 25 per cent to the total landings in India. This wastage could be prevented by adopting improved, packaging handling and efficient system of transport. This aspect of the problem brings to the fore a number of other factors like facilities for icing of fish at a low cost, insulated fish carriers, fast moving vehicles, cold storages and marketing facilities at the other end and finally consumer preferances. All these operations are inter-related and are of equal importance for providing the consumer with a quality product. In this chain of efforts, the fisherman who is the primary producer, the middleman, the carrier, and the salesman have to work efficiently to realise this objective. Adequate icing and packaging and efficient system of transportation by rail or by road in insulated trucks, play a significant role in saving the perishable commodity like fish, and are directly linked with the economy of our country.

The present conditions of the handling, transport and marketing of fresh fish is far from satisfactory. While tangible results have been obtained in the matter of improved landings of fresh fish by use of modern craft and gear, the marketing aspect of the fishing industry has not kept pace with such a development. This is primarily due to the conservative nature of those engaged in the trade who prefer to employ the age-old practices of transporting fish without icing or chilling it and not observing the hygienic methods in its handling and marketing while eager to get better returns. The Madras State has recently installed two ice plants-*cum*-cold storages mainly for use of the fishermen to save their perishable commodity and ice is sold at a low price. Facilities are also provided to store their fish in the cold storage so that the fisherman can conveniently market his produce and thus regulate it during seasons of glut and save his commodity which otherwise would have to be thrown off as spoilt fish or converted into inferior quality cured products. The consumer also benefits by such a procedure in that he gets his fresh fish in prime quality at the proper time and there is a greater quantity of good fish to go around the people. The Railway authorities have also recently introduced refrigerated fish van on long distance routes in the South.

At present the movement of fresh fish from the coastal area is mostly confined to short distances to inland areas and big towns. There is a large movement of fish on cycles and head-loads. Cyclists carry about 120 to 150 pounds of fish at the rear to a distance of 30 to 35 miles. The containers generally used by the trade are baskets, gunny bags and wooden cases. It may be stated that practically no ice is used in such transport by cycles or head-loads. The result is that the fish reaches the consumer in an advanced state of spoilage and the fishermen are also put to a great loss which they could have prevented with advantage had they only used ice for preservation and chilling during transport.

The problem of how best the situation could be remedied is engaging the constant attention of the Fisheries Technological Station, Tuticorin. While ideal suggestions of a far reaching and everlasting nature have been worked out and can be given, it was felt that as a first stage of development some improvements can be made in the existing mode of transport in cycles without at the same time upsetting the economy of the trade. Experiment conducted at our Laboratories using indigenous fish basket showed that fish and ice in the proportion of 1 : 1 considerably enhances the quality of the fish that has to be carried to a distance of 35 miles and the net profit by such trial consignments was 20 per cent greater than what would have been possible in the ordinary mode of transport and marketing as it is to be remembered that in the latter case the quality was poor and the risk of fish getting inedible was always there. By such a procedure laboratory tests showed that the fish can remain in a good condition up to 18 hours after landing. As a further improvement on this plain icing, the baskets were lined with wet gunnies, over which a 300 gauge polyethylene film (the cost of which works out to 0-50 nP only for one basket) was laid with a few punched perforations to allow the melted ice water to run out and over this another wet gunny was placed. The fish and ice in layers in the proportion of 1 : 1 was packed in this as usual and transported in cycles to the same distance of 35 miles where it was marketed. This has not changed the size, shape or the carrying capacity of the baskets. The fish reached the market at the other end in a very good condition as judged by chemical and organoleptic tests and the returns were greater for the fishermen. The fish can be made available to the consumers over longer periods at the market as the melting of ice could be delayed by another four hours. The polyethylene film can be used over and over again. It is hoped that those engaged in the fresh fish trade would take up to this as a first step in their improvement in the marketing of fish resulting in better return to themselves, and also save a large volume of highly nutritious food from wastage.



A scene from a dance drama organised by of Stri Sadana and Vigilance Home.



The anniversary Celebrations of Stri Sadana and Vigilance Home were held on 15th November 1960. Photo shows a section of the audience witnessing the variety entertainment got up on the occasion.

Report on the working of the Plantations Labour Act, 1951, for the year 1959.

The Plantations Labour Act, 1951, applies to all tea, coffee, rubber and cinchona plantations which admeasure 25 acres or more and wherein 30 or more persons are employed. The Act regulates the working conditions of workers in plantations and provides for the provision of drinking water, adequate medical facilities, housing accommodation, recreational and educational facilities, etc. The provisions regarding proper maintenance of latrines and urinals and provision of canteen, creches and recreational facilities to plantation workers were brought into force from 1st December 1958 onwards. The notification under Rule 68 of the Madras Plantations Labour Rules, 1955, prescribing the supply of two cumblies to every worker free of cost once in a year has been continued for the year 1959 also. During 1959 the Government also ordered that one rug should be supplied to the members of the staff in every 12 months at the beginning of the cold weather.

The provisions of the Act were enforced by the Commissioner of Labour assisted by the Chief Inspector of Plantations, Madras, and five Inspectors of Plantations.

There were at the end of the year 1959, 262 plantations employing 73,098 workers covered by the Act. There were 129 tea plantations employing 59,881 workers, 112 coffee plantations employing 12,606 workers, 16 rubber plantations employing 1,540 workers, three cinchona plantations employing 2,379 workers and two cardamom plantations employing 61 workers.

All the plantations excepting one was inspected by the Plantation Inspectorate.

All the 262 plantations have provided adequate drinking water facilities to the workers.

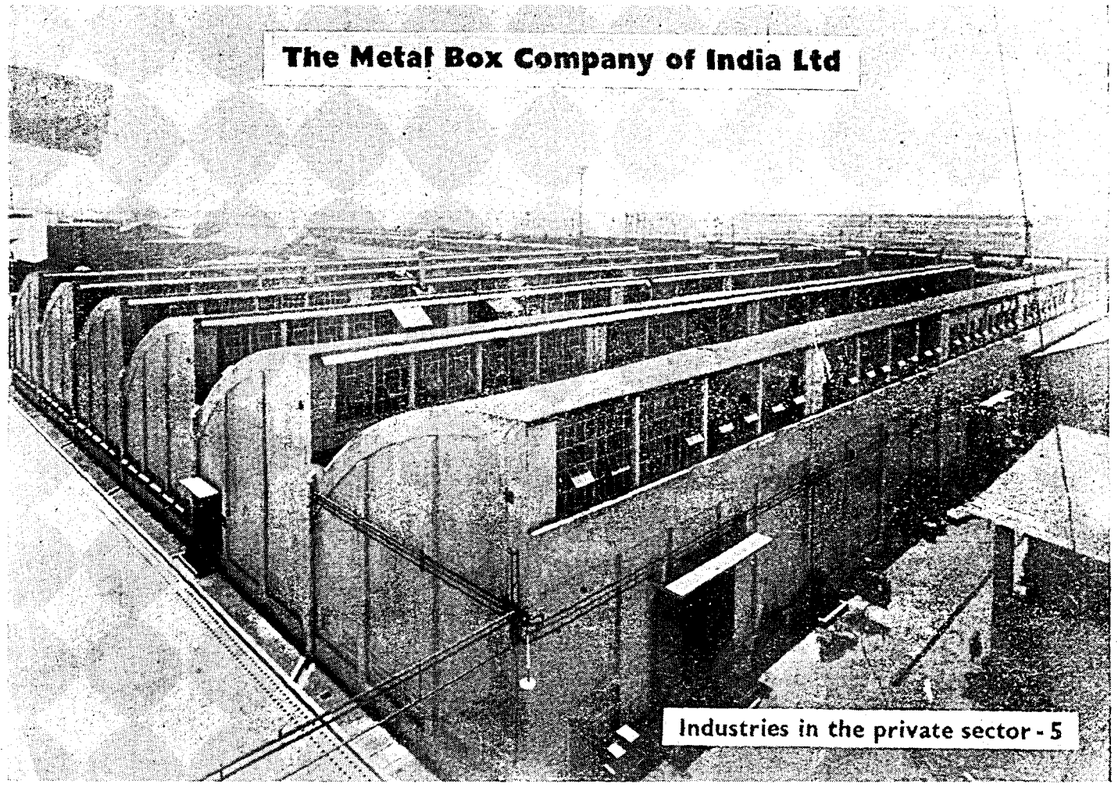
During the year under review the schemes for providing medical facilities to workers were received for the approval of the Government. Twenty-nine schemes in respect of 53 plantations (including the schemes received during the previous year) were approved by the Government during the year under review.

Eight housing schemes for plantation labour have been approved during the year under report. Most of the housing schemes received during the year were found defective and therefore the managements were advised to submit revised housing schemes. Four prosecutions were launched for non-compliance of the provisions of the housing scheme during the year. In most of the cases final warnings have been issued against the defaulters.

The Government have sanctioned during the year loans to the extent of Rs. 92,160 to two planters for construction of 48 houses. A sum of Rs. 1,59,140 has been disbursed to the planters so far. The construction of 107 houses has been completed and the construction of 48 houses has reached the plinth level. The planters have not come forward in large numbers to take advantage of the loan assistance extended to them by Government. The Commissioner of Labour has instructed the Inspectors of Plantations to take all persuasive steps to advise planters in taking advantage of the loan assistance.

Thirty-three thousand, five hundred and forty-seven men, 35,120 women and 1,064 young persons were granted leave with wages.

A sum of Rs. 4,23,899·00 was paid as maternity benefit during the year in respect of 7,323 claims preferred as against Rs. 4,18,894·00 in respect of 7,326 claims in the previous year.



In 1933, when the world was still in the grip of the great economic depression, and industrialists were on the defensive, playing safe, the Metal Box Company, Limited, London, established their first overseas company. The Metal Box Company of India, Limited, in Calcutta. Prior to this, the only form of metal package made in India was the four-gallon kerosene oil tin manufactured to the most part by the Oil Companies' installations and an insignificant quantity of small plain tins. There was no quality lithography on tin-plate or aluminium. Industries which required highly-finished and decorated metal packages for their products were not many and they depended on imports for their packaging requirements.

Early beginnings

Having commenced operations in 1933 with only a handful of men, The Metal Box started producing quality containers, comparing favourably with those available in other parts of the world. Packers of consumer goods welcomed the productions of the Metal Box, for hitherto their products had been at a heavy disadvantage *vis-a vis* imported goods packed in superior containers. It greatly stimulated demand and made it possible for many new suppliers of consumer goods to compete successfully (in a market previously dominated by imported goods. To meet the increasing demand, the Company's activities expanded from one small factory employing 35 people to six factories two stategically located in Calcutta and one each at Bombay, Delhi, Madras and Mangalore) and six ancillary establishments employing over 5,000 people. And today they serve more than 1,000 factories employing an estimated number of 80,000 people and marketing goods to the value of over Rs. 100 crores.

The company commenced its working in Tondiarpet, Madras, in 1948 with but a handful of staff. Now the staff number about 550. The capital of the company at Madras is about Rs. 5.75 crores. And out of the total production, only a small percentage of materials is imported from foreign countries.

As a result of the improvement in the packaging industry, mango segments preserved in open top cans taste just as delicious in December as in April months after the luscious fruit is packed. Open top cans today carry Nagpur oranges

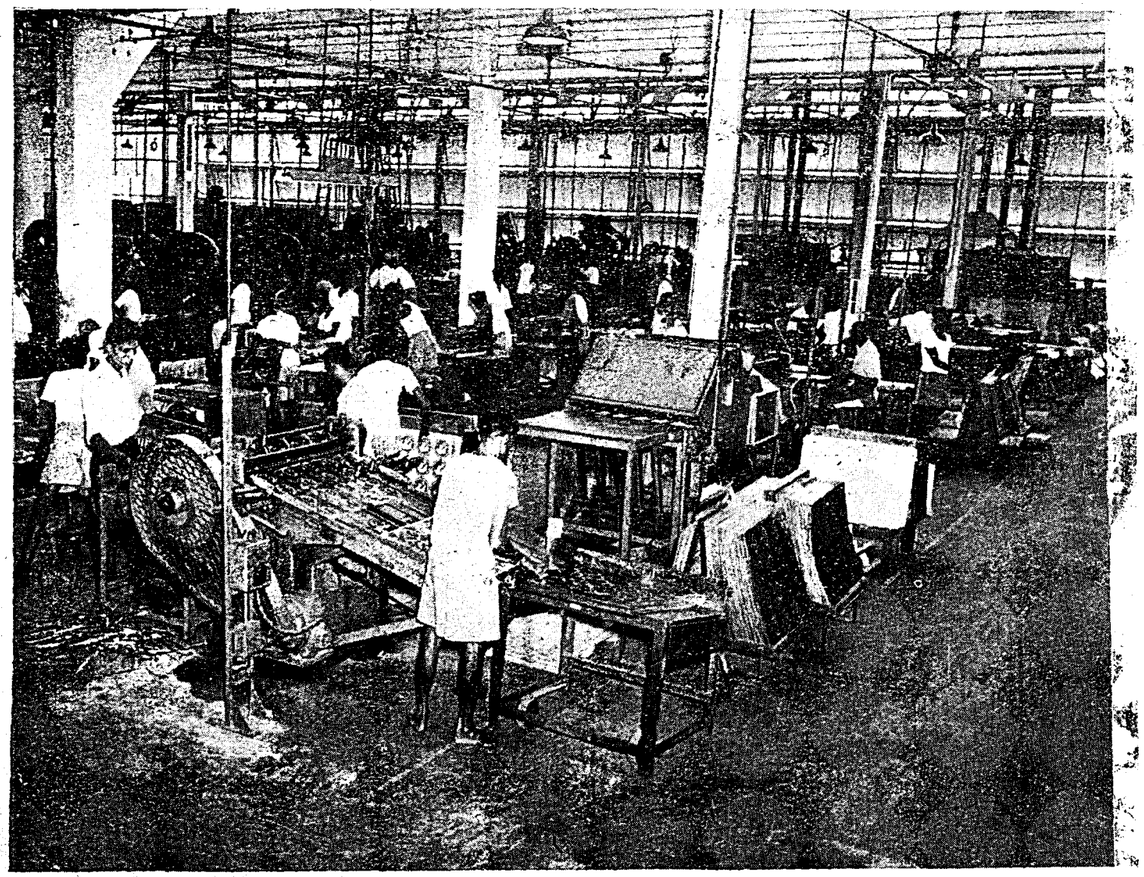
to Madras and Malabar abroad to America. Cashewnuts has become the second largest dollar earner for India. U.S.A. alone buying Rs. 11 crores worth every year as the major problem of keeping the nuts fresh was solved by a special gas sealed container which keeps them crisp and full of flavour for long periods. The Metal Box are also taking a direct part in the country's drive to earn foreign exchange by rapidly expanding the export of containers, closures, hardware and publicity media.

Wide range of products

Scientific packaging enabled efficient distribution of goods, found new markets for them and generated the necessary incentive for greater production. Thus the Metal Box Company of India, Limited, have earned a place of importance in India's economy.

Backed by their knowledge and experience drawn from India and abroad, they are manufacturing a wide range of products: Open top cans for processed fruit, vegetables, fish and dairy products, generally line containers for confectionery, tea, biscuits, baby foods, edible oils, paints, insecticides, medicinal products, toilet powders, etc., collapsible tubes for toothpaste, ointments and adhesives, crown corks for carbonated drinks, R.S. closures for bottled products, rigid rubes for pills, industrial components including covers for and regulators, and house meter, hub caps for automobiles, chains and transformer cand for radios, lead capsules for insulators, parts for duplicators, publicity materials including advertising tablets and calenders, plastic products including diotheni bags, foil laminate packets and infection mouldings, hardware including trays,

Photographs facing each other give an idea of the factory at work.



tablemats and insecticide sprayers, and machineries including can closing and reforming and bottle sealing equipment.

Meticulous care

Several factors are taken into account in the designing of a container for any product. Precisely what material should be used ? How best can it be printed and fabricated ? Will it stand the rigours of the climate and provide long shelf life for the product? Every aspect is probed into. The containers should be strong yet light, should be pilferproof and attractive. Above all, it should be chemically inert to the contents it packs. Wherever necessary a specially devised chemically inert lacquer coating is given. Containers should protect contents such as toothpaste from oxidation and dehydration. In respect of crown corks, R. G. closures and the other pre-screwed caps the was or caplinar ised as a sealing gasket should be so constructed and fitted that it should not react with the contents, nor in the case of carbonated drinks allow gas pressure to escape.

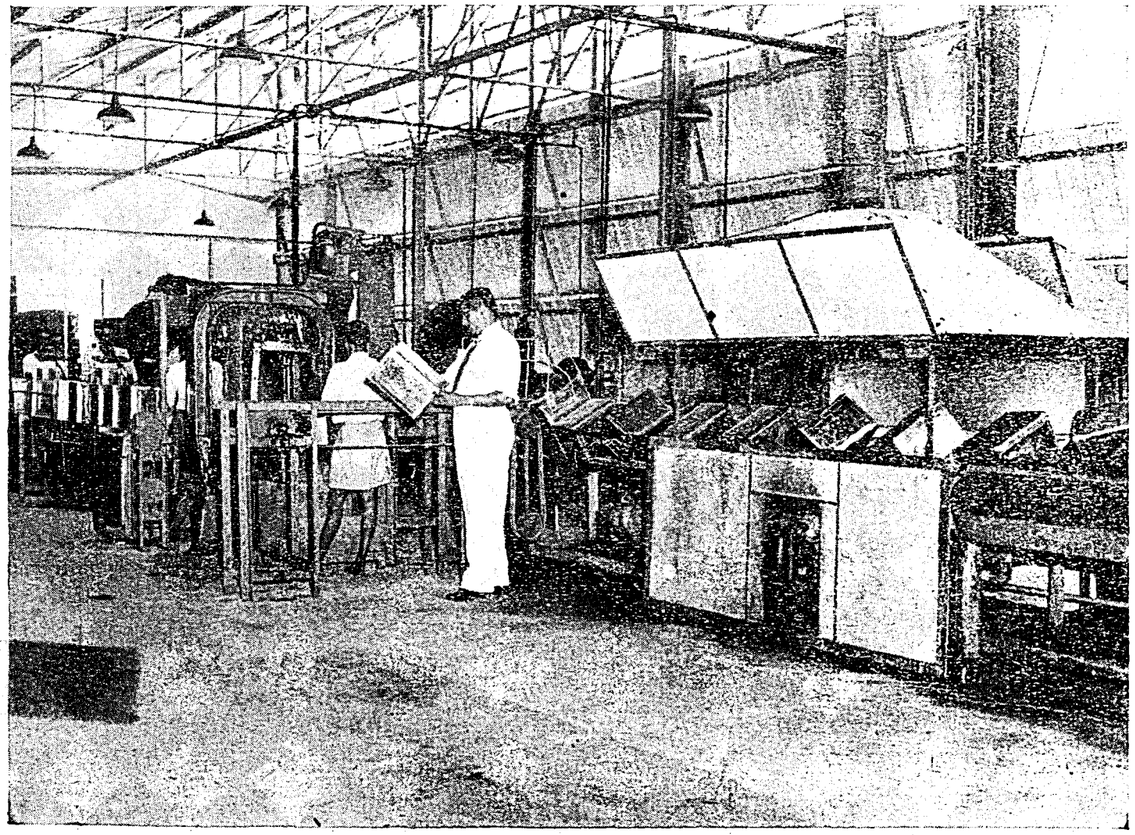
When once the type of container is designed, the control design studio through their artists, recommend attractive design. The tinplate or aluminium sheets are then printed by offset lithography and they are subsequently fabricated to the required shape. They are then sent to the packers who pack their products and display them in the market for sale.

Labour Welfare

The welfare of the employees is also looked after well. Every year promising young men are sent abroad to learn more about the industry of this sort so that they could contribute more to the company's activities. The working conditions are good and the company has developed a successful system of joint consultation with the employees. The company has also instituted welfare and benevolent schemes and has provided extensive recreational facilities.

All participate in their production bonus scheme and all employees share in their annual prosperity bonus.

In the years that lie ahead the country is bound to go through a place of great expansion in the production and export of consumer goods which would automatically place burden on the packaging industry, and the Metal Box Company of India, Limited, it is hoped, would leave no stone unturned to successfully meet the demands.





Release of Children's books by Mr. Justice P. S. Kailasam at Children's Theatre on 12th November 1960.



Some children earnestly going through some of the books displayed at exhibition of children's books got up on the occasion.



Sri C. Subramaniam, Finance Minister, inaugurated the Second prize bond draw at Rajaji Hall on 1st December 1960.

Studded with delicious spots for picnics and sights

MADRAS STATE

is just the place for you,

an enthusiastic globe-trotter,
an over-worked official,
an active business executive,

to get the needed rest combined with pleasure.

A LAND OF TEMPLES

to satisfy the pious, it also abounds in varied attractions :

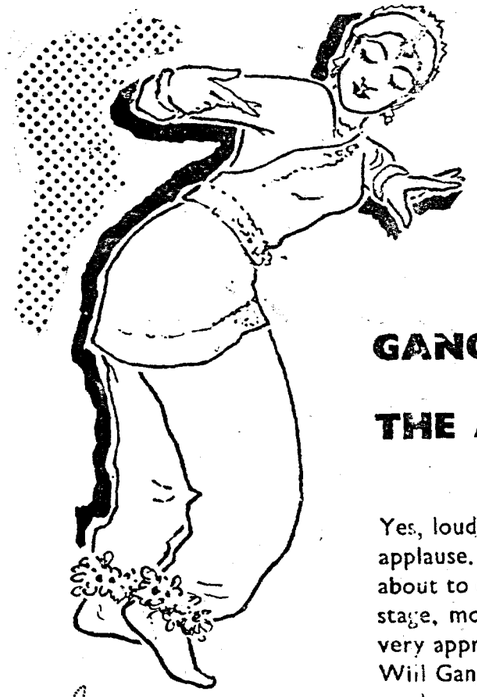
** *Exhilarating hill-stations*
** *Excellent sanctuaries*
** *Eximious places of Art*
** *Exemplary Architecture*
** *Exquisite centres of Beauty*

A visit to the State is worth all your trouble

NOT TO SEE IT IS TO
MISS A TREAT IN YOUR LIFE



Registered No. M-4767



GANGA GETS

THE APPLAUSE...

Yes, loud & continuous applause. When she was about to enter the stage, mother was however, very apprehensive. Will Ganga also swoon from weakness as did the neighbour's daughter the other day? Father brushed her fears aside saying, she is brought up on



SeaGold

BLENDED

SHARK LIVER OIL

Manufactured by

GOVERNMENT OIL FACTORY, CALICUT

(A Kerala Government Concern)

SISTA'S

PRINTED BY THE CONTROLLER OF STATIONERY AND PRINTING, MADRAS, AND EDITED AND PUBLISHED

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MADRAS INFORMATION

ANNUAL 1961

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P. P. I. VAIDYANATHAN, BAR-AT-LAW, I.C.S.,
Commissioner of Land Revenue and Food Production.

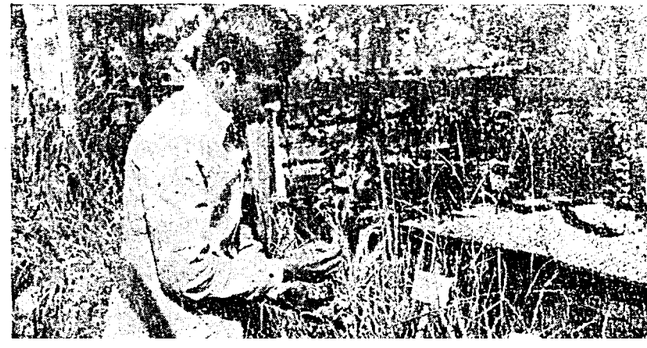
DURING the last fifteen years we have become very sensitive to our food situation. Self-ufficiency in food has become an ideal and even slogan, but like other ideals and slogans, self-ufficiency has remained extremely vague and lusive, so much so that we may not even know hen we have achieved or passed the self-suffi-ency mark. It is therefore necessary to give reater precision to the concept and this can be one by briefly reciting the salient features of ur food and agricultural situation.

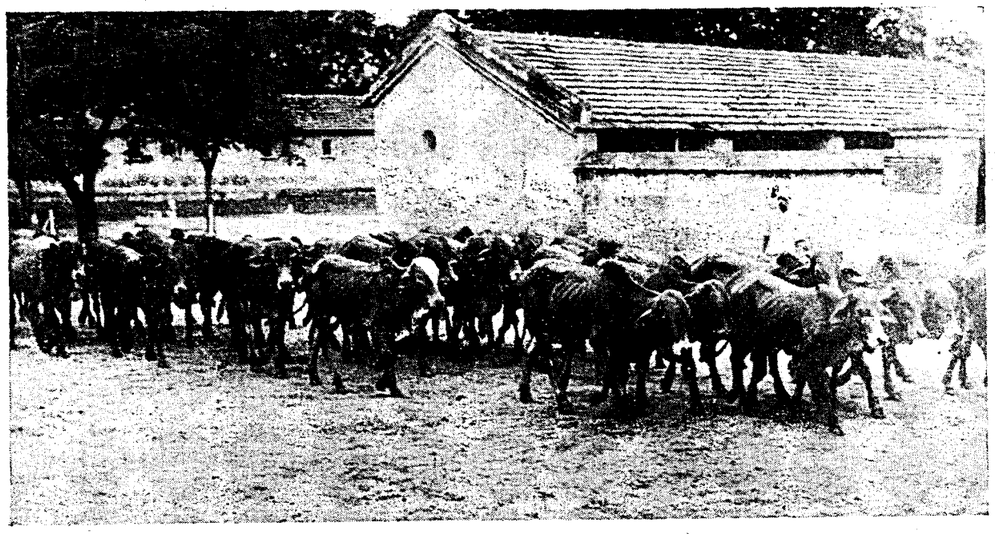
The first thing to remember about self-sufficiency that it can be thought of for India as a whole nd not for a State or a district. Roughly speak-g, we are producing more or less all the food that needed for our consumption. This should be , for such a large population cannot import any ubstantial proportion of the food needed. Taking ndia as a whole our actual production of food-rains was about 52 million tons in 1951–52 and it as steadily increased to about 65 million tons in 955–56 and today it is about 73 million tons. In 951, the import was about 7 lakh tons and it was rought down to nil in 1956, but it has again been epped up now to a sizable figure. So, it will e apparent that the real deficit in this country is arginal, being of the order of one or two million ns out of the present consumption of 75 million ns, i.e. less than 3 per cent. The general public eling on food situation is very much like that of r. Micawber towards his finances. Just like r. Micawber we say that if our production is 65 million tons and our consumption is 64 million tons, we experience the heights of joy; but if the consumption goes up to 66 million tons, we are thrown into depths of misery. The real truth is that there is no justification either for the heights of joy or for the depths of misery in the two situations.

Food Habits

The second fact which should be taken note of is that foodgrains are made up of different items which are not inter-changeable. What we call foodgrains consist of rice, wheat, millets, and pulses. But our food habits are such that it is quite possible to have a famine of rice when there is too much wheat, and it is equally possible for wheat-eaters to experience acute scarcity when there is a glut in the rice market. Due to climatic reasons, we in Madras can never be self-sufficient in wheat, and it is not worth trying to be so, either. So utlimately self-sufficiency in foodgrains

Hybridization in paddy research being done at the Agricultural College, Coimbatore, which teaches students new methods in agriculture.





Sindhi herd at Hosur Cattle Farm

will break up into two separate pockets of self-sufficiency in wheat and in rice, and there may also be other minor pockets such as ragi and cholam.

Variable production

A third feature of our food position is that our production is highly variable. The average rice crop of Madras during the last decade used to be about 21 lakh tons and in an exceptionally favourable year, it could go up to 30 lakh tons. The variation is of the order of 30 per cent for this State. For India taken as a whole, a bad year often meant a rice crop of 22 million tons and a very good year meant a crop of 27 million tons, the variation thus being more than 20 per cent. If the country is really self-sufficient in the matter of food with a comfortable margin, the effect of the monsoon will not be felt on the food situation; but unfortunately, when we are barely self-sufficient, a variation of about 20 per cent in the production is a serious factor which can upset all our calculations.

Rise in consumption

A fourth feature about our food situation is that the consumption appears to rise considerably. It is generally assumed that the demand for food is inelastic, because the people cannot eat more food in times of prosperity. That may be true of economically advanced countries; but in an underdeveloped country, the demand for food is highly elastic. Thus in 1951, the total foodgrains available was 55 million tons which included an import of 4 million tons. Five years later, the production had gone up to 65 million tons; but still there was a deficit of a million tons. We may make an allowance for the increase in the population of about seven per cent during these five years; but that does not account for the increase of about 20 per cent in the demand for foodgrains. So all planning has to take into account the fact that the consumption is also rapidly increasing. What the rate of this increase is, is anybody's guess. My own guess is that during the next decade, with the rapid industrialisation taking place and the general increase in the standard of living, the demand will rise at the rate of 4 per cent every year. This will be due to an annual increase of population of about 2 per cent and an annual increase in the per capita consumption which would account for another 2 per cent. This is more or less our experience during the last 5 years when the demand has risen from 55 to 66 million tons, i.e., at the rate of 4 per cent per annum.

Buffer stocks

The position is further complicated by the existence of a large carry over of foodgrains from year to year. We know that large quantities are held over from one year to the other and this is economically necessary in order to iron out the differences in production from year to year. But unfortunately we do not have any precise data on the quantities which are kept by the trade, and by the better type of farmers, and we know still less about the circumstances under which these stocks appear on the market. The result is that it is quite possible to have a heavy crop one year and still feel the pinch, because a good portion of stocks was held over. The opposite may also happen although this is probably less likely.

So in the ultimate analysis self-sufficiency in foodgrains is a complex thing. It will not be achieved by merely producing as much foodgrains in one year as is normally consumed; but self-sufficiency can be achieved if over a period of years the average production of each crop is equal to the average demand and also allows for reasonable buffer stocks held by Government or the trade or the producer. Once this stage is reached, we will hear less of the food problem than we are doing now and the aim of all our planning has been to reach this level of production.

Increased Production

The next question which will naturally arise is whether we will be able to achieve this increased production. Our experience has shown that a large increase in agricultural production is possible if the cultivator co-operates. The methods by which the increase in production is to be brought about are not anything extraordinary but the practices usually followed by the better type of cultivators. I shall give only one example. The average production of rice per acre in Madras State is 1,300 lb. The corresponding all-India average is 816 lb. It would thus be seen that the average Madras cultivator is producing about 50 per cent more than the average Indian farmer and the conclusion follows that if the rest of India can adopt the same agricultural practices as are being done by the average Madras farmer, our deficit will be wiped out overnight. The analogy may be extended further beyond India. The average production of rice in India is 816 lb. per acre; whereas in Australia, it is 3,500 lb; in Italy and in Spain it is abou. 3,000 lb. Apart from these countries, even countries like Egypt and China show an average yield of 2,935 lb. and 2,337 lb. respectively. Pessimists may say that we cannot achieve the Australian or Italian level but certainly the average levels of production now prevailing in Egypt and China are well with in our reach, if only we exert ourselves. Moreover, only limited new resources are necessary for this purpose. With agricultural extension work intensified as is being done now, a doubling of the food production in India within the next 20 years can normally be expected.

Statistics of Production

There may be sceptics who may not readily accept the statistics of production during the plan period. But agricultural statistics of a time before planning was thought of may give an indication of the way things are moving. I shall compare the actual production figures for rice in the areas which comprise the present Madras State for a period of 4 years ending in 1942–43 and another 4-year period ending in 1958–59. From the climatic data available I can safely state that the average seasonal conditions of these 4-year periods were almost identical and so comparision of these two averages may give an idea how far we have progressed in our march towards self-sufficiency during these 16 years.

During the period 1937–42, the average production of foodgrains in the areas now comprising the Madras State was 37·37 lakh tons. This was less than the consumption and there was an average net import of 1·35 lakh tons every year. During

Woolsheep herd at Hosur Cattle Farm



the four-year period ending 1954–58, the average production of foodgrains in the present Madras State was 46 lakh tons and there was a net export from the State, mainly towards Kerala, of about 2·30 lakh tons every year. So during the last decade, we have transformed ourselves from the position of a deficit State with a deficit of 1·35 lakh tons to a surplus State of 2·30 lakh tons. Of course, this state of affairs represents the conditions in a really good agricultural season. Moreover, this change has not been brought about uniformly, but we seem to have crossed self-sufficiency line some time in 1954–55.

Growth of population

It should also be remembered that the population of our State has been steadily increasing at the rate of 1·4 per cent every year. This means that if the consumption of foodgrains is to be maintained at the same level, there should be an annual increase in production of 1·4 per cent. So we have been able to achieve not only this 1·4 per cent annual increase, but in addition to that we have been able to fill up the deficit, and even go beyond it and show a small surplus of 2·3 lakh tons.

During the First Plan, Madras State increased the production of foodgrains from 38 lakh tons to 44 lakh tons per year. During the Second Plan the level of production rose from 44 lakhs to 52 lakh tons; in other words our level of food production increased by 6 lakh tons during the First Plan and 8 lakh tons during the Second Plan, i.e., a sustained increase of about 4 per cent per annum, during this 10 year period. It might also be noted that this increase is not due to any change in the seasonal conditions, as separate allowance has been made in the statistics for the variations in the monsoons.

During Third Plan Period

We have now prepared fairly precise plans for the Third Plan period. We assume that the rate of increase of population may be even as high as 2 per cent per annum. We also assume that the general standard of living will increase by another 2 per cent per annum and thus there will be an overall increase in consumption of 4 per cent each year. To-day Madras State is consuming about 50 lakh tons of foodgrains out of a total production of about 52 lakh tons. If the rate of increase in consumption is 4 per cent per annum we would be consuming about 60 lakh tons at the end of the Third Plan and the target of an increase of 10 lakhs would maintain the *status quo*. But we have worked out the target of an increase of about 15 lakh tons so that we may have an ample margin to make up for adverse seasonal conditions, and if the season is good, to allow for liberal contribution for meeting food requirements of neighbouring States which are yet saddled with a large deficit.

Our target now is self-sufficiency in a year when the seasonal conditions are unfavourable, and we hope we would reach this goal by the end of the Third Plan.

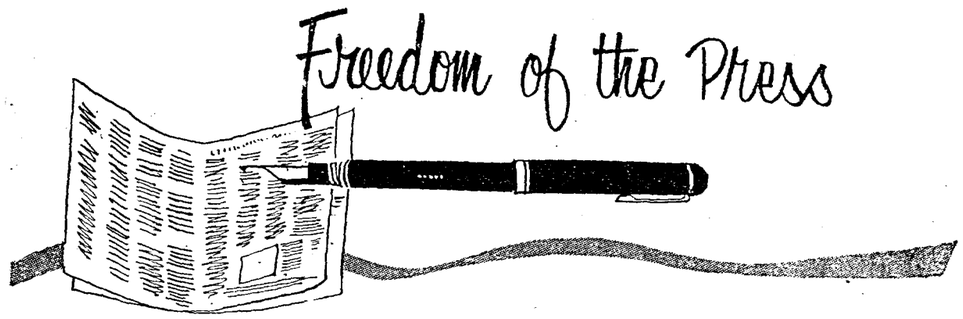
INDIA'S FIRST WATCH FACTORY

Work on the first watch factory in the public sector has been inaugurated in Bangalore.

To start with the factory will turn out 65,000 watches in the first year. Soon, output will go up to 240,000 and with an increase in shifts, the turnout can be made even larger to meet the needs of the market.

A Japanese company is giving technical help for the project. In four years' time, over 80 per cent of the components will be obtained from home production.

The watch factory will be an auxiliary to the Machine Tools factory, Bangalore.



V. K. NARASIMHAN,
Assistant Editor, "The Hindu".

FREEDOM of the Press has been regarded as one of the fundamental freedoms vital to the successful functioning of democratic institutions. A great American democrat said that if he had to choose between giving up a free press or popular Government, he would give up popular Government and retain a free press. This, of course, represents a purely hypothetical choice because it is unlikely that a Government that is not democratic will tolerate for long a genuinely free press. But in placing a free press above democratic Government what Jefferson meant to convey was that so long as the Press is free, there is a powerful means of correcting abuses in any Government. Where the Press is in chains, there is no limit to tyranny.

The question naturally arises: "Does this mean that there shall be no checks on the freedom of the Press at all in a democracy?" A distinction must clearly be made between a freedom that is fundamental and a freedom that is absolute. It is implicit in the nature of all social rights and obligations that they cannot be absolute even when they have to be largely invoilable. When we speak of fundamental rights—and include freedom of speech and of the Press as one of them—what we really mean is that these rights are so important to the preservation of the individuality and integrity of the citizen that any restrictions on them must be clearly defined and must be justifiable in terms of overwhelming public interest.

It will be seen that the fundamental rights listed in Chapter 3 of the Indian Constitution are subject also to limits which are defined in that Chapter. That in some cases the provisos attached to the fundamental rights are of such a character that the fundamental right ceases to be fundamental, can be easily argued. It may also be argued that in a developing society a rigid definition of fundamental rights may create embarrassing problems for Governments and Legislatures and make them dependent, as has happened in the United States, on judicial interpretation for an enlargement of their powers.

Fundamental Rights

So far as 'Freedom of the Press' is concerned, the Indian Constitution does not, in terms, lay it down as a fundamental right in the manner in which it is laid down in the American Constitution. At the time the Indian Constitution was being drafted, members speaking for the Press urged for the specific inclusion of freedom of the Press as a fundamental right but it was argued by Dr. Ambedkar and others that the clause "freedom of speech and expression" embraced also the freedom of the Press. While this is correct so far as publication in the Press is concerned, the wider interpretation given to the term Freedom of the Press in the United States as including the right to information and the right of access to sources of information cannot obviously be read into the clause as embodied in the Indian Constitution.

Speaking purely from the point of view of the general public, which, in a sense, is the ultimate repository of political power in a democracy because it has the right to choose its legislators and rulers, it should be realised that without a really free Press the freedom of choice for the electorate may become utterly meaningless. The electorate in a democracy can exercise its rights periodically only if it is kept fully informed of the acts of omission and commission of the Government in power and has all the data on the basis of which it can form judgment about the performance of the Government. A free Press becomes thus vital to the functioning of democracy because without it the voters will have no means of knowing what is being done by the legislators and Ministers and the lapses or otherwise of those exercising power as representatives of the people.

Political Aspect

This, of course, is only one aspect of the freedom of the Press—the political aspect. In this sphere press freedom must mean the largest amplitude of freedom to give information to the public and to criticise the acts of authority.

That, by and large, the Indian Press has had this freedom during the past ten years cannot be doubted, but doubts have been raised by no less a person than Mr. C. D. Deshmukh whether the drift towards a socialist pattern in the country is compatible with the survival of a free press. The increasing dependence of the Press on Government advertisements and the subjection of newspapers, in their operations, to various controls with regard to quotas and licences for imports of newsprint, of machinery, and the like, which are incidental to a planned economy, create problems for the Press which are not present in the United States or the United Kingdom, or even in Japan, which has the most developed press in Asia.

Dangers of Dependence

Because the Indian Constitution severely limits the powers of direct control over the press which the Legislatures or the Government can exercise the danger is all the greater that subtler and unperceived methods of influencing the Press may be adopted or the Press may tend to become an uncritical supporter of the powers-that-be as a condition of survival. There are no easy means o safeguarding the Press against either of thes dangers. The remedy in either case lies primarily in a strong and lively public opinion which looks upon the freedom of the Press not as a prerogative of those who run the newspapers but as the instrument of the public's own freedom to know and to judge. Very often discussions about press freedom have concentrated on the rights of those who conduct newspapers or of the journalists who work for the papers, but what is really involved is not so much the right of certain persons to publish or not to publish certain things—although that is important in itself—but whether the public should be permitted or not to receive certain facts or opinions. The difference between the press in a free country and the press in a totalitarian country is that while in the former the public has potentially, if not in actuality, access to information about all aspects of any problem, in a totalitarian country, the public can have access only to what the Government will allow it to know. If, therefore, we discuss the content of the Press freedom in terms of the public's right to have the freest access to information and opinion we shall be in a better position to judge what should be the limits to Press freedom. Obviously these limits should not be designed to protect any party Government in power from attacks by its opponents.

No curbs on the Press

The proviso to Article 19 (1) (*a*) says that the citizens' right to freedom of speech and expression granted by the Article shall not "affect the operation of any existing law, or prevent the State from making any law, in so far as such law imposes reasonable restrictions on the exercise of the right.....in the interests of the security of the State, friendly relations with foreign States, public order, decency or morality, or in relation to contempt of court, defamation or incitement to an offence". The terms "in the interests of the security of the State", "friendly relations with foreign States", and "incitement to an offence" were added to the original proviso contained in the Constitution of 1950 by an amendment in 1951. When this amendment was being discussed there was an outcry in Parliament that the extension

of the State's powers to control the Press envisaged by these additional phrases presented a grave threat to the freedom of the press. It was, however argued for the Government that the grant of these powers under the Constitution did not mean that legislation was imminent for exercising those powers. Actually the amendment was followed by a new Press Act called the Press (Objectionable Matter) Act which replaced the old Press Act against which the Indian nationalist press had agitated since 1930. It is some years since even the Press (Objectionable Matter) Act was allowed to lapse and at the moment there is no specific Central legislation directed against the Press as such in regard to what it may publish. Even in the States laws specially directed against the Press are few, the notable exceptions being a recent Punjab Act which contains powers for imposing pre-cenorship on the Press and prohibiting the entry of any newspapers into the State. These are avowedly powers to be exercised in an emergency but there is no doubt they are a serious restriction on the freedom of the Press and can hardly be defended in terms of the right guaranteed in the Constitution.

Inhibiting Factors

At the moment the dangers to Press freedom come not so much from legislation directed against publications in the Press but indirectly from such laws as the Registration of Newspapers Act, the Working Journalists (Conditions of Service) Act and the Newspaper Price-Page Control Act. To the extent some of these laws seek to impose arbitrary restrictions on the internal economics of newspapers and severely control their freedom to operate according to what they consider to be in the best interests of their readers, we must regard these measures as seriously undermining the freedom of the Press.

The problem in India, it must be recognised, is that we have a Press which is yet to grow to its full stature. Although in terms of the number of newspapers the Indian Press is as large as in any other major country, in terms of total circulations and the number of copies read per thousand of population, India comes almost at the bottom of the list. The conditions responsible for this state of affairs are obvious enough. A low level of literacy and an equally low level of per capita income are not exactly calculated to promote the growth of the press. But both these factors are continually changing and above all the growth of democratic institutions is stimulating public interest on the widest possible scale in national and local affairs. This factor by itself is bound to stimulate the growth of the Press. The fact that in the past five years newspaper circulations in India have been steadily going up is a welcome sign, but the growth is not fast enough and it is beyond doubt that this growth will be much faster if only the Indian Press could obtain the newsprint and the printing equipment it wants in adequate quantities at reasonable prices. That even in a country like Britain there should be complaints in the press against the high cost of newsprint shows how much it acts as an inhibiting factor in India. Those who have professed to champion the cause of small newspapers in this country for the sake of variety in the press and the maximum scope for expression of opinion should concentrate more on securing newsprint and other facilities for the smaller newspapers at cheaper cost instead of directing their animus against so-called larger papers which have yet to reach anything like the mass circulation of the British or the Japanese Press.

The Yellow Press

So far as the content of Freedom of the Press is concerned, as I have said earlier, the limiting factors today are not constitutional or statutory. They are partly organisational and very largely inherent in the economics of the Indian Press as it exists today. Very few papers are able to afford the cost of an adequate news service. There is too much dependence on the services of a single news agency and on material provided by interested parties, whether Government or other agencies. Aggressive, independent reporting, which is the hallmark of a free Press, is yet to develop. It is this which will ultimately determine the content of Press Freedom.

I have so far dealt with the limits to restrictions on the Press primarily from the political point of view. But those surveying the Indian Press including what may be called the 'Yellow Press'—and there is no doubt that we have a Yellow

Press, though not of the magnitude in some Western countries—may well ask whether there are not flagrant cases of abuse of the Freedom of the Press especially through the publication of salacious and obscene material and through publications avowedly preaching hatred against one section of the people or another. We have also been familiar with a type of journalism which thrives on unsavoury gossip about personalities in the public eye from politicians to film stars.

No simple remedy

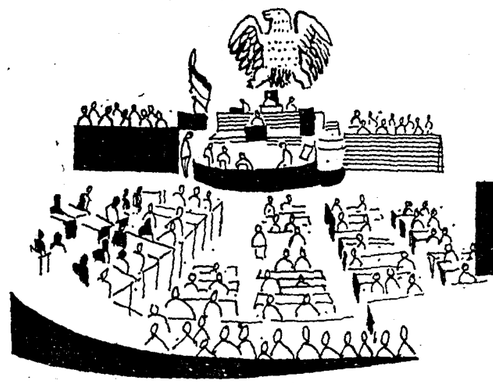
There is no simple remedy for dealing with this evil, which is by no means confined to India. In most cases an intelligent reading public treats such publications with the contempt they deserve and most of them die a well-deserved early death. But some of them do manage to survive and acquire a certain clientele by offering a mixture of sex, crime and sensational gossip, which is responsible for the mass circulations of some papers in the West. Where such publications violate the law of the land—the law against defamation, slander, obscenity or class hatred—the processes of the law have to be set in motion against the papers concerned. One suspects that the authorities are inclined to be a little too indulgent towards the ' yellow ' publications because of the unhealthy publicity which such legal proceedings are likely to receive and the uncertain outcome of such actions. The blackmailer and the slanderer as well as the peddler of hatred have thriven on the knowledge that the victims of their malice are reluctant to face the publicity that will attend a legal prosecution. Nevertheless, unless a few persons occasionally take the risk and incur the expense involved in exposing these malefactors, and proved offenders are punished severely, there is little chance of checking the evil.

Voluntary Regulation

The main problem, however, is one of raising the level of public taste so that the average reader will give short shrift to publications which are likely to degrade or corrupt the mind of the reader. Statutory prohibition is not an effective remedy because it will either drive such publications underground or is likely to be used to suppress publications inconvenient to the Government in power. In matters like raising the tone of the press and promoting something like journalistic ethics, voluntary regulation is the only proper course to adopt, though it is not easy as the British Press Council has found. The Swedish Press has a Court of Honour which has functioned successfully for over 25 years, but obviously Sweden has not had a yellow press to deal with. In India the problem at the moment is confined to a small marginal section of the press. Before it develops serious proportions, those connected with the Press as well as those interested in the growth of a healthy and responsible Press should jointly consider how it should be tackled.

FAMILY PLANNING

The need for taking the family planning programme to villages, convincing the masses of its benefits and providing them with facilities for the purpose at a low cost, has been stressed by the Union Minister for Food and Agriculture Sri S.K. Patil. The programme is no longer a controversial issue in the country and has come to be accepted as a necessary social obligation. The present annual increase of 8 millions in the country's population has inevitably serious socio-economic implications not only on the rate of growth of population, but also on the employment situation, he has stated.



A Resurgent Nation

S. VIJAYALAKSHMI, M.A., M.LITT.

WEST Germany presents today, a spectacle of economic prosperity and social security ! Germany emerged after one of the most destructive and shocking wars. An inquiring visitor from Asia is struck by the breath taking economic recovery of West Germany. One cannot find the scars of the war there. But behind the affluence of the country and her people, there is a story of division, destruction, desolation and privation. Those who had visited Germany before the war will find today, the country cut into two. In the place of Berlin, the pre-war capital of United Germany, we find a divided city of eastern and western sectors.* After visting West Berlin one has to travel across East Germany to go to the West German Republic ; for Berlin is situated in East Germany. One is reminded of the tyrannous rule of Nazi Feuhrer : the days and nights spent by the people in the concentration camps, in prisons and in exile.

How is it, the country that was totally destroyed and wiped out of existence had made such quick recovery both economically and psychologically ? Germany had been defeated twice within a period of 27 years, but appeared to be recovering their spirit and their economic capacity very fast !

* Eastern Sector : East Berlin.
Western Sector : West Berlin.

The Germans had not merely rehabilitated, but had regalvanised their economy to become the workshop of the entire world. West Germany has helped our Government to build the steel plant in Rourkela. German technicians are highly useful in our programme for industrialisation. West German machines have facilitated our work in Neyveli.

Quick Recovery

What is the secret of this miracle of economic recovery ? West Germany is the richest country in western Europe. Her affluence has begun to embarrass her own Government. Germans admittedly had certain advantages over other developing countries. It is true that the Germans obtained Marshall Aid. It is true again that the Germans were in every way blessed ; in spite of their massive industrial background being destroyed by the war, the German knowledge of industiral processes and techniques was left intact. " Germany can be destroyed but not their skill ", exclaimed somebody. Germany was in possession of useful raw materials, very vital for industrial and technological development, such as coal, lignite, potash, water power and to some extent iron ore. Her other equally important assets were a wealth of industrial skill and managerial talent and a long tradition of industrial production

combined with deep knowledge of the ways of machines and technical know-how. To this reservoir of highly skilled labour, was added the Marshall Aid.

In the evolution of human progress, experience counts for much ; and the feel of science and industry came to the German people long before they reached any country of the East.

Will to work

But the miracle of economic recovery is dependent largely on the German people's will to work hard. The prosperity of Germany cannot be accounted for entirely by her greater recuperative powers and resilience which stemmed from her longer scientific traditions and larger reservoir of industrial and commercial techniques and know-how. Marshall Aid and Ludwig Erhard's courageous currency reform might have helped them to recover far quickly. But the human factor counted much more. A nation can never be rebuilt in such a short time without certain qualities and discipline on the part of her people. The efforts of the German people breathed new life into their crippled and war-torn economy. The Germans proudly exclaimed : " Every Marshall Aid dollar spent in Germany had resulted in ten to twenty dollars worth of goods produced and services rendered." As a people, the Germans organised their country and themselves. In rehabilitating the shattered economy machines mattered—but men counted more—the spirit of man that played a vital role. They had a strong will and purpose, capable of being dedicated to a supreme task.

Memorial for Rubble Women

The single-minded devotion and the sense of duty could be illustrated by citing one instance which is a monument to the industry and capacity of the German people. A foreigner who makes a trip to West Berlin, is bound to visit one instructive spot there if his or her mission is something more than that of a casual tourist : It is the Memorial For Rubble Women ! This was created in honour of the women who cleared the rubble (ruins) of West Berlin in 1945. The damage caused by the war was unimaginable. In 1945, when the war stopped, the rubble had to be cleared before the task of reconstruction could commence. All the men were either killed, or they were fighting in Russia or were taken prisoners. When no men were available, this arduous task had to be performed by the women who alone were available. This tremendous responsibility of the preliminary work had to be undertaken by the women of West Berlin. The women cleared all the rubble. There are eight hills of rubble in the suburb of West Berlin, all cleared by these women and brought from the town. Still, a lot more has to be removed. Out of the bricks and stones from the ruins was built a memorial to the services of these women. It consists of a big mound, with a stone statue of a ' Rubble Woman ' seated with spade in her hand so essential for any work of construction. The appearance of this woman, her attire, the war shoes in her legs, and the expression in her face are quite indicative of the poverty, suffering, and privation of that period. The expression in her face indicates above all the determination, the iron will and supreme self-confidence. The ' Rubble Woman ' in Germany reminds the coming generations that a country can prosper only when her people, especially the women, played their part in the nation-building activities ; for they alone constitute the moral force in any country.

Shortage of Man Power

West Germany is a Federal Republic. The Federal Government is manned by the Christian Democratic Party. Eleven States which constitute the Federal Republic have their own governments which are mostly coalition ministries of Christian Democrats and Social Democrats and the Liberals. The Government of the Federal Republic had enlarged the democratic sector so well that equality of opportunity exists in abundance. With a policy of full employment and basic minimum income, everybody leads more or less a satisfied life. There are 500,000 work places or jobs to be filled up in the country. For every unemployed applicant, five vacant workplaces are available. More than 130,000 foreign nationals from Spain, Italy and Greece work in the factories, workshops and other projects in West Germany. Shortage of man power was very acute in Germany immediately after the war and the problem of Germany is one of labour saving.

The shortage of man-power had necessitated the mechanization of agriculture. Even among the young peasants, the tendency is to acquire skill and secure a job in a factory which is more advantageous in terms of emoluments. An Asian or an Indian visitor is amazed to find a German farmer working all by himself on the field with tractors, trucks and other agricultural machines ; he is busy turning the earth, cutting grass, carting hay and attending to thousand and one duties. Sometimes his only companion in the farm work will be his wife ! It is this dearth of human being that had created a crisis in agriculture in Germany. Mechanization is hardly beneficial to small holders. The German peasants are very fortunate in one respect. The Government gives them enormous assistance. It is said that the 60 per cent of the amount spent on agriculture is given to them as subsidy by the State under what is known as the ' *Green Plan* '. This is a ten-year plan which is intended to assist the peasants to buy all the equipments needed for mechanizing agriculture.

Rural Areas not Neglected

Rapid industrialization has not resulted in the neglect of rural parts. A cohesion exists in the society. The villager never feels that he is left behind in the race by his urban counterpart. The means of communication, the availability of radio, television and all the modern amenities of the industrialised society have made the village folk feel that they are not isolated but are part of the same community.

A skilled industrial worker is never unemployed. Though things cost a lot in Germany, the workers or the wage earners earn enough to maintain themselves. With abundant opportunity for work and means of livelihood, a working man can hardly be distinguished from a professor or a diplomat or an industrialist in the matter of the quality of the dress materials.

Social Welfare Work

Education is free up to 14 years. While the higher university education is considered to be very vital, the aptitude on the part of the young people to acquire some skill or specialised knowledge within a minimum period and to secure jobs is widely prevalent in Germany.

The local or community governments have achieved tremendous progress in the field of social welfare. Their care for providing substantially for the community is worthy of emulation by the local governments of all lands. More than 85 per cent of the local or community governments in the towns and villages are manned by the Social Democrats. Not only the destitute and the disabled, but the young, the old, the widows and the children benefit by the schemes of the local governments for social welfare. The welfare work is strictly non-partisan in West Germany. A Central Organisation called " Workers' Welfare Organization" or " Arbeiter Wolfhart " in German is responsible for the social welfare work.

This *Arbeiter Wolfhart* co-ordinates the social welfare work of the Catholics, Red Cross, Jewish, Labour and other bodies, who aim at providing social benefits to the needy. The *Arbeiter Wolfhart* had played an important role in influencing social legislation and had also influenced to a great extent the general social life of the country. It also sponsors and encourages welfare projects for the benefit of the working people.

Community Centres

The municipalities, county and village governments have done their best to improve the well-being of the community. The *Arbeiter Wolfhart* and the local Governments have co-operated to provide for the welfare of all categories of people living in towns and villages. A visitor from foreign countries is struck by the sense of responsibility, the earnestness and sincerity of the representatives of the community or local government.

The socialist conception of the welfare of the community has been introduced in several towns and villages through the establishment of the community centres. The Mayors of the innumerable towns and villages known as *Burgermeisters* have been instrumental in building the community centres, homes for old people, youth and children everywhere.

Every service at the community centre is rendered at very nominal rates so that people who cannot afford certain amenities in their homes are able to get them in the centre. Families

who do not have their own facilities for bathing or provision for preserving food make full use of the facilities available at the centre. The villagers and town folk get all help at the community centre in the form of best medical attention both for the adults and children. Mechanical fittings in the community centres help the villagers to weigh their agricultural produce and make announcement about the availability of stocks.

Care of Children

In an industrialised society the material comfort and the higher standard of living depend on increased emoluments. So both men and women in the families go to work. The real problem will be to look after the children of these working people. In West Berlin, Mannheim, Frankfurt and other European cities, one hears about the 'Key Children'. These children go to schools in the morning with keys around their necks so that when they return home in the evening, they can open the doors themselves, for their mother or father will be back from their work only late in the evening.

Hence the care of the children has become the special responsibility of the Government and the community. This has resulted in the establishment of number of child welfare centres, special schools, institutions for children and Kindergarten recreation and holiday homes for children of varying age groups. In these institutions vocation courses are organised for these children. Besides, education and health, the providing of the home atmosphere for these children which they lack is an arduous task for the Government. This special responsibility of looking to the health, education, the development of children had necessitated the training of several hundreds of nurses every year who are required to look after these specialised institutions. The infant mortality in West Germany is only 4 per cent and it would be amazing to know that it is only two per cent in Sweden!

Functions of Trade Unions

The trade unions have ceased to be mere bargaining bodies. The German Federation of Trade Unions is the parent organisation of almost all trade unions in the Federal Republic. In an affluent society, where every body is assured of a basic minimum, and where the working class has realised most of its objectives, the trade unions have different functions to perform. When Karl Marx proclaimed that the workers and peasants should become owners of production, the conditions in the world were different. Today the workers' movement has become very strong. Germany has a network of institutions and specialised schools for workers' education. The activity of the German Trade Unions in the field of workers' education scheme (which is being promoted in India now) is an interesting study.

This scheme of workers' education in the trade union schools enables the trade union members to continue their education even while they are employed full-time.

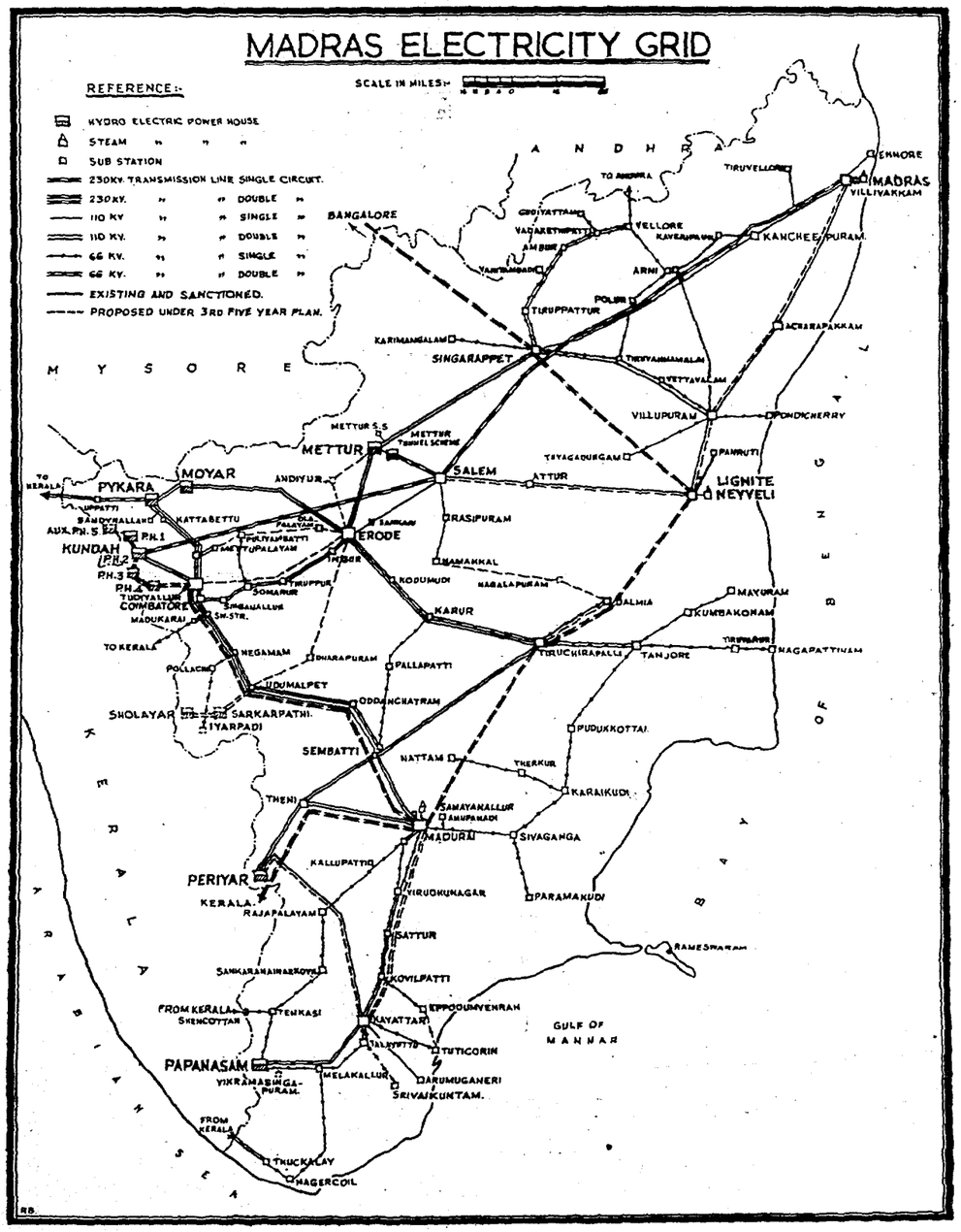
Trade Unions have fought for the implementation of social welfare schemes and for better industrial relations. The worker can join any evening class in his town for a period of six months or one year and receive instruction in higher technical courses, besides general knowledge. This education helps to acquaint active trade union members, especially officials, with labour legislation, economics, social problems, workers' participation in the management and the principles of trade union movement. Besides this instruction, special conferences and group discussions take place. In West Germany there are three academies in Dortmund, Hamburg and Frankfurt. They are attached to universities for scientific studies. The State pays for them. If students studying here are sent by trade unions, they get help from the trade unions. Special foundations have been arranged by the Trade Unions for this task of education. These courses, also, besides imparting or transmitting essential knowledge of economics, trade unions and human relations in industry, give supplementary training related to particular industries.

Tradition of Science

The politically conscious people in the (Bundes) Federal Republic of West Germany, are aware that democratic principles and the education of responsible, democratic citizens had been miserably neglected in Germany in the recent past. The efforts of the trade unions in the field of adult education which they call *social education* through their schools and institutions have acquired special significance.

In every sphere of life, whether literature or philosophy, industry or specialized research, Germany ranks very high and has been a source of inspiration for developing nations. The progress of industry or agriculture or any other thing depends on much more than on men and machines; for the output of factories is linked closely with the work of laboratories and of research students in the back-room of science. While rich cultural traditions are inspiring there is also the vital tradition of science that we lack in our country. This is the lesson that West Germany will teach us.

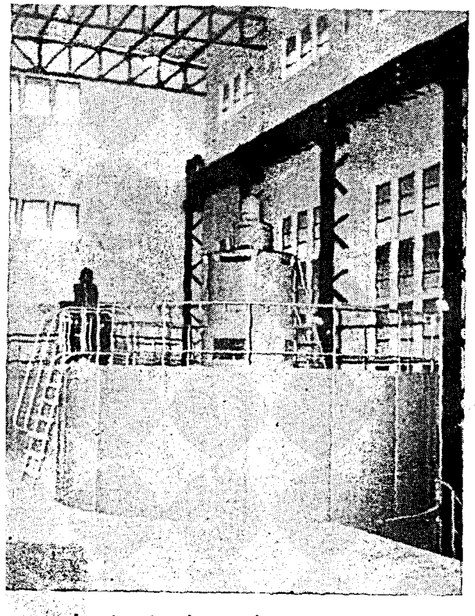
Wherever nation-building goes on
you'll find
ASHOK LEYLAND COMETS
at work
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ENNORE, MADRAS



Power Projects under the Five year Plans

V. P. APPADURAI, B.A., M.I.E. (India),
Chief Engineer for Electricity,
Madras State Electricity Board.

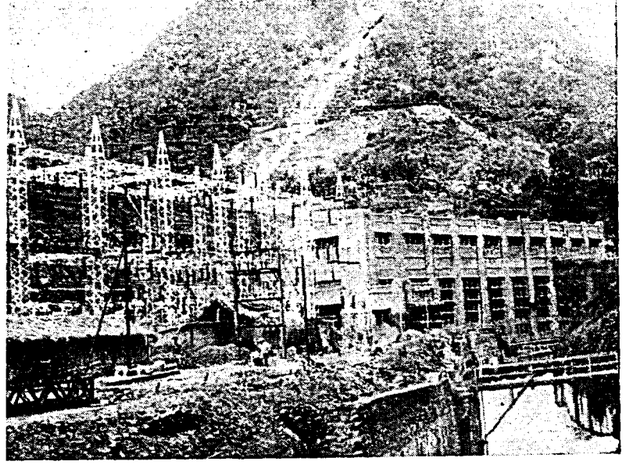
IN the matter of development and utilization of the power resources, Madras has an impressive record. The State ranks first in rural electrification and in hydro-power output and third in overall power production in the whole country. The salient feature of power development in the State is the unified Grid system connecting the seven hydro and the two thermal stations which ensures both economy in utilising the storages at the various reservoirs and conserving coal and steady and uniform supply conditions over the entire State. Table I gives the achievements under the Five-Year Plans.



Interior view showing the generating units

TABLE I.

	At the beginning of I Plan, 31-3-51	*At the end of I Plan, 31-3-56*	*At the end of II Plan, 31-3-61*
Generation—			
Installed generating capacity in MW.	156	256	571
Aggregate demand in MW.	130	208	560
Units generated in millions.	630	1,053	2,500
Transmission—			
Length of HT Lines in miles.	4,355	7,343	15,000
Length of LT Lines in miles.	3,580	8,128	21,000
Distribution—			
Number of consumers in lakhs.	2·5	4·26	8
Sub-stations including distribution transformers.	1,647	3,862	10,150
Rural Electrification—			
Number of villages electrified.	1,613	3,320	10,500
Number of agricultural pumpsets connected.	14,373	32,440	116,000
Finance—			
Capital outlay in crores ..	30·96	54·01	131
Gross revenue in crores ..	3·18	5·94	15·21



Periyar Power Station

It may be seen that during the Second Plan period the installed capacity, length of lines, number of villages electrified and gross revenue all have been more than doubled. During this period three more power stations, viz., Periyar, Kundah No.1 and Kundah No. 2 were added to the Grid and a 30,000 KW set added to the existing Madras Thermal Station. Records were established in completing these in such a short time.

Third Plan Projects

Industrial development is growing fast in the country both in the public and private sectors and this is far outreaching power development. This has been the case in almost all the States in the recent years. In Madras State during the Third Plan period large scale industrial development requiring large blocks of power has been programmed. To meet this ever increasing demand a number of schemes have been drawn up,estimated to cost Rs. 100·19 crores as compared to the estimated outlay of Rs. 77 crores for the Second Plan schemes and Rs. 30·68 crores for the First Plan schemes. Table II gives the projects approved by the Planning Commission for implementation during the Third Plan period, their outlay and the benefits.

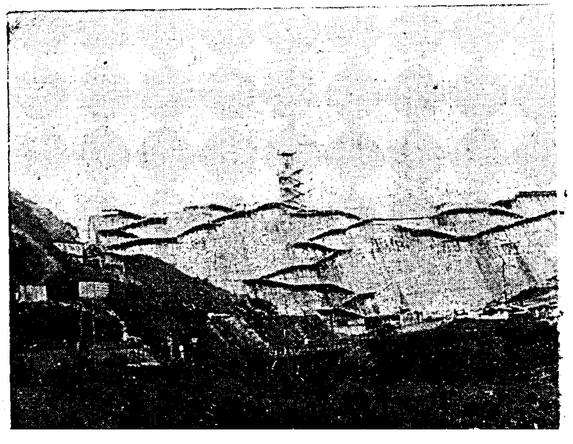
TABLE II.

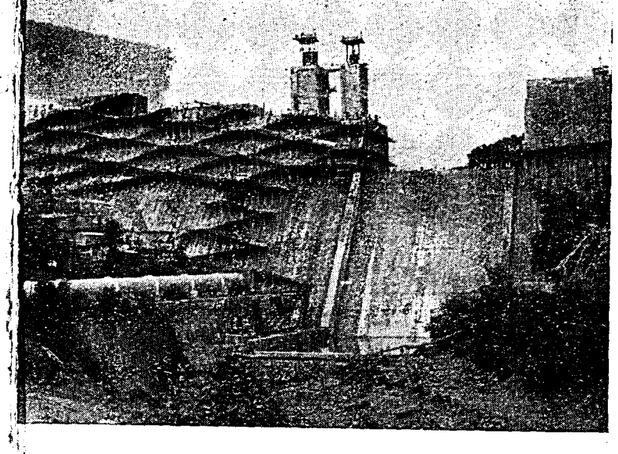
Serial number and name of scheme	*Plan provision*	*Benefits in III Plan in MW*
	(RUPEES IN CRORES.)	
1 Periyar Hydro Project ..	0·12	..
2 Kundah, Stages I & II ..	2·48	..
3 Sandynallah Reservoir Scheme	0·59	..
4 Mettur Tunnel Scheme ..	5·80	100
5 Kundah, Stage III	23·06	245
6 Periyar, Stage III	0·94	35
7 Anamalai Project (Parambikulam).	5·00	95
8 Transmission and Distribution Project.	60·00	..
9 Loans to Licensees	2·00	..
10 Investigation of new shemes..	0·20	..
Total ..	100·19	475

Hydro-electric Projects

The Mettur Tunnel Scheme is to utilise the irrigation discharge of 20,000 cusecs at Mettur Dam to develop seasonal power for about 7 months from July to January in the year. During this period the storages in the Kundah and Pykara Basin will be conserved to the extent necessary for utilisation in the summer months for firming up the Mettur power. Based on discussions with the Central Water and Power Commission the scheme is proposed to be developed in two stages: The first stage which involves the construction of a power-house with an installed capacity of 100 MW in two units and utilising 10,000 cusecs will be completed during the Third Plan period. The civil engineering works will be completed for both the stages so that later on two more units can be added. The first stage on completion will add to the Grid an energy potential of 385 million units. Power generated from this station will be fed into the Grid at Salem.

Emerald Dam





Avalanche Dam

The Scheme has already been approved by the Planning Commission and as a special case they have also agreed to the commencement of the preliminary works not involving foreign exchange even during 1960–61 in the Second Plan period. Works on this scheme were inaugurated on 31st August by the Chief Minister and the preliminary works and excavation of the tunnel are currently under progress.

Kundah Hydro-Electric Scheme

A total fall of 5,359 feet is available for power generation at Kundah of which the present phase under construction utilises a drop of about 3,647 feet and the Third Stage Extensions is to utilise the balance drop of 1,712 feet and also collect the water of nearby and enroute rivers. The fall is proposed to be developed in two more power stations, the third power station with an installed capacity of 50,000 KW in two units. In addition a third unit at the existing Plant No. 1 and a fifth unit at the existing Plant No. 2 besides an auxiliary station to utilise the fall between the Upper Bhavani and Avalanche reservoirs with an installed capacity of 20,000 KW are also envisaged. The total installed capacity that will be added during this stage is 245,000 KW and the energy output will be 1,125 million Kw hr. Thus on completion the Kundah Hydro-Electric Scheme will have an installed capacity of 425,000 KW and an energy potential of 1,803 million Kw hr. per annum.

Parambikulam Scheme

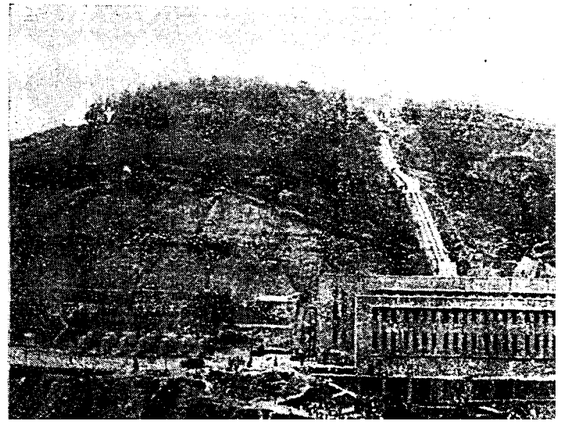
The Parambikulam project envisages the construction of two or more power stations: one in the Parambikulam valley utilising the waters diverted from Nirar and the surplus waters available from Sholiar over and above the requirements of Kerala State at their Sholiar power house and another at Sarkarpatty utilising the tail race waters of the first power station and regulated flows from the Parambikulam, Tunakadau and Tekkadi rivers. The first power station, called Sholiar, will have an installed capacity of 70,000 KW in two units and Sarkarpatty power station will have a single generating unit of 20,000 KW. Detailed investigations of the scheme are under progress.

Periyar II Stage Extensions provide for the installation of one more 35,000 KW unit at the existing Periyar power station to increase the installed capacity from 105,000 KW to 140,000 KW.

Thermal Project

At present we have only two thermal stations: one at Madras and the other at Samayanallur. Coal for these stations comes from Bengal and Bihar and there is considerable difficulty in transport of coal apart from the continually rising cost of coal. It was believed that there were no coal deposits in Madras State and therefore the power development in the earlier years was mainly confined to the development of hydro resources. With the present day cost of coal, the cost of thermal power is nearly thrice as that of hydro power. Now that lignite has been located in Neyveli, South Arcot district, it is proposed to utilise it for power generation. The Neyveli Lignite Corporation which is installing a power station with an installed capacity of 250,000 KW have promised to give power to an extent of 159,000 KW beyond the Second Plan period.

Kundah Power House No. I



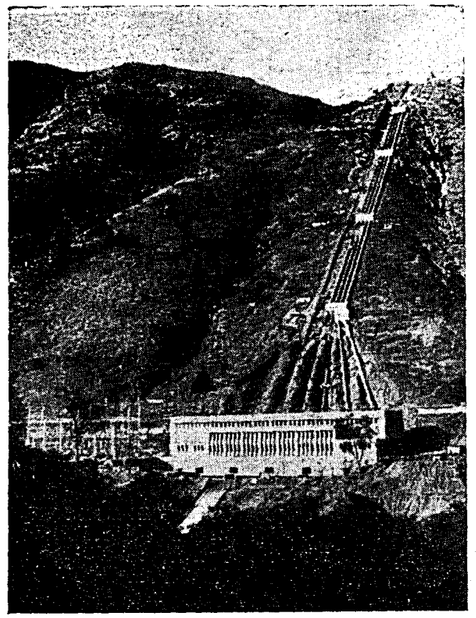
The capacity of this station will be augmented with three more generating sets of 50,000 KW each during the Third Plan period and this additional capacity in full released to Madras Grid so that by the end of Third Plan Period Neyveli will be able to spare 309,000 KW to the Madras Grid when the installed capacity of the station is increased to 400,000 KW.

Formation of Super Grid

The more important of the transmission lines of Voltages 66 KV and above programmed can be seen from the Grid map. Perhaps the most important feature of the transmission scheme for the Third Plan is the formation of 230 KV Super Grid. This will facilitate effective utilization of power within the State and also efficient interchange of power between Madras and its neighbouring States. The Super Grid will necessitate the construction of 230 KV line from Neyveli to Singarapet, Neyveli to Trichy, Trichy to Madurai, Madurai to Tudiyalur and Tudiyalur to Kundah IV. Besides the above, the Kundah Power Station II, III and IV will be inter-connected at 230 KV. It is also proposed to interconnect Madras and Mysore and Madras and Kerala by 230 KV transmission lines. The inter-connection between Madras and Andhra is to be taken up later. Initially it is proposed to consider the possibility of interchange of 50,000 KW between Madras and Mysore and an equal amount between Madras and Kerala. Singarapet and Madurai will form the linking points with Bangalore (Mysore State) and Peermedu (Kerala State) respectively.

Atomic Plant

Even after the Third Plan schemes are completed, Madras will still be in deficit of power. The existing hydro-*cum*-thermal grid will have to be suitably extended to meet further needs. The economical schemes within the State and the inter-state schemes should be taken up and



Kundah Power House No. 2

completed. Mysore and Kerala States which are liberally endowed by nature with Hydro-Electric sites when fully developed may be able to spare a small quantum of power initially. This will not be adequate to meet our needs. Further with the growth of industrial development in their own States, they may need additional power and consequently be forced to reduce their quantum of export to Madras, if not cut off altogether. Under these circumstances setting up of an atomic plant of 250,000 KW capacity in Madras State is imperative, especially as the assured power supply resulting therefrom will give a fillip to the establishment of new industries and expansion of the existing units with the concomitant increase in productivity and standard of living.

FISHERIES INSTITUTE

The Central Institute of Fisheries Education, one of the biggest training institutions in Asia, is being set up in Bombay. It will invite trainees from all Asian countries for comprehensive courses in fisheries. United Nations Special Project Fund has given substantial aid in establishing the Institute.

Decentralisation of Administration

S. KRISHNASWAMI PILLAI,
Deputy Secretary to Government,
Rural Development and Local Administration.

The word " administration " is derived from the latin word " ministrare " which means to manage. In its widest application, it covers the whole art of carrying into effect any policy, plan or undertaking whether conceived by Government or a local body or a public or private agency. It is the art of management—not only the management of a factory or an office but even of human affairs. Administration in a country is a part of life of that country. The administration of human affairs is the " Government " of a country. Democracy is a form of Government in which the supreme power is vested in the people collectively and is administered by them or by officers appointed by them.

The transfer of Governmental power on August 15, 1947, from the British to Indian hands had meant in effect the handing over of the keys of administration to the people. The power of administration, no doubt, passed on immediately to the people's representatives at the Centre and State levels. It could not, however, immediately travel to levels below that of the State.

Growth of Local Bodies

Under the British rule, the administration became centralised and rapid growth of communications and the impact of industrial revolution in the west accelerated this process. A highly centralised form of administration was defended as leading to more uniform and refined administrative practices; quicker execution and a sense of unity in the nation. In due course, however, the Britishers felt the imperative need for establishing " Local Funds " for " local improvements ". They also found that local interest, supervision and care are necessary to success in the management of funds devoted to education, sanitation, medical relief and local public works. The need for financial decentralisation as an aid to economy and efficiency of administration provided the occasion for the establishment of Local Administration Units in urban areas and rural areas. Municipalities were constituted for local administration of urban areas; while District Boards, Taluk Boards and Union Boards were created for administration of rural areas. The progress of Local Administration was being reviewed from time to time and changes were being made in the constitution, functions and powers of these Local authorities. At the time of transfer of power these institutions continued as people's institutions.

In a country waking up after centuries, it is but natural that between the local people's institutions and the Government, the Government would be the stronger partner. Local institutions would be dependent on the initiative flowing from the Government. A new approach is the need of the hour and a new agency has to be found to take democracy to the lowest level for if democracy is to survive and endure as a reality it has to be worked by the perennially rejuvenated impacts of representatives emerging from below who will reflect the surging spirit of the people.

Growth from Below

It was realised that sovereignty in a democracy could never be bestowed on the people from above. It had to grow from below. Though our Constitution has conferred equality of rights to all the people, those in the countryside did not possess the resources necessary to enforce their rights

guaranteed by the Constitution. It was in this context that the programme of Community Development was launched in rural areas.

The Community Development Programme launched in 1952 has made spectacular progress. The main aim of the programme is to develop the social and economic life of the community, and to bring the message of hope to the masses of our people, to teach them self-reliance and confidence in themselves and the way to realise our objectives through hard and co-operative effort. It endeavours to change peacefully and progressively the social order of our 300-million inhabitants of rural areas. Self-help and co-operation are the principles on which the movement rests, the Government offering guidance and assistance financial as well as technical. But it was found that although the people had come forward to help themselves, the initiative had by and large vested with the official agency. The wide powers given to the Governmental agency in the earlier phase to enable it to get things done quickly had actually resulted in making the people and non-official institutions look to Governmental agency for help.

A People's Programme

If the Community Development programme was to be a people's programme, it was not only desirable but also essential that the people themselves must not only plan and execute the programme but also provide the stimulus and themselves become the prime movers. The involvement of the people and their representative institutions was of vital importance if democracy was to be broad-based and the people educated in their responsibilities. The success so far achieved indicates that what started as a Government's programme with people's participation has gradually become a people's programme with Government participation.

The Mehta Report

A study team presided over by Sri Balwantrai Mehta was set up by the Committee on Plan Projects in 1957 and it reviewed the entire situation and considered that the existing local-self-Government bodies should be replaced by a single representative and vigorous democratic institution to take charge of all aspects of development work in the rural areas, a body which must be an instrument of expression of the local people's will in regard to the local development. It suggested that there should be devolution of powers and decentralisation of administration so that the responsibility for planning and executing of the development programmes should be exercised by the popular representatives of the local area. These popular institutions were to be the panchayat at the village level, the panchayat samiti at the block level, and the Zilla Parishad at the district level. In the meanwhile, the State Government also appointed a Cabinet Committee to consider the future of Local Administration in Madras State. It was found that there was a large measure of agreement between the conclusions reached by the Cabinet Committee and the conclusions reached by the Mehta Committee. The Cabinet Committee also recommended a three-tier pattern of local administration. According to this pattern the panchayats are to be the basic institutions at the village level because they have their roots in our culture and traditions. A Panchayat Union is to be constituted for every development block and the constitution of the panchayat union is to be so devised that it would represent a co-operative association of the panchayats of all villages situated in that block and provide effective individual representation on it for every panchayat in the block. The Panchayat Union is to be provided with funds and executive staff, technical aid and administrative guidance. At the district level, a District Development Council is to be formed for each Development District as the permanent machinery for establishing advisory associations of elected representatives of the local people with departmental agencies of the State Government. In our State, District Development Councils were constituted from 1st January 1960 and the first batch of 75 panchayat unions was inaugurated on 2nd October 1960 and the programme of constitution of panchayat unions will be completed on 2nd October 1961 when the entire State will be covered with panchayats and panchayat unions.

Proposals of Planning Commission

The proposals of the Planning Commission for the Second Five-Year Plan as accepted by

Parliament also stressed the need for creating within the district a well organized Democratic Structure of administration in which village panchayats will be organically linked with popular organizations at the higher level.

The popular institutions are responsible primarily for planning and implementation of the overall plans of Government approved in Parliament and in the State Legislature. In the process these newly formed institutions will enlist maximum participation of our people. The representatives at the Village level will have to concern themselves with the day-to-day planning of programme for each individual family. Thus alone can there be a plan for the village as a whole in all aspects of its life. They should have a complete understanding of the resources and requirements of the village, the priorities, the special attributes and limitations of the people.

The Local Self-Government institutions and others at the Block level will be slightly away from the ground. Therefore, their role will be one of general supervision and stimulation of the lower organizations and the planning and implementation of inter-village programmes. The District Organization, viz., the District Development Council which is still farther away will provide supervision in depth and wider planning and implementation of programmes which are of inter-block importance. Besides planning, implementation, supervision and stimulation these people's organization will have further responsibility of interpreting the National Plan to the people at the respective levels and to place the local plans in the wider setting. Thus the people's organizations from the village to the district will have a primary and complementary role to discharge alongside the Government agency.

Devolution of Power

The need for a devolution of power and a decentralization of machinery was thus conceded and such power was to be exercised and such machinery controlled and directed by popular representatives of the local area. There is a danger in this and a risk of things going away because of lack of experience or training. That risk should be cheerfully faced. In the long run it is only by spreading out responsibility that we will train our people. Delegation of power does not divest the Government of ultimate responsibility for the actions of the authority to whom power is delegated. Decentralization on the other hand is a process whereby the Government divests itself completely of certain duties and responsibilities and devolves them on to some other authority. Delegation of power is taking place to progressively lower levels of executive machinery. Decentralisation of responsibility and power has not taken place below the State level in recent years. With the setting up of panchayat unions at the Block level, decentralization will be effected by a devolution of power to that body which will be in entire charge of all development work within the jurisdiction. The term "development work" will include agriculture, animal husbandry, minor irrigation work, village industries, elementary education, local communication, sanitation, health and medical relief, local amenities, etc. This process has come to be known as "Democratic Decentralization". This process does not necessarily consist of immediate and outright transfer of responsibility from the State Government to panchayat unions. To start with, the scope of statutory devolution of panchayat unions will be limited to the development of those social services which are at present the statutory responsibility of district boards and panchayats. Later on panchayat unions will be entrusted with a definite measure of responsibility in respect of the formulation and execution of local development schemes, subject to Government control for specified purposes. This has become necessary because the local development schemes will have to be fitted into the framework of the State Development Plan, just as the State Development Plan has to be fitted into the National Plan.

According to the programme of implementation of the Madras Panchayats Act, 1958, the entire State will be covered by panchayat unions on or before 2nd October 1961 but the statutory entrustment of the execution of the National Extension Service Schemes of Community Development to the panchayat unions will be ordered under a different phased programme. It is only when the Panchayat Unions are

of Democratic Decentralization can be deemed to have reached culmination.

Democratic Decentralization

The success of the scheme of Democratic Decentralization will depend on a very large measure on the education and training of the people as also their representatives to whom we propose to transfer the substance of the power and responsibility under the new scheme. Ignorant people and enlightened representatives are either myths or uneasy partners. For this purpose a series of Panchayat Development Seminars were held at the State level. Similar Seminars were held at the District level and the programme has also been carried to the Block and Village level.

India's history of the last several years illustrates the age-old truth that responsibility and power are essential for development and progress Programme the central concept of which is to enable the country to appreciate its problems, to realize its own responsibilities in regard to the solution of its problem and to exercise the powers necessary to discharge these responsibilities, makes this possible. The programme will be implemented through popular institutions and with the programme unfolding itself new standards of improved living, of better health, better education, better food, better clothing for village community will become possible. The ushering in of the Panchayat Raj is a revolutionary step towards decentralization of power and realization of the India of our conception. Panchayat Raj would make the people in the countryside develop self-reliance and self-confidence in the political, social and economic spheres and eliminate officialdom. There is no doubt that the enterprising people of our State would make the best use of the new powers vested in the village units.

LITERATURE ON CO-OPERATIVE MOVEMENT: AWARD OF PRIZES

In order to encourage the production of books and literature dealing with important aspects of the co-operative Movement for the use of field workers, officials of co-operative societies and those interested in Co-operation, the Government of India have decided to award prizes to authors and to purchase copyright of the books bearing the following titles :—(i) Co-operative Farming : (ii) Operation and Management of a Co-operative Marketing Society ; (iii) Procedures and account keeping in Village Co-operative Society ; (iv) Consumers' Co-operative Society ; (v) Guide to Co-operation for the Village Level Worker ; (vi) Stories of Successful Co-operatives ; (vii) A " Drama " bringing out the benefits of Co-operative Credit.

Authors who wish to participate in the scheme may apply to the Section Officer, (Co-operation Training) Ministry of Community Development and Co-operation, Department of Co-operation, Room No. 465-A, Krishi Bhavan, New Delhi, for rules governing the award of prizes. The last date for receipt of entries is 31st March 1961.

The authors will be supplied, on request, the synopsis for the books mentioned above. Books and manuscripts can be submitted in any Indian language. For each publication selected, a prize subject to a maximum of Rs. 1,000 will be awarded.

Co-operation in Towns and Villages

V. BALASUNDRAM, I.A.S.,
Registrar of Co-operative Societies.

THE large majority of the population of our country consists of agriculturists who live in villages. They require credit for cultivation. They also require seeds, manures and other requisites for production. Besides short-term loans for cultivation, which can be repaid from the year's harvest, they require what are known as medium-term loans for purposes like purchase of bulls, sinking or deepening of wells, etc., which can be repaid over a period of 3 to 5 years from their annual income. They also require long-term loans for discharge of prior debts and effecting permanent improvements to land, which can only be repaid in small instalments extending over a much longer period.

Agricultural credit

Co-operative credit societies have been established in villages for catering for these needs and requirements of the agriculturists. There are over 9,000 credit societies, 329 agricultural banks, 22 rural banks and 150 credit unions in the State for providing these facilities. The village credit societies generally function on the basis of unlimited liability and operate in one or two villages. The agricultural banks are constituted on guarantee liability and operate over a larger area covering 4 or 5 contiguous villages with a total population of about 5,000. The village credit societies and agricultural banks give loans to their members on personal surety and on mortgage of immovable property. The agricultural banks grant loans on the pledge of jewels also. The rural banks operate over a wider area than the agricultural banks and issue mostly medium-term credit on mortgage of immovable property, besides loans on the pledge of jewels. The credit unions, which are of recent origin and which have been formed in economically backward areas operate over 4 or 5 villages with a population of about 5,000 as in the case of agricultural banks, but unlike the agricultural banks, they have affiliated societies functioning in the villages in their area. These unions confine their business to the supply of credit leaving it to their affiliated societies to provide other services to their members. These types of primary societies are financed by the Central Banks in their respective districts. The Central Banks themselves are financed by the Madras State Co-operative Bank. On 30th June 1960 there were 15.86 lakhs of members in all these primary societies, and they provided credit to the total extent of Rs. 17·30 lakhs during the year ending June 1960.

Long-term credit

For the supply of long-term credit to the agriculturists in the villages, there are 91 primary land mortgage banks in the State. Generally speaking, there is one bank for every taluk. They grant loans on the mortgage of unencumbered lands up to 40 per cent of the present value for the discharge of prior debts and 50 per cent for improvement of land. These loans are repayable in annual instalments over a period of 20 years. The primary banks are financed by the Central Land Mortgage Bank at Madras which raises money by the issue of debentures guaranteed by the Government. The value of the debentures in circulation on 30th June 1960 amounted to Rs. 684.58 lakhs. During the year 1959–60, the land mortgage banks issued loans to the extent of



An outstanding example of Co-operation is the Ammapet Weavers' Colony in Salem

Rs 93.41 lakhs and the outstandings against these members amounted to Rs. 4.64 crores on 30th June 1960.

Marketing facilities

Besides credit for production, the agriculturists in the villages require facilities for the sale of their produce at a favourable price. The marketing societies of which there were 126 on 30th June 1960 provide these facilities. They not only lend on the pledge of their produce up to 60 to 75 per cent of its market value to enable the members to hold it over for a better market, but also undertake marketing of the produce on behalf of the members at a small commission. During the year 1959-60, they lent Rs. 191.72 lakhs on the pledge of produce and sold produce worth Rs. 253.18 lakhs.

Government provide financial assistance to the societies for the construction of godowns, installation of processing plants like groundnut decorticators, cotton gins and rice hullers and for purchase of lorries. There are marketing organizations at the district level; and an Apex Marketing Society has also been established at Madras to facilitate the working of these societies.

A new venture in the co-operative organization for the benefit of the agriculturists in the rural areas is the establishment of co-operative sugar mills consisting of the sugarcane growers. The objective of these organizations is that, in addition to getting a reasonable price for the cane grown, the producers may get a share of the profits of the sugar industry also. There are now three sugar mills in the State at Maduranthakam in the Chingleput district, Ambur in the North Arcot district, and Udamalpet in the Coimbatore district. Two of these mills have gone into production and the third mill is expected to start production very soon. There are proposals for the organisation of more mills.

Co-operative milk supply societies have been formed in the villages to provide a subsidiary occupation to the agriculturists. These societies issue loans to their members for the purchase of milch animals and the loans are recovered in easy instalments from the proceeds of the milk supplied by them to the societies. The societies arrange for the marketing of the milk produced by the members. Apart from providing a sideline of income to the villagers, these societies have helped in supplying pure milk to urban consumers. There were 848 milk co-operatives on 30th June 1960 and the value of the milk produced by them during the year ending 30th June 1960 amounted to Rs. 212. 93 lakhs.

Co-operative cultivation

Attempts have been made in recent years to organize cultivation itself on a co-operative basis. Owners of land who come forward voluntarily to pool their lands and undertake their cultivation jointly are organized into joint farming societies. Tenants cultivating lands belonging to temples have been organized into tenant farming societies. In gramadan villages, especially in the Madurai district, farming societies known as gramadan sarvodaya co-operatives have been formed. Government have provided assistance to these societies for purposes like sinking of wells, installation of pumpsets, reclamation of land, construction of godowns, purchase of bulls, carts, implements, etc., and free services of staff. They have also given guarantee to the financing banks in regard to the repayment of short-term loans issued to these societies for cultivation. On 30th June 1960, there were 124 societies of all types and the total extent of land brought under them was 17,981 acres.

Handloom Weavers

Next in importance to agriculturists come the handloom weavers in the villages. For them, weavers' co-opearatives have been organised. These societies procure yarn and other materials required for production and get cloth produced through their members paying them wages for their work. On 30th June 1960 there were 1,056 weavers' societies in the State and nearly 45 per cent of the looms are within their fold. On an average, their total monthly production amounts to Rs. 77 lakhs and their sales to Rs. 83 lakhs. The Madras State Handloom Weavers' Co-operative Society which is composed of weavers' co-operatives helps these societies in the supply of yarn and the sale of their finished goods. With the aid of the cess fund, various measures have been taken for assisting weavers and improving the handloom industry.

Construction of Houses

Facilities for the construction of new houses are also provided in the villages by the establishment of rural housing societies. Government loans subject to a maximum of Rs. 5,000 are given by these societies for the purpose. These loans which are given upto 80 per cent of the estimated cost of construction are repayable in instalments over a period of 20 years. There were 209 rural housing societies on 30th June 1960. They have financed the construction of 419 houses.

The development of co-operative activities in various directions is not confined to the villages alone. Co-operative institutions of different types render useful services to the urban population also. The co-operative urban banks provide credit to artisans, traders and others on personal surety, on the mortgage of houses and on the pledge of jewels, produce and merchandise also. They accept deposits of various kinds and provide to their constituents several banking facilities such as collection of cheques, transmission of funds and, in some cases, discounting of bills. On 30th June 1960, there were 151 such banks with 4.1 lakh members. The loans due by members to these banks amounted to Rs. 681.25 lakhs on 30th June 1960.

Besides urban banks, there are employees' credit societies for meeting the credit needs of salaried employees. There were 563 such societies with 2.8 lakh members and the loans outstanding against them amounted to Rs. 8.43 crores. These societies have helped their members to encourage thrift by a system of compulsory savings and the total thrift deposits collected by them amounted to Rs. 192 lakhs.

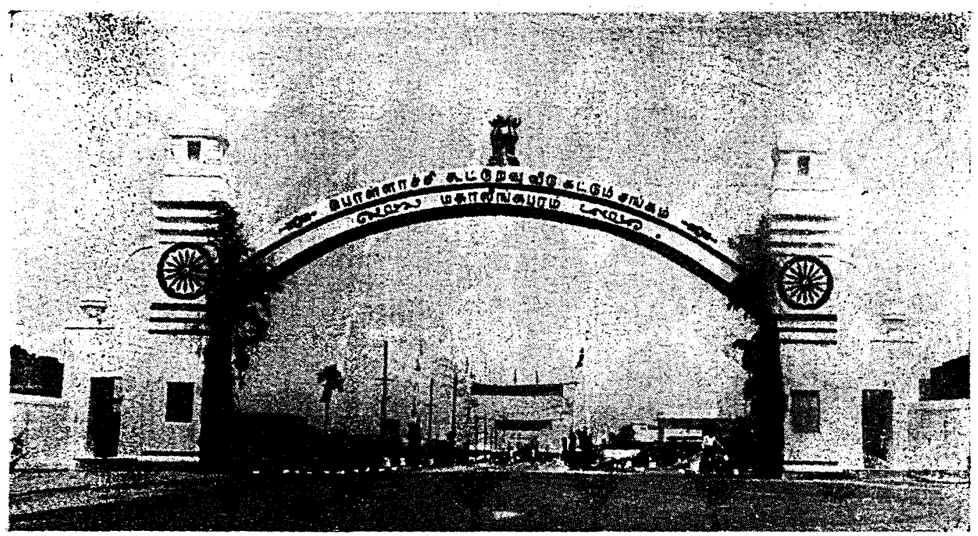
Consumer Societies

Another type of co-operative serving the people in towns is the consumers societies. They purchase household provisions and other articles of daily necessity in bulk and sell them to their members. In addition to supplying these articles of good quality at reasonable prices, they pay bonus on purchase to the members from their profits. The Triplicane Urban Co-operative Society in the Madras City is an outstanding example of a successful consumers' organisation. There are some consumers stores functioning in the villages also. On 30th June 1960, there were 853 stores both in towns and villages and they had 3.33 lakh members. Their purchases amounted to Rs. 10.49 crores and sales to Rs. 11.39 crores, during the year ended January 1960.

Co-operative housing societies in urban areas are doing valuable service to the middle class and lower middle class people in providing them with houses of their own. They give long term loans to their members for the construction of houses. The loans given which are limited to 80 per cent of the estimated cost of construction are repayable in 20 years. The funds for this purpose are provided by Government. The housing societies implement the Low Income Group Housing Scheme of the Government of India under which loans not exceeding Rs. 8,000 are available to persons whose income does not exceed Rs. 6,000 per annum and the middle in one group housing scheme financed by the Life Insurance Corporation under which loans upto a maximum of Rs. 20,000 are provided

A view of the Ramachandrapuram Co-operative Bank, Thanjavur District





A view of the impressive gateway at the entrance of the colony of houses constructed by the Pollachi Co-operative House Construction Society at Mahalingapuram.

to persons whose annual income exceeds Rs. 6,000, but does not exceed Rs. 10,000. There were 236 housing societies on 30th June 1960 and they have built so far 8,984 houses. The loans outstanding against their members on 30th June amounted to Rs. 280.97 lakhs.

Housing Societies

Housing societies for industrial workers have also been formed for the construction of houses for them under the Subsidised Industrial Housing Scheme of the Government of India under which 25 per cent of the cost of construction (subject to the standard of cost fixed) is provided as a subsidy and 65 per cent as loan. There are 22 such societies and they are implementing schemes involving 1,041 houses with State assistance amounting to Rs. 22.76 lakhs by way of loans and Rs. 9.09 lakhs by way of subsidy.

While the housing co-operatives finance the construction of new houses, house mortgage banks grant loans to house owners for maintaining their houses in good repair and making extensions or additions to them where necessary. These are institutions of comparatively recent origin. To finance these societies a Central House Mortgage Bank has been established at Madras.

Co-operative societies of different types are thus helping the people both in the villages and towns in various ways. The rapid expansion of the movement that is taking place in many and varied directions is an indication of the greater awareness on the part of the rural and urban people and their appreciation of the usefulness of co-operative effort. It cannot, however, be denied that there are still many, especially the weaker sections of the community, who are outside the movement and therefore not getting the benefit of co-operative services. It should be the endeavour of all concerned to extend the co-operative services to those persons who need them most.



Industrial Development in Madras State

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THE development of industries has been assigned a high order of priority during the Second Five-Year Plan, as well-planned industrialisation is the most important course of economic activity to stabilise the country's economy in all sectors. Industries may be broadly classified as (1) Heavy Industries producing capital goods, (2) Light or Small-scale Industries producing capital goods with the aid of small machinery and power, (3) Village Industries that are traditional in character producing such goods as are consumable within the villages and not involving the use of any complicated machinery and (4) Handicrafts which involve high degree of artistic skill.

In the following paragraphs the industrial development that has taken place in the Madras State is briefly explained.

Heavy Industries

The most important project now implemented in the public sector is the Integrated Lignite Project at Neyveli. The project provides for the mining of 3·5 million tons of lignite per annum. In order to enable the project to operate as a commercial venture, the Government of India have created a Government limited company under the title of "The Neyveli Lignite Corporation, Ltd." The project is an integrated one, the constituent schemes being (1) Mining Scheme, (2) Thermal Power Station Scheme, (3) Fertiliser Production Scheme, (4) Briquetting and Carbonizing Scheme and (5) Clay Washing Scheme.

The first unit of the Thermal Power Station is expected to be put into operation in 1961 and the Fertilizer and the Briquetting and Carbonizing Plants are also expected to go into production in the course of the year 1963.

Iron and Steel Plant

The establishment of an Iron and Steel Plant in the State based on the iron ores of Salem district and Neyveli lignite has been engaging the attention of the Government for a considerable time. A team of experts from the German Democratic Republic inspected the sites and studied the feasibility of the project. Their report indicates that the scheme for the manufacture of steel from the iron ores of Salem district is economically feasible. The preparatory work for the setting up of the project has been taken up on hand and a Special Officer in the Senior scale of I.A.S. has been appointed with an appropriate complement of staff to attend to the various administrative and technical items of work, so as to facilitate the implementation of the project at an early date. The Government have also constituted a "Special Cell" to assist and advise the Special Officer on technical and other matters. The Government



Wool processing at the Vinnamangalam Centre inaugurated during December last

have also encouraged the setting up of Pig Iron Plants in the Private Sector and licences have been issued to three Industrial undertakings, viz., Textool Co., Ltd., Coimbatore, Soundararajan Co. (Private), Limited, Madras, and Kalinga Industries, Calcutta. Of these, Textool Co., Ltd., has already commenced production while the other two have asked for permission to have a plant with larger capacity.

Madras Aluminium Co., Ltd., has been registered under the Indian Companies Act to undertake the establishment of an Aluminium Plant in Mettur. Technical Collaboration agreement with Montecatinis has been concluded. The Collaboration agreement has been approved by the Government of India and also capital issue sanction has been received for Rs. 4·5 crores equity and Rs. 1·5 crores preference.

Raw Film Factory

A Photographic Raw Film Factory is to be set up at Ootacamund for the manufacture of photographic raw film and papers. The project will be implemented through the National Industrial Development Corporation in technical collaboration with a French firm of repute. The factory is expected to commence production by the middle of 1962.

It has also been decided to set up a Surgical Instruments Factory in NANDAMBAKKAM near Madras. This Factory, which is to be established with Soviet aid, is expected to produce twenty lakhs of surgical instruments of different kinds each year and provide employment for 2,000 persons.

So far, 378 licences have been issued under the Industries (Development and Regulation) Act, 1951 for the establishment of new industrial undertakings and substantial expansion, etc., in this State and they include four cement factories, nine sugar factories, six fertiliser factories, six factories for manufacturing Heavy Chemicals, two factories for the manufacture of automobiles, one for automobile diesel engines and a number of automobile components like pistons, rings, valves, etc.

Small-Scale Industries

Small-Scale Industries have played a vital role in the economy of our country, their contribution to the national income being very appreciable. Their importance has, therefore, received increasing recognition and it is reflected in the high priority accorded to the development of these industries under the Second Five-Year Plan. The principal needs of the small-scale industries are training and technical advice in the use of improved tools and machines and in the adoption of new techniques, supply of raw materials and power at reasonable rates, grant of financial aid on easy terms, extension of assistance in the marketing of fininshed products and provision of ready-made factory space and servicing facilities. To fulfil these needs, the Government of Madras have implemented several schemes, including five Tool Room Shops, fifteen Common Service Facility Workshops, eighteen Pilot Production Centres, Six Training and Demonstration Centres, five Social Welfare Schemes, eleven Sales Depots, one Technical Information Section, one Raw Material Depot, thirteen Industrial Co-operatives and ten Industrial Estates and Colonies. The progress made in the various fields are detailed here.

Tool Room Shop

There is a tool room shop at Guindy, where servicing work is undertaken in precision grinding, jig boring, etc., and in the supply of special tools, jigs, fixtures, dies, etc. A designing section has also been set up to work in conjunction with the tool room. Similarly, a tool room has been provided in the Industrial Colony, Erode, and three such units are expected to start functioning in the Industrial Colonies at Pettai, Virudhunagar and Tirrchirappalli in the current year.

Fifteen Common Service facility workshops have been provided in the State, and they include the Forging and Heat treatment and the finishing shops at Guindy set up with the help of a Swedish Expert and the Electrical Goods Unit, Guindy, set up with the help of three Hungarian Experts. These workshops serve the needs of organized private small scale units, as well as the artisans. During last year, about 500 small scale industrialists availed themselves of the facilities available in the various units.

A Common Lease Shop has also been set up with the T.C.M. aid in the Industrial Estate, Guindy, where certain machines are hired out to industrialists along with Government workmen.

Pilot Production Centres

Out of the eighteen Pilot Production Centres, eleven have so far gone into production and articles such as galvanised structurals, pressure die cast parts, ferrous castings, splints and veneers, bolts and nuts, cycle parts, sheet metal articles, L.T. Insulators, etc., are being produced in these Centres. The Cycle Assembly Unit at Thanjavur and the Salt Glazed Pipes Factory, Quartz Crushing Plant and the Handloom Parts Unit at Salem and the Unit for the manufacture of Fractional H.P. Motors at Guindy are expected to go into production during the current year.

There is a Technical Information Section in the Industrial Estate, Guindy, which contains a variety of technical books, periodicals, manuals, bulletins, catalogues of machines, model schemes, survey reports, etc., and they are made available for the visitors who come for consultation.

Six Training and Demonstration Centres are now functioning in the State to impart training in wood working, blacksmithy, sheet metal work, etc., Besides these centres, six mobile vans, three for wood working and three for blacksmithy, are also being sent to villages periodically for popularizing and for training artisans in the use of power operated machines.

Grant of loans

A sum of Rs. 25 lakhs has been provided for the grant of loans to small scale industrialists during the year 1960-61. During the period from 1st April to 31st October 1960, loans to the extent of Rs. 18,48,689 were sanctioned to 2,804 industrialists and a sum of Rs. 10,43,255 has actually been disbursed so far to 2,182 industrialists.

Under the scheme 'Industrial Estate and Colonies' which is intended to provide factory space at a reasonable rent to all small entrepreneurs with a complete range of Industrial Services, two Industrial Estates—one at Guindy and another at Virudhunagar—and five colonies, one each at Madurai, Tiuchirappalli, Erode, Pettai and Marthandam have been established and they are now functioning. Three more colonies at Thanjavur, Katpadi, and Salem are expected to start functioning during the current year.

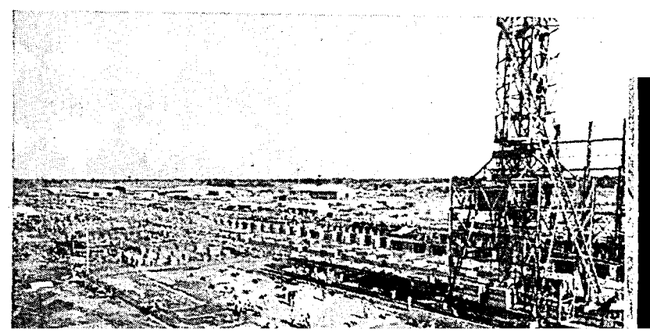
Thirteen Industrial Co-operatives have been organized and these include the Perambur Arunthathiyar Leather Workers' Co-operative Society, Sriperumbudur Bolts and Nuts Society, Kancheepuram Metal Workers' Co-operative Society, Nagapattinam Steel Trunk Workers' Society, Kumbakonam Co-operative Metal Works, Ammapet Blacksmity and Carpentry Society, Dindigul Lock Workers' Society, Talayuthu Timber Works, Marthandam Co-operative Timber Works, etc.

Coir Industry

There is a great scope for the development of Coir Industry in this State and the Government have, therefore, sanctioned the establishment of a Coir School at Ethamuzhi in Kanyakumari district to give training to the workers in the manufacture of mats, mattings, brush mats, etc., using modern machines and equipment. The total cost of this scheme is Rs. 1·82 lakhs and the school is expected to start functioning in 1961-62.

A scheme for the establishment of a Pilot Plant for the manufacture of mattress and bristle fibre in Tirunelveli district at a total cost of Rs. 1·09

A view of the Neiveli Lignite Project Site



lakhs has been sanctioned by the Government. This scheme envisages the adoption of the process and machinery commonly employed in Ceylon and the unit is expected to start working in 1961–62.

The Government have also sanctioned the establishment of Coir Demonstration-*cum*-Training Centres at Keelakarai and Adirampatnam for the benefit of the repatriates from Ceylon. The Unit at Keelakarai has since been changed to Periapatnam. These units will start functioning in the current year and will be run for one year.

Development of Handicrafts

The handicrafts of South India are its greatest heritage and with the advent of the Machine Age, they began to fade away and were in imminent danger of being virtually lost to posterity. A planned attempt was made to rehabilitate the crafts and several schemes were formulated to revive the forgotten handicrafts and resuscitate the languishing ones to suit the present conditions.

In many of the crafts there are only a few master craftsmen pursuing the crafts on traditional lines in remote villages. The training of adequate number of artisans in the various crafts was therefore given priority, and thirty-six departmental Training, Servicing and Production Centres have been set up throughout the State for the development of the following handicrafts:—

(1) Art Metal Work at Madurai and Swamimalai, (2) Bell Metal Work at Nachiarkoil and Vagaikulam in Tirunelveli district, (3) Fancy Leather goods at Guindy and Elayangudi, (4) Lace and Embroidery at Palayamkottai and Gopichettipalayam, (5) Paper Toys and Paper Machine articles at Thanjavur and Panruti, (6) Aloe fibre products at Neduveyal, (7) Palm-leaf products at Pallapatti, etc., (8) Palmyra furniture at Nazareth and Manamadurai, (9) Cane and Rattan Work at Wallajapet, (10) Bamboo Industry at Madurai, (11) Glass Bangle Industry at Nedumarthy, (12) Printing and Dyeing at Rajapalayam, (13) Weaving Woollen Cumblies and Druggets at Kolakudi, (14) Cloth dolls at Palayamkottai, (15) Ornamental Handles at Madurai, (16) Kalamkari Printing at Sickinaickenpatti, (17) Sculpture and casting moulds at Mahabalipuram, (18) She toys at Madras, (19) Weaving Carpets and Druggets out of sun hemp fibre at Gopalasamudram and Salem, (20) Painting Pictures on wood at Thanjavur, (21) Sungadai Saree Printing at Kadayanallur and (22) Wooden toys at Erode.

A Reasearch Centre for Glazed Pottery has been set up at Madras and it has carried out a systematic study of clay deposits and stadardized glazes and has evolved a number of new designs.

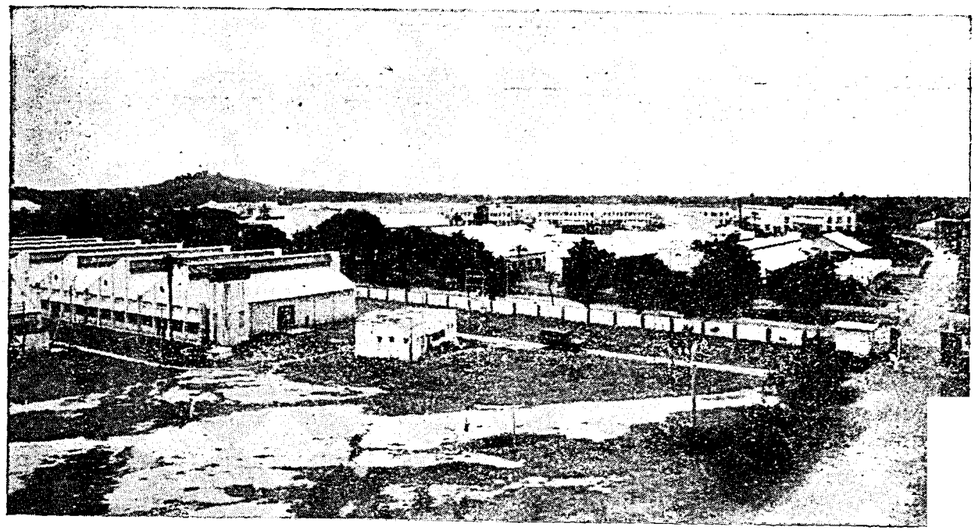
Wool Processing Centre

A Wool Processing Centre has been established at Vinnamangalam in North Actot district as a joint venture of the Madras and the Mysore Governments to make available to the drugget manufacturers of the two States quality wool for druggets meant for export. The initial cost of the scheme is Rs. 13·10 lakhs and it is to be met equally by the Governments of Madras, Mysore and the Union Government.

Financial assistance was provided towards working capital, etc., for the expansion of the Victoria Technical Institute, Madras, and the Handicrafts Emporia at Madras and Madurai and for training candidates in handicrafts in private institutions such as Stree Seva Mandir, Madras, etc.

The lack of proper organization among handicrafts workers who are scattered throughout the country, has been the main handicap in the development of handicrafts. A number of new Handicrafts Industrial Co-operative Societies have therefore been organized in this State and financial assistance has been provided to them in the form of loan towards working capital and share capital and grant towards the cost of special supervisory staff. A Central Handicrafts Marketing Co-operative Society has been established at Madras.

Five Sales-*cum*-Procurement Depots have been started at Tirunelveli, Thanjavur, Coimbatore, Salem and Rameswaram. One more depot is also expected to start functioning in the current year at Tiruchirappalli.



A view of the Industrial Estate at Guindy

At the commencement of the Second Plan, Madras State had about 1,500 acres under mulberry in the districts of Coimbatore, Salem and Nilgiris for pursuing the Silk Industry. As the State had potentialities of development, several schemes of mostly servicing nature were implemented during the Second Five-Year Plan period with the result the present extent under mulberry is about 2,800 acres in the State. The Industry has been newly introduced in the districts of Tirunelveli, South Arcot and North Arcot. The sericulturists in the State receive technical guidance from the staff who are stationed in important centres. Demonstration Farms and Chawkie units were established in Hosur, Talavadi, Tenkasi and Masanagudi todemonstrate to the sericulturists the rational practices in the industry. A Government Mulberry Graft Nursery has been established with a view to produce annually five lakhs mulberry grafts for bringing about 50 acres of graft mulberry, as grafts are found to be superior to local mulberry. A cross breed grainage with an annual capacity of five lakhs disease-free seeds production has also been established with a view to supply the silkworm rearers with protected silkworm eggs free from diseases. A seed campaign centre in Denkanicottah for local races and the existing foreign race stations in Hosur and Coonoor for foreign races have been reorganized for hybridisation work. Four Government cocoon markets in important sericultural areas have been established to afford ready marketing facilities to the sericulturists at a fair price. The reeling of silk which involves a good amount of investment has also been taken care of. An Industrial Co-operative for Silk Reeling has been started in Talavadi with 300 members.

Craftsmen Training Scheme

In order to meet the growing demand for technical manpower required for implementing schemes of national development, schemes to turn large number of craftsmen in engineering, building and vocational trades on a country-wide basis have been taken up in the State. Significant among them are the four Industrial Training Institutes at Cuddalore, Pettai, Tirunelveli, Nagapattinam and Virudhunagar. Apprenticeship Training schemes, evening classes for Industrial Workers and Integration of Industrial School sections. A scheme for the establishment of work and orientation centres for the educated unemployed has also been taken up.

TARGET PARTICULARS

I. *Small Scale Industries—*

	1956-57 to 1958-59.	1959-60.	*Requirements for* 1960-61.	*Total.*
			(RS. IN LAKHS)	
1 Net expenditure on Block loans	62·61	22·30	25·00	109·91
2 Net expenditure on other small scale industries schemes.	175·10	78·91	84·92	338·93
3 Net expenditure on Estate and Colonies	74·79	31·43	80·44	186·66
4 Total net expenditure	312·50	132·64	190·36	635·50
5 Receipts	25·19	41·22	64·39	130·80
Total Gross Expenditure ..	337·69	173·86	254·75	766·30

The above expenditure does not include the sum of Rs. 2·70 lakhs spent on small scale industries schemes other than Block loans and the sum of Rs. 4·21 lakhs on the Industrial Estate, Guindy, during 1955–60 in connection with preliminary work.

II. *Handicrafts—*

Nature of scheme.	*Achievements, 1956–57 to 1959–60.*			*Anticipated achievements.*			*Achievements in Second Plan.*		
	Number of Schemes implemented.	*Expenditure.*	*Number of persons trained.*	*Number of Schemes.*	*Expenditure.*	*Number of persons trained.*	*Number of Schemes.*	*Expenditure.*	*Number of persons trained.*
Sales-*cum*-procurement Depot.. ..	5	4·96	..	1	2·45	..	6	7·41	..
Training Service Production and Research Centres.	32	15·29	472	6	6·57	122	38	21·86	594
Financial Assistance to Private emporia and other institutions.	9	5·48	..	..	..	..	9	5·48	..
Financial assistance to Handicrafts Industrial Co-operative.	16	3·81	..	3	1·83	..	19	5·64	..
	62	29·54	472	10	10·85	122	72	40·39	594

III. *Sericulture.*—The Sericultural schemes implemented during the Second Plan are mostly centrally assisted. Against a sum of Rs. 11·12 lakhs, sanctioned for sericulture by way of grants, loans, State share, etc., the expenditure estimated by the end of the II Plan is as follows:—

	RUPEES IN LAKHS.
1 Expenditure out of Grants from Centre.	3·97
2 Expenditure out of Grants from Loans.	0·65
3 State share	5·08
Total ..	9·70

The physical target achieved in respect of production is as follows :—

1 Government Silk Farm, Tenkasi—
Acreage under mulberry—28·00 acres.
Cocoon production—840·00 acres.

2 Government Gut manufacturing Section—
Guts—4·34 lakhs.
Foreign race cocoons—7·74 lakhs.

3 Silk Reeling Unit, Hosur Silk–1,900 pounds.

4 Cross Breeding Grainage—Berigeri Gross Breed eggs—5·04 lakhs.

5 Mulberry Graft Nursery—Hosur Mulberry grafts—5·08 lakhs.

6 Hill Rearing Station, Coonoor—Foreign race eggs—1·29 lakhs.

7 Expansion in new areas—Mulberry acreage —300 acres.

GRAFTSMAN TRAINING SCHEMES.

Name of the scheme.	*Position at the end of I Plan.*			*Target prescribed for II Plan.*			*Targets achieved.*		
	ITIS	*Hostel.*	*Seats.*	*ITIS.*	*Hostel.*	*Seats.*	*ITIS.*	*Hostel.*	*Seats.*
1 Opening of new Industrial Training Schools.	..	..	..	4	..	1,204	4	..	1,204
2 Development of ITIS Centres ..	6	..	768	..	..	308	..	..	308
3 Integrated ITIS	..	..	..	..	..	888	..	..	888
Total Institutional Training	6	..	768	4	..	2,400	4	..	2,400
4 Apprenticeship training scheme	..	..	..	..	..	305	..	..	305
5 Evening classes for Industrial workers.	..	..	..	..	..	400	..	..	400
6 Work and Orientation Centres for educated unemployed.	..	..	..	3	..	300	3	..	300
7 Provision of hostels	..	..	..	2	..	168	A	..	A

A=The scheme has been sanctioned only during 1960–61 and the construction of hostel is under progress.

It may be seen from the above statement that the facilities in respect of institutional training have been increased to over three times when compared with the facilities available at the end of I Plan besides the introduction of 705 seats under miscellaneous training schemes. The progress made particularly during the year 1960–61 is the starting of one work and Orientation Centre at Madras on 1st August 1960 and an evening class for Industrial workers at industrial training Institute, North Broadway, Madras, besides the introduction of 700 additional seats in the existing seven industrial training institutes/centres in this State.

A THEATRE FOR CHILDREN

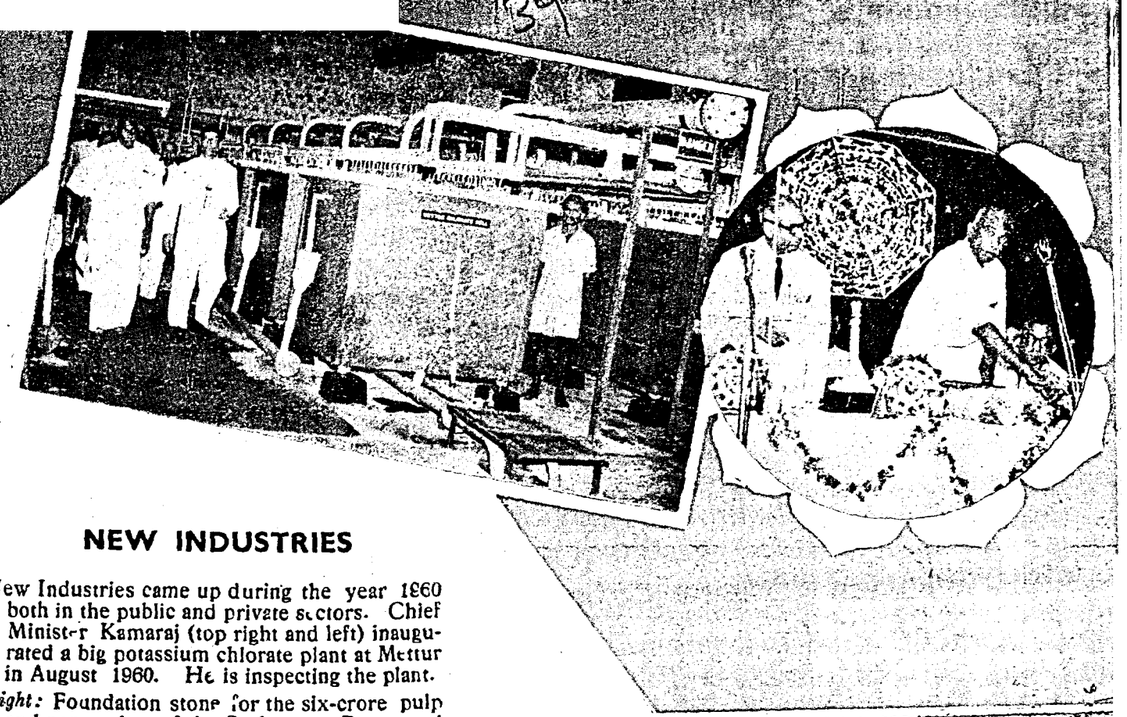
Films that educate and entertain children are being exhibited during every week-end at the well-furnished Children's Theatre in the Government Estate, Mount Road. Hundreds of children troop into this Theatre every week to enjoy these films.

HAVE YOU TAKEN YOUR CHILDREN TO THESE SHOWS?

Patrons of the Children's Theatre, be they little ones or their proud parents, are all praise for this amenity. Srimathi Indira Gandhi said :

"Madras has stolen a march over Delhi which is still struggling with plans for a Children's Theatre".

MADRAS LEADS IN THIS AS IN OTHER SPHERES.



NEW INDUSTRIES

New Industries came up during the year 1960 both in the public and private sectors. Chief Minister Kamaraj (top right and left) inaugurated a big potassium chlorate plant at Mettur in August 1960. He is inspecting the plant.

Right: Foundation stone for the six-crore pulp and paper plant of the Seshasayee Paper and Boards, Ltd., was laid in September last.

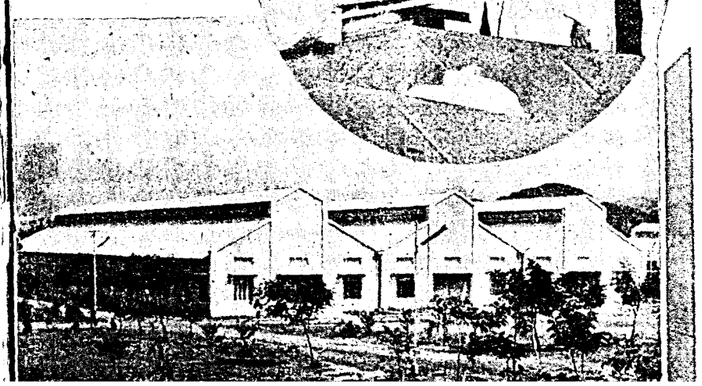
Below · Governor Bishnuram Medhi opened a wool processing centre at Vinnamangalam.

Bottom left: A view of the Centre.

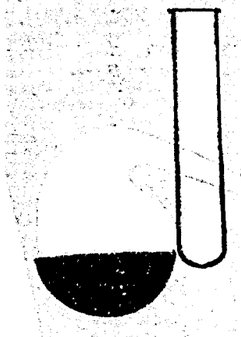
Bottom right: Leader of a team of East German Experts presents a report on the feasibility of a steel plant at Salem to the Chief Secretary

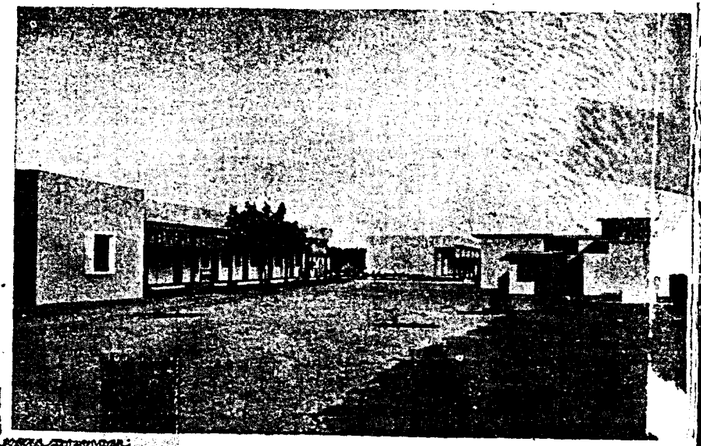






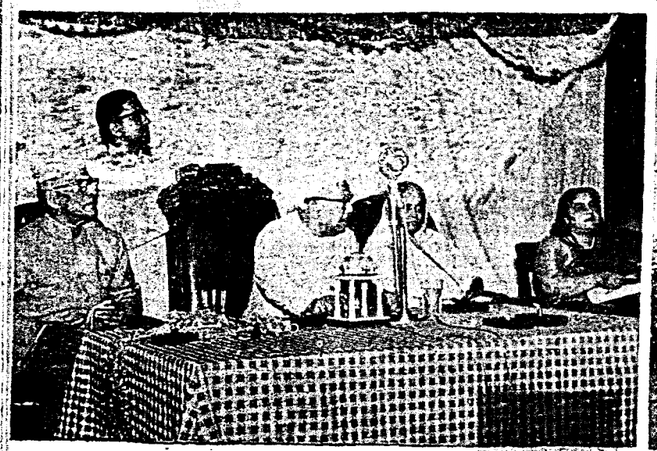


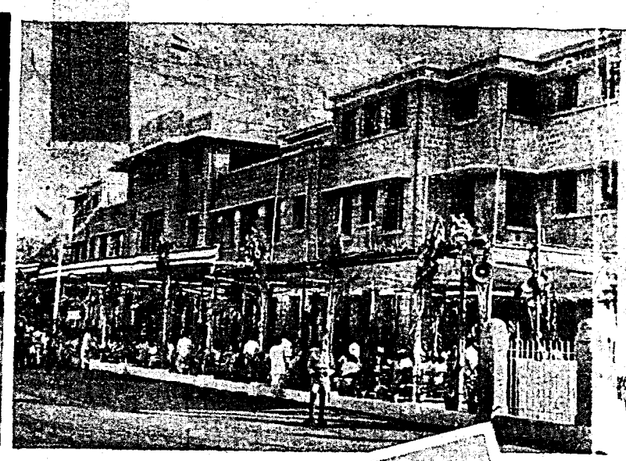


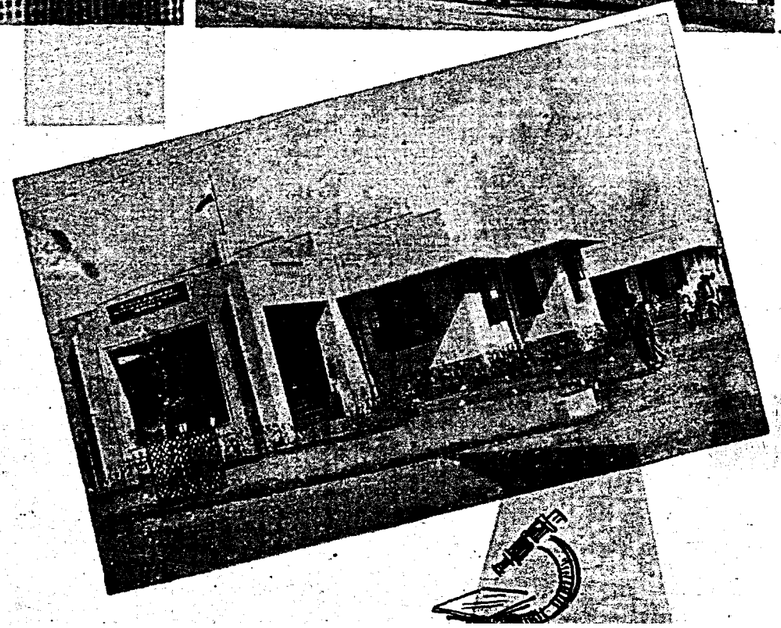


PROGRESS IN PICTURES 1960









HEALTH PROMOTION

During the year more hospital facilities for Tuberculosis patients and convalescents were provided. An After-care and Rehabilitation Centre (top right) for ex-Tuberculosis patients was opened by Governor Bishnuram Medhi, Health Minister Manickavelu presiding (picture above) at Tambaram in September 1960.

Mid-right: The new Maternity block of the Erskine Hospital, Madurai, opened in February last.

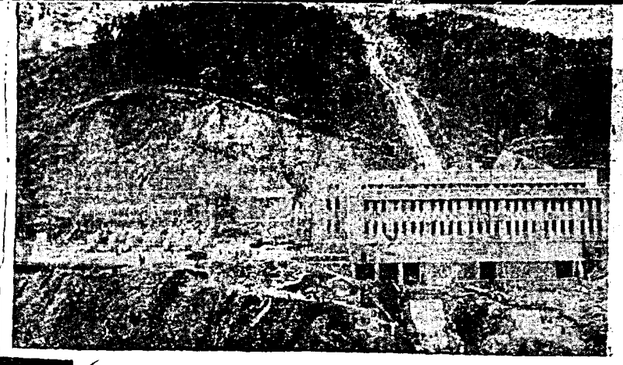
Right: The Tuberculosis Centre at Austinpet, Madurai.

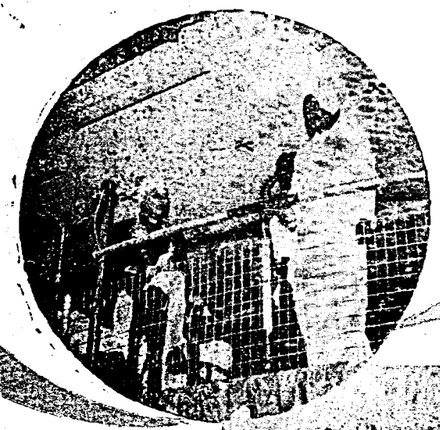
INSIDE

1. *Kundah Project*
2. *Panchayat Raj*
3. *Intensive Agriculture*
4. *New Industries*
5. *Health Promotion*
6. *Visitors from Abroad*
7. *Tiruttani Merger*

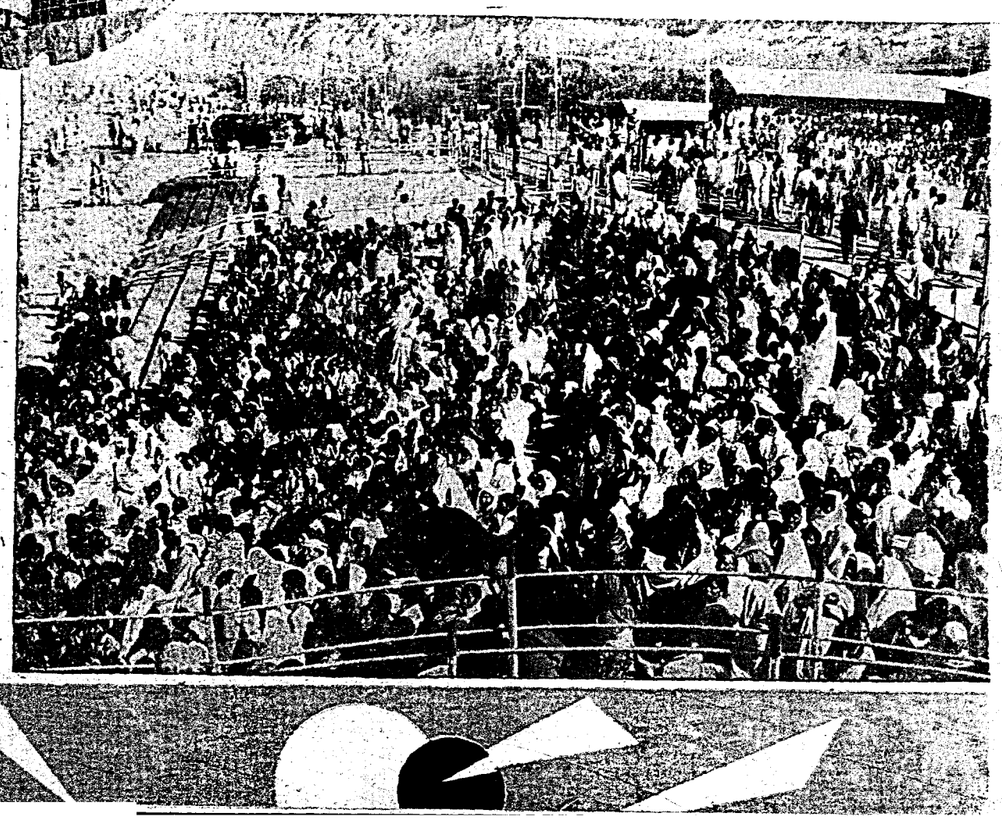
KUNDAH PROJECT

On the 26th of March 1960 a significant landmark in the State's progress towards prosperity was reached with the commissioning of Kundah Power House No. 1 at Kundah Camp, Nilgiris, by the Prime Minister, Sri Jawaharlal Nehru.. The biggest hydro-electric scheme undertaken in the State so far, the 35-crore Kundah Hydel Project is the product of Indo-Canadian collaboration and is designed to yield when completed 425,000 k.w. of power. Picture above gives a panoramic view of Power House I with its transformer yard and penstock pipes.

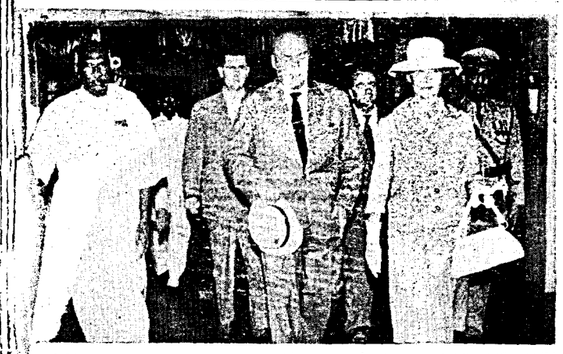




A view of the mammoth crowd that witnessed the commissioning of the Power House by a worker in the presence of the Prime Minister (Picture on the left) is caught in the picture below.



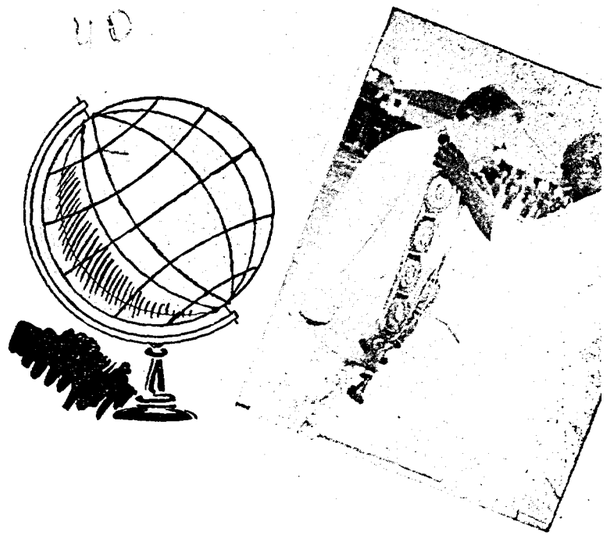












VISITORS FROM ABROAD

Many foreign dignitaries visited the State during the year 1960. *Above:* Dr. V. J. Sukselainan, Prime Minister of Finland. *From top to bottom left:* Mr. C. J M. Alport, Minister of State for Commonwealth Relations, Britain; Mr. Jezef Cyrankiewicz, Prime Minister of Poland; Gamel Abdel Nasser, President of the United Arab Republic; (Madame Furtseva, Deputy of the Supreme Soviet, U.S.S.R.; Mrs. Sirimavo Bandaranaike, Prime Minister of Ceylon. *Below:* Professor Theodor Heuss, former President of the Federal Republic of Germany *Mid-bottom:* Marshal Voroshilov, former President of the U.S.S.R







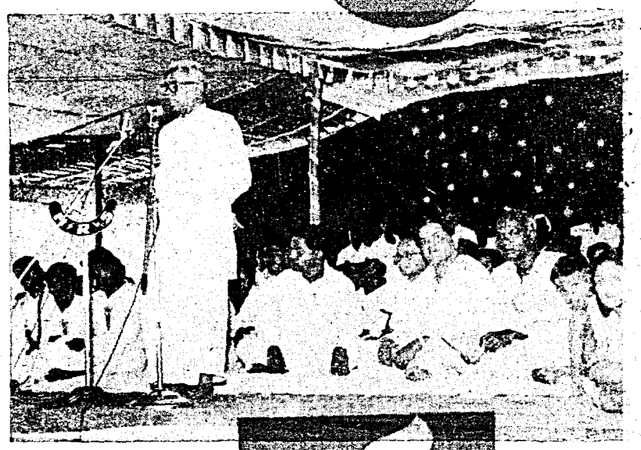
TIRUTTANI MERGER

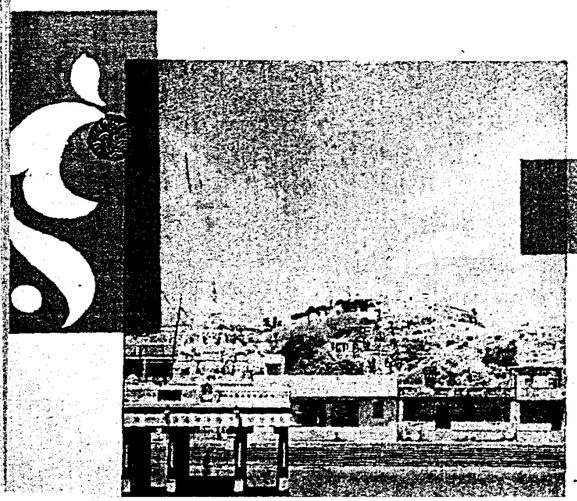
The year was notable for an amicable settlement of the Madras-Andhra b undary problem. The merger of Tiruttani and 286 villages with Madras State highlighted friendly relations with Andhra Pradesh.

Above: A view of the vast enthusiastic crowd that turned up to witness the function.

Right: Home Minister Bhaktavatsalam addressing the gathering on the occasion.

Below: A view of the Tiruttani temple tank with the holy Mantap in the middle.







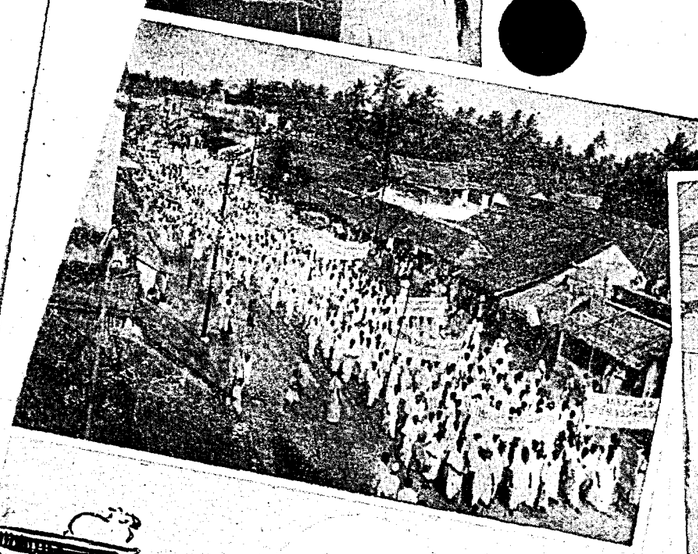
PANCHAYAT RAJ

The accent during the year was on decentralization. The first batch of Panchayat Unions in 75 Community Development Blocks was inaugurated on October 2, 1960 (Gandhi Jayanthi).

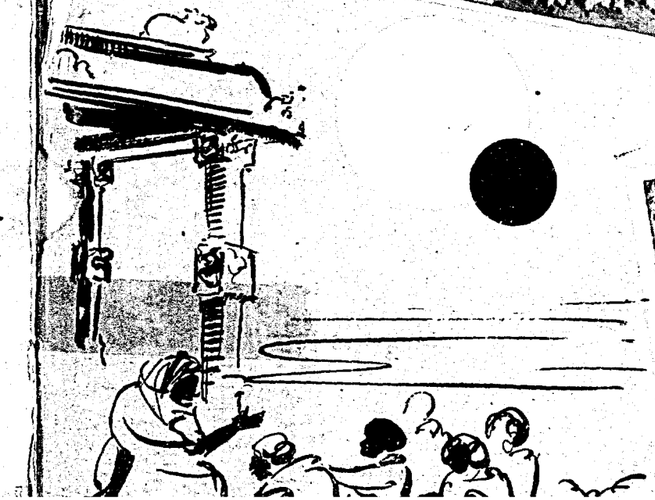
On Left: Chief Minister Kamaraj inspecting map showing the places where Panchayat Raj was to be introduced in Chingleput District.

Mid-left and bottom: Festive and enthusiastic processions were taken out in Cuddalore registering public joy at the ushering in of Panchayat Raj.

Below: Home Minister Bhaktavatsalam inaugurating the Kadambattur Panchayat.











INTENSIVE AGRICULTURE

Under the package deal scheme intensive assistance for increasing agricultural output is being tried in select areas.

Above: Chief Minister Kamaraj inaugurating the scheme at Aduturai in Tanjore District. Dark-shaded portions in district map (top right) indicate the 22 Community Development blocks in which the scheme is being tried.

On right: The Manimuthar bridge near Madurai.

At bottom: The bridge across the Cauvery connecting Erode and Pallipalayam.



When British civilians opposed English medium

K. SUBRAMANIAM, M.A., A.I. E. (Lond.),
Lecturer in English, Madras Christian College, Tambaram.

THE controversy regarding the medium of instruction in schools and colleges is not something new; It is almost a century old. It is erroneously assumed that the English language was thrust on Indians to produce clerks for Government service, and in this connection Macaulay is denounced as the hangman of Indian culture. Whatever may have been the outcome of English education, it must be said that Macaulay had the noblest aim in introducing it. In his famous minutes of 1835 he said, "I feel that it is impossible for us, with our limited means, to attempt to educate the body of the people. We must at present do our best to form a class who may be interpreters between us and the millions whom we govern, a class of persons, Indian in blood and colour, but English in taste, in opinions, in morals and in intellect. To that class we may leave it to refine the vernacular dialects of the country, to enrich those dialects with terms of science borrowed from the Western nomenclature and to render them by degrees fit vehicles for conveying knowledge to the great mass of the population."

Macaulay sincerly hoped that the knowledge of science and literature gained by the upper classes would be filtered down to the masses through translations. The Court of Directors of the East India Company wanted to confine education to the upper classes who had a tradition of education behind them. The reason was primarily financial. It was not felt at any stage that English could always continue to be the medium of instruction. Time and again English educationists emphasised the need to switch over to the vernacular medium and promised special prizes for good translations. If there were not enough good translations, the blame should rest with the educated Indians and not the English.

History of English Education

A cursory glance at the history of English education in Madras would convince anyone of the concern of the English to educate the people whom they governed. It was Sir Thomas Munroe, Governor of Madras, who, in June 1822, asked the various collectors to submit a report regarding the state of education in the Presidency and called upon them to furnish a list of schools in which reading and writing were taught showing the number of scholars in each and the caste to which they belonged, the names of the books generally read, the time the scholars usually continued under instruction, the monthly or yearly payments made by them, whether any of the schools were endowed by the public and if so the nature of

the fund. It was not his intention either to modify or alter the existing system of education. "Everything of this kind", he observed, "ought to be carefully avoided and people should be left to manage their schools in their own way. All that we ought to do is to facilitate the operations of these schools by restoring any funds that may have been diverted from them and perhaps granting additional ones where it may appear advisable".

Exhaustive Report

It was the Collector of Bellary Mr. A. D. Campbell, who furnished the most exhaustive and interesting information about the nature of instruction in his district. It would seem that English was taught only in one school and that all the books in the Telugu and Canarese schools were in verse and in a dialect quite different from that of conversation.

"The alphabets of the two dialects are the same, and he who reads one, can read, but not understand, the other also. The natives therefore read their (to them unintelligible) books to acquire the power of reading letters in the common dialects of business, but the poetical is quite different from the prose dialect which they speak and write and though they read these books, it is to the pronunciation of the alphabets, not the meaning or construction of words, that they attend. Indeed few teachers can explain and still fewer scholars understand the purport of the numerous books they thus learn to repeat from memory. Every school boy can repeat verbatim a vast number of verses, of the meaning of which he knows no more than a parrot which has been taught to utter certain words. Accordingly from studies in which he has spent many a day of laborious but fruitless toil, the native scholar gains no improvement, except the exercise of memory and the power to read and write on the common business. He makes no addition to his stock of useful knowledge and acquires no moral impressions. He has spent his youth in reading syllables, not words and on entering into life, he meets with hundreds and thousands of words, of the meanings of which he cannot form even the most distant conjecture and as to the decension of a noun or the conjugation of a verb he knows no more than of the most abstruse problem in Euclid. The state of education all over the Presidency was more or less the same as in Bellary. Sir Thomas Munroe attributed the low state of education all over the Presidency to the absence of any sufficient encouragement and to the poverty of the people. "The difficulties", he observed, "may be gradually surmounted. The hindrance which is given to education by the poverty of the people may, in a great degree, be removed by the endowment of schools throughout the country by Government and the want of encouragement will be remedied by good education being rendered more easy and general and by the preference which will naturally be given to well educated men in all the Public Offices."

School for Teachers

He proposed the establishment of a school at Madras for the purpose of educating teachers for employment in Government schools of which he suggested that two schools should be founded in each collectorate. Applying for an annual grant of Rs. 50,000 for educational purposes to the Court of Directors of the East India Company, Sir Munroe observed "whatever expense the Government may incur in the education of the people would be amply repaid by the improvement of the country; for the general diffusion of knowledge is inseparably followed by increasing industry, by a taste for the comforts of life, by exertion to acquire them and by the growing prosperity of the people." Munroe's proposal was accepted by the other member of the Government, and a committee of Public Instruction was formed with a view to improving the general education of the people in the Presidency. The committee never tried to impose its views on the people. In all communications it laid great stress on securing the sympathy and co-operation of the people. "Whatsoever system might be formed to facilitate the education and mental improvement of the population, success in its operation must, in a great measure depend,as much on a co-operation on the part of the people, as on the munificence of the Government itself; and with reference to arrangements to be adopted they urged that it should be invariably kept in mind, that no measures could be pursued, whatever advantages they might offer, which were

at variance with the customs and prejudices of the people. Such obstacles must be carefully avoided. Every measure must, as much as possible, be divested of the odium of innovation, and be such as to induce people to go along with the Government in its undertaking."

What they Aimed at

The Government was most anxious to impart education of the Western type to the higher classes of persons possessing leisure and natural influence over the minds of their countrymen as it felt that by raising the standard of education among them it would eventually produce a greater and more beneficial change in the ideas and feelings of the community than one could hope to produce by acting directly on the more numerous classes. It was again the sincere hope of the Government that the intelligent people who had been thus educated may as teachers in schools and colleges, or as writers and translators of useful books, contribute in an eminent degree to the more general extension among their countrymen of a portion of their acquirements they had themselves gained, and may communicate in some degree to the native literature and to the minds of the native community that improved spirit which it was hoped they would themselves have imbibed from the influence of European ideas and sentiments.

The absence of a vernacular literature and the impossibility of producing translations of western science and literature within a short period necessitated the use of English as the medium of instruction. But it was always hoped that the vernaculars would ultimately become the media of instruction.

Opposed English Medium

As late as 1851 when proposals for establishing a University had been agreed upon, Sir Henry Pottinger, Governor of Madras, said that "my own firm persuasion is, from past personal experience, as well as from enquiry and reading of the reports, that good and careful translations from English into the vernacular dialects must after all be the chief channel of instruction and of communication of knowledge to the great body of population of Southern India" Mr. Thomas, the then Chief Secretary, also agreed with Mr. Pottinger on the importance of vernacular education. He was of the opinion that the system which had been adopted both in this and in the Bengal Presidency, and "which contemplates only the imparting of a high measure of education to a few, exclusively through the medium of English, must fail to produce any great or general effect upon the national mind. "It appears to me", he wrote, "to reverse the natural order of things, and that the attempt to educate and enlighten a nation through a foreign language, is one opposed to the experience of all times and countries. English must ever be, in this land, to the mass, an unknown tongue."

"A smattering of English" he observed "may be acquired by a considerable number about our towns or in immediate communication with the few English residing in India; but the people (the women as well as men) will as a whole only think and speak and read in their native tongues and their general enlightenment or education must and I believe can only be attained through this channel; and a wide basis therefore of a solid, though limited education, through the means of the vernacular languages, must be given to those classes which now receive education, before anything permanent will be effected".

Barren System

"It is upon this broad basis alone, that the superstructure of a high standard and refined education can, it appears to me, be raised and the superior acquirements of the few very highly educated be made to tell upon and influence society. For let us suppose that we have some tens or even crores of youths, out of a population of millions, masters of the higher sciences, well acquainted with all the beauties of Shakespeare, of Milton, and with the learning of Bacon and with the great master minds of Europe, and the rest of the people, not the lowest classes alone, left in their hereditary ignorance, and that ignorance-Asiatic". How, I would ask, is this mass, wholly unprepared by even an elementary education in western learning, to understand and appreciate the acquirements of the highly educated man or how is he to communicate his high attainments in science and literature to them and what possible influence would he therefore

exercise over them ? In Europe, the bulk of the population who receive an education have ordinarily some elementary instruction in the higher sciences—in Astronomy, Natural Philosophy; and individuals throughout all grades of society have, some more, some less knowledge of the higher sciences, and in many cases a considerable degree of science acquirement, which enables and qualifies some in all ranks to appreciate more or less fully the highest discoveries and attainments in science. There is, consequently, a connecting link, running through all society there, which conveys the highest truths of science in an elementary form to all grades, and the acquisitions of the most advanced minds can be, and are, appreciated by those immediately below them, and through them they filter down to the lower grades, who are prepared in their measure, by elementary instruction to receive them.

"But what is the case in this country? High acquirements in science or literature will be appreciated and understood by none, but a few alone highly educated. There is a broad, and impassable line between them and all others. I cannot but think it almost certain therefore, that the only result of a system, which educates a few highly, and leaves the rest of the population without even elementary instruction, is to render all the superior acquirements of that few (made moreover at an enormous cost to the State) barren and fruitless as to any general influence upon society.

Isolated Class

"The youths or men so advanced will exist in a great measure, only as a small isolated class, despising others and neither appreciated, nor esteemed by their fellow countrymen. This must be so far as I can see my way, the inevitable consequence of a system which provides only for the superior education of the few and makes no simultaneous provision upon a large scale for the instruction of the many".

"I need scarcely add, after this statement of my views, that I entirely agree in the importance of a thorough education of the people in their vernacular tongues. It is by this means that they can be taught either to make or understand the translations from western literature and it is through this channel alone there can be the slightest prospect of reaching the women of the country, for they must, it is beyond question, receive all the knowledge they have time and opportunity to acquire, through their mother tongue. If they are neglected, and they remain wholly uneducated, it may safely be predicted that India will continue, as the rest of Asia, in its semi-barbarous ignorance. I consider therefore instruction in the vernaculars to be essential, and that without it a scheme of education will be most limited or partial in its effects, and of comparatively little value."

Encouraged local languages

It must be evident from the foregoing that the English were quite convinced that ultimately only the vernacular languages could be the media of instruction and they did everything possible to encourage the development of vernacular literature. It is rather unfortunate that the educated classes did not very much bother to transmit through translation the benefits of their knowledge to the masses. It redounds to the credit of the English that their language was never substituted for the vernacular languages of the country and they introduced it where there was a demand. They encouraged a study of the vernacular *pari passu* with English.

It is one thing to learn English as a language and quite another to have it as the medium of instruction. Learning through a foreign medium encourages cramming and inhibits original thinking the learner concentrates on expression rather than content. English must be learnt as a language as it is an open sesame to science and technology but it need not be the educational medium. It was made the medium in the nineteenth century as the Eastern literature then was very deficient in modern discoveries and improvements and as there were no satisfactory translations. The 1854 Despatch from the Court of Directors of the East India Company strongly advocated the enrichment of the vernacular language. *Inter alia* the Despatch says "It is neither our aim nor desire to substitute the English language for the vernacular dialects of the country. We have always been most sensible of the importance of the use of the languages which alone are understood by the great mass of the population. These languages, and not English, have been put by us in the place of Persian in the administration of justice, and in the intercourse between the officers of Government and the people. It is indispensable, therefore, that in any general system of education the study of them should be assiduously attended to. And any acquaintance with improved European knowledge which is to be communicated to the great mass of the people, whose circumstances prevent them from acquiring a higher order of education, and who cannot be expected to overcome the difficulties of a foreign language, can only be conveyed to them through one or other of these vernacular languages.

The proper medium

"In any general system of education, the English language should be taught where there is a demand for it; but such instruction should always be combined with a careful attention to the study of the vernacular language of the district, and with such general instruction as can be conveyed through that language. At the same time, and as the importance of the vernacular languages becomes more appreciated, the vernacular literatures of India will be gradually enriched by translations of European books, or by the original compositions of men whose minds have been imbued with the spirit of European advancement, so that European knowledge may gradually be placed in this manner within the reach of all classes of the people. We look, therefore, to the English language and to the vernacular languages of India together as the MEDIA for the diffusion of European knowledge."

The sense of fair play and justice of the English is vividly brought out in this extract.

No Alternative

It is often contended that there are not good translations to justify a change over to the regional medium. Authors won't come forward to undertake translations unless there is a demand and there won't be a demand unless the medium is changed. This is a vicious circle. A beginning has to be made and the progress will have to be necessarily slow as otherwise any small mistake would affect generation of students. While speed can be justified in other fields, it can never be justified in the sphere of education where all concerned must hasten slow.

The zealots of nationalism assert that the Zeitgeist is against English and hence must be elbowed out of existence. In the Kingdom of Knowledge there can be no frontiers and the principle of peaceful co-existence is applicable to languages as it is to countries.

BHILAI PLANT COMPLETED

With the commissioning of the Merchant Mill the last of the rolling mills—the construction of the entire Bhilai Steel Plant has been completed. This mill will turn out 2,55,000 tons of finished steel every year.

Bhilai Steel Works are designed to produce annually one million tons of steel to be rolled into 770,000 tons of marketable products including rails and railway bars, beams and other heavy structurals and billets for re-rolling mills. Capacity of the plant will be expanded to 2½ million tons under the Third Five-Year Plan.

Meanwhile the Bhilai Steel Works had produced up to December 1960 about 978,000 tons of pig iron and 340,000 tons of steel. About 565,000 tons of pig iron and 245,000 tons of steel products have been despatched to consumers all over India. About 96,000 tons of pig iron and 15,000 tons of steel billets have also been exported from Bhilai to Pakistan, Japan and United Kingdom.

Madras Beckons . . . .

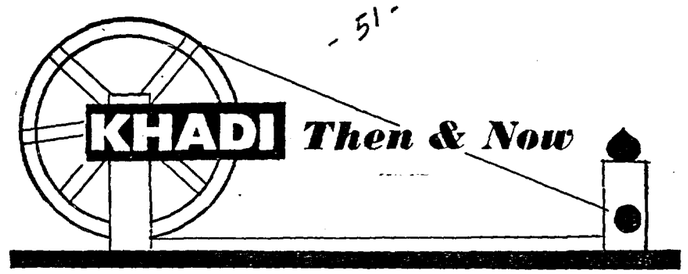
* * * *The temples of Madras, nestling against swaying palms, their tall towers standing as sentinels of an ancient civilisation which is very much alive and their huge halls and corridors proclaiming the deftness and dexterity of the sculptor, constitute the centre and source of a cultural and religious tradition which, though it has fitted itself into the changing pattern of modern life and living, yet remains picturesquely distinct.*

* * * *The hill stations of Ooty and Kodaikanal, with their invigorating climate and scenic splendours are ideal for rest and recreation. Their wooded slopes and majestic peaks, their grand waterfalls and picturesque lakes hold the visitors in thrall.*

* * * *Lovers of wild life may get endless thrills through a visit to Mudumalai situated in the Nilgiris. Here they can see elephants and bears, tigers and bisons, etc., in their natural home. Facilities for seeing wild animals are provided to visitors. Vedanthangal near Madras is a bird sanctuary where a visitor can see a variety of birds.*

* * * *Besides these, Madras provides the tourist a variegated fare. All the year round there are fairs and festivals which bring to life stories and traditions, arts and rituals of a long past age which have an allure all their own. They delight, educate and also entertain.*

A VISIT TO MADRAS WILL BE REWARDING



R. PARTHASARATHI, B.A., B.L.,
Director of Khadi.

FOUR decades ago when Gandhiji rediscovered the Charkha and brought it out from oblivion, he offered it to the unemployed in the villages as a means of employment. The coarse cloth woven out of the thick yarn produced on the Charkha then brought new life to the villages. Khadi was then considered a symbol of nationalism and of patriotic spirit and as the uniform for the non-violent fighters of freedom. Khadi had then acquired a national significance.

But Gandhiji himself never stressed the political aspect of Khadi. On the other hand, he put the Khadi programme as one of the chief planks of the constructive programme, as a means to relieve unemployment and poverty in the villages. Whatever political significance might have been attached to Khadi then, it has gradually disappeared and today the economic aspect which Gandhiji stressed has come to invest it with the importance it deserves in the national economy.

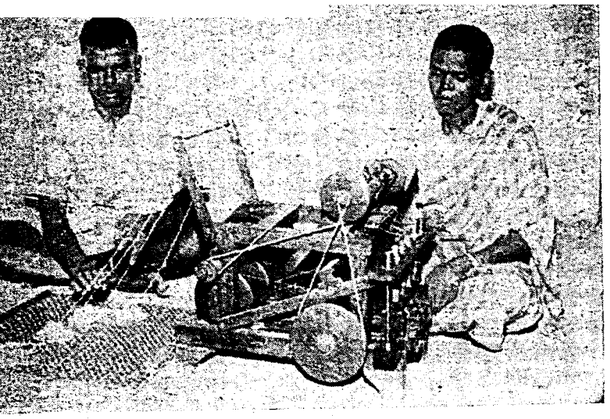
Basic principle

Gandhiji viewed the charkha as the panacea for the unemployment and under-employment for the millions of people in the villages who form 80 per cent of our population. To-day the basic principle which sustains the charkha lies in its economic importance as a simple and easy means of affording relief to millions of unemployed people at comparatively little cost.

Even two decades after Gandhiji had started the Khadi programme, it could be effectively pursued only on a limited scale. The reason is not far to seek; for, from the beginning, such a programme had to fight against odds. Apart from the heavy competition from mill cloth, foreign and Indian, under an alien Government there was not only not any encouragement for the programme but positive discouragement and antipathy. If, in spite of these odds, the charkha took root, it proved only the soundness of its basic concept. It was only after the attainment of Independence that the Khadi programme took rapid strides. Before Independence, the people who benefited by the charkha could be counted in thousands; but after Independence, the number has swelled to lakhs. To-day the Khadi Industry gives employment to nearly 15 lakhs of people all over the country and Khadi production has expanded tenfold since Independence. Nearly 50 million yards of Khadi worth about Rs. 9½ crores has been produced last year. This year the production is likely to increase by fifty per cent.

A peasant of South Arcot district who earns Rs. 120 per month by carding cotton for the Ambar Charkha





The wife of a Policeman who with her husband's assistance spins on the ambar charkha and earns Rs. 60 per month.

Honoured place

The reason for this tremendous development is not far to seek. When the national Government took over the administration of the country, after Independence, Khadi was given an honoured place. This was done not because of sentiment or past associations but purely because of the duty cast on any responsible democratic Government to seek ways and means to remove poverty and to afford relief to the unemployed people. The charkha offered a ready and simple solution for rural unemployment and the Government naturally recognized its importance in the economy of the country. Economists and Planning experts have recognized the importance of Khadi and village industries and therefore these industries now find a place in our National Plans.

Madras Government's Lead

It was given to the Madras State Government to set an example to other States by taking up the Khadi programme as an integral part of rural development. In 1947, the Government of Madras took over from the All-India Spinners' Association four main centres in two or three districts and took up the Khadi work covering about 136 villages. At that time, there were about 15,000 spinners on the rolls when the Government took over the centres and the spinning wages earned by them was to the tune of Rs. 3 lakhs per year. There were 500 weavers under the Khadi Scheme and they earned Rs. 2½ lakhs as weaving wages per year. To-day the Khadi Scheme has been introduced in all the districts in the State and charkhas have been introduced in 168 blocks. To-day there are 22 Main Centres run by the Department of Khadi alone and 109 sub-centres. There are over 2 lakhs of spinners and nearly 6,000 weavers on the rolls of the department's centres. Besides the Khadi Department, the Tamilnad Sarvodaya Sangh (successor to All-India Spinners' Association and Akihil Bharat Sarva Seva Sangh), Gandhi Ashram Tiruchengode, Gandhigram and other institutions are also engaged in Khadi development in the State. There are now, in the whole State over 4 lakhs of spinners and 10,000 weavers employed in the Khadi industry and Rs. 2½ crores worth of Khadi is being produced annually.

Advent of Ambar Charkha

Most of these 4 lakh spinners use the Kisan Charkha which is of the older type. In 1956, Ambar Charkha which was the original invention of Sri Ekambaranathan who hails from Tirunelveli district was introduced. There are now nearly 20,000 spinners who have taken to the Ambar Charkha in the State. The Khadi Department alone has got 38 Ambar Training Centres (Parishramalayas) where spinners are given three months' training on the Ambar Charkha. The other institutions also have their training centres and have trained an equally large number of Ambar Spinners.

The advantage of the Ambar Charkha is that it can produce more yarn, almost three times, than a Kisan Charkha and an Ambar spinner can earn anywhere between Rs. 1·50 to Rs. 3 per day whereas the spinner on the traditional Charkha can earn only about 8 to 12 annas per day. While the traditional or Kisan Charkha can serve as a useful supplementary occupation in agricultural homes, the Ambar Charkha can also be a whole-time occupation even for men.

Prospects for Khadi

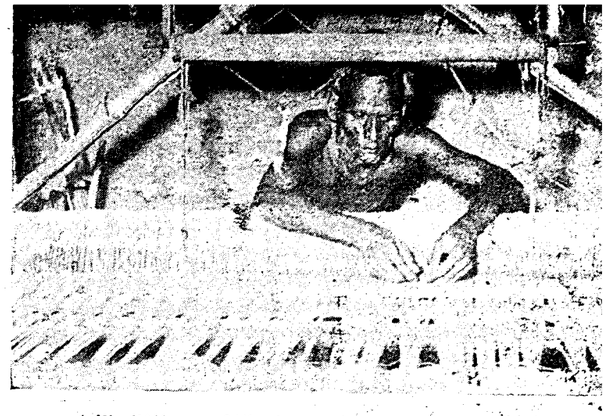
The scope and prospects for Khadi as a village industry are indeed very large and bright; but still the charkha has to go a long way before it can establish itself firmly. From the consumers' point of view, Khadi offers very attractive and colourful varieties now and no longer can the old hackneyed criticism that Khadi is coarse and

cannot satisfy any taste be trotted out. It needs only a visit to any of the Khadi shops to find out if Khadi cannot satisfy any taste and if there are not fine and attractive designs and varieties in Khadi.

The other criticism which still holds sway is that Khadi is costlier than mill or handloom cloth. This of course cannot be denied. But the calculation of cost cannot merely be related to money value. Unemployment costs the nation heavy loss and it has to be borne by the people directly or indirectly. To the extent that Khadi relieves this unemployment, the incidence of the burden on the nation is lessened and therefore the difference in price of Khadi and other cloth is to be set off against what is a gain by the employment opportunity that Khadi can give. The Central and State Governments and Khadi institutions give a total rebate of 22 naye Paise on all cotton Khadi retail sales and this is an advantage which the consumer gets. The question often asked is why so much money is wasted by way of this rebate which is an artificial prop for Khadi? This is a fallacious argument. Any infant industry has to have adequate protection from the State and protection is given in a small measure through rebate. Comparatively speaking, the amount involved is very small when other industries are taken into account. The mill industry itself has benefited to the tune of over Rs. 1,200 crores over the past 20 years by way of protective tariffs and other protective measures which have been designed to make the textile mill industry stand on its own legs.

Self-sufficiency Ideal

A re-orientation in the ideal and rethinking of the Khadi concept has recently come over those who are engaged in Khadi work. It is the considered view of Khadi economists and experts



A Khadi Weaver of Ulundurpet who earns Rs. 100 per month

that the basis of Khadi cannot be merely commercial, and it can never be a competitive or commercial industry like many other industries. If it has to have a permanent place in the national economy, it should be integrated with the rural economic structure which envisages all round self-sufficiency in production of essential commodities. Thus Khadi and village industries should be patterned into an economic frame for the villages and the rural population should be able to produce their own cloth as they should be able to grow their own foodgrains and other necessities of life. This would make them less dependent on outside factors and would make them economically independent of the ever changing urban economy. If this idealistic approach should be successfully achieved in practice, there is no need to worry about the future of Khadi. Stress is being laid on this "Naya Mode" or new concept and the Khadi planners and those engaged in Khadi developement are now looking forward to putting it into practice. Then khadi will not need even the type of meagre protection it is getting through rebates and subsidies from Government.

EMOTIONAL INTEGRATION

In order to stress the importance of emotional integration among the youth of the country, the Ministry of Education at the Centre has decided to encourage various co-curricular activities, such as students' camps and social service projects. In addition to these activities, the content of curriculae and programmes of educational activities in Secondary schools would be remodelled so that the Secondary school-leavers acquire a truly national outlook and are fully equipped for functioning in the modern society.



President inaugurates SCHOOL IMPROVEMENT CONFERENC

The school improvement movement which began in a small way in 1958 gained such great momentum in 1960 that it stirred the conscience of the people in towns and villages and made them offer their contribution for providing education to the children in the State. It has the ingredients of a minor revolution and has attracted notice from all over India. There have been many conferences during the year. President Prasad himself inaugurated a conference at Vellore in August.

Above: The President inaugurates the Vellore Conference.

Top right: Finance Minister Subramaniam distributes free clothing to poor students at the Uttiramerur Conference.

Bottom right: He is inspecting gift books, school equipment, vessels and other articles exhibited at the conference.

Below: Exhibition of books during the Literary Workshop for Children's literature at Walajabad.



Policeman – friend of the People

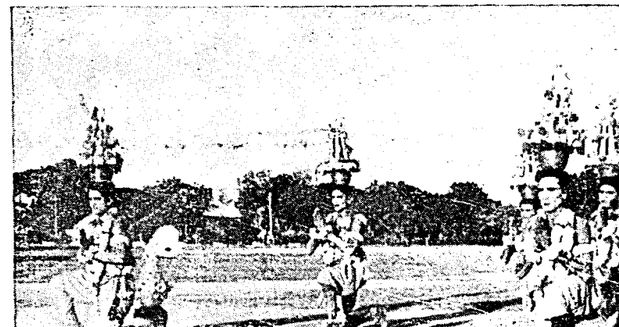
F. V. ARUL, I.P.,
Dy. Inspector-General of Police, Madras.

A policeman is essentially a citizen acting on behalf of fellowcitizens for the common good and is therefore a friend of the people. Unfortunately, there are people who hold the confused view that there is a conflict of interests between a policeman and the public. Such people are obviously prejudiced for some reason or other, for, if a balanced view is taken of the relationship that should subsist between a policeman and the general public, it will be realised that there is an identity of interests. There is no such thing as a public interest and a police interest. The police interest is the public interest and anyone with jaundiced eyes who seeks to divide this interest is certainly doing a disservice to the community. It should therefore be clear that a policeman is motivated entirely by public interest which necessarily makes him a friend of the people.

The protection of life and property of the community and the maintenance of Law and Order are the prime functions of a policeman. His chief role is rather more to prevent the commission of offences than to detect them and it is in this way that the policeman affords protection to the people. The best device that has been adopted by the policeman to prevent the commission of offences is the organisation of beats in all public places. If the citizen is able to go about his work in lonely places or to sleep peacefully at home after a day's hard work, it is due to the policeman who covers his beat with unremitting toil. Those of you who have seen the film entitled "Ungal Nanban" (Your Friend) will appreciate from the opening scenes that the beat constable plods his weary way in the middle of night even though his own family members may be seriously sick at home. It will be proper for me to quote the following lines from the dedication to "The History of the Madras Police" which was published during the Centenary of the Madras Police last year to illustrate this aspect of service by policemen to the people :—

"Once more we see them in their sojournings, now shivering with wet and cold, now scorched by a pitiless and burning sun; uncomplaining, they endure stress and strain and at the last even wounds and death."

The police are not enforcers of law alone. They are alive to the cultural aspects of life also. Picture shows a group of the special Armed Police performing the 'Karagam' folk dance during a camp at Avadi.



These lines bring to my mind very vividly the case of Constable Rathnam of the Madras City Police who, while walking his beat some years ago, came across a robber attempting to despoil a defenceless woman at the point of a knife. He immediately sprang to her defence but was fatally stabbed by his adversary. The Constable thus heroically gave his life for the safety of a woman. If this is how he functions, can a policeman be considered in any light except that of a genuine friend of the people ?

In Enforcing Law

It is true that sometimes a policeman has to be very firm in upholding the law. He is after all carrying out his duty. He should not, for this reason, be considered an enemy of the people. The Law has been enacted by representatives of the people for the good of the community and therefore even though certain aspects of it may not be quite agreeable to individuals, it has got to be enforced for the good of the people as a whole. The policeman who enforces such laws is therefore not inimical to the people. It is, of course, true that a policeman should adopt a friendly approach to the people when enforcing such laws. This lesson is being taught continously to policemen and if an odd one among them defaults in this respect, the people should not jump to the conclusion that the police as a whole are unfriendly.

The role of a friend is perhaps fulfilled best when a policeman undertakes traffic duty. He guides, both vehicles and pedestrains including frail persons and children on the roads so that order is maintained and no harm comes to them. At this moment I have in my mind's eye a cartoon of a policeman holding up a huge stream of vehicular traffic to allow a column of ducklings to cross an intersection from one side to the other.

A view of the Care Home for Beggars in Little Kancheepuram.





The police have evinced keen interest in Social Service too. A Government Care Home for Beggars at Little Conjeevaram, a product of their efforts, was opened by Home Minister Bhaktavatsalam in June last.

This typifies the task of a policeman as a friend of all weak and defenceless beings in a very characteristic manner.

Friend in need

A policeman is a friend of the people at all times, but this is most evident in times of natural calamities like storms, cyclones, floods, famines and so on. The recent floods in Madras City and in the districts are a case in point. Thousands of huts were destroyed or badly damaged and tens of thousands of people were rendered homeless and hungry. Without the slightest consideration for personal safety or comfort, policemen rallied to their cause, rescued many of them who had been marooned, saw to their accommodation in Police Stations and schools, distributed milk to their children and prepared food for large numbers of them. This was done for several days entailing great strain and stress which they endured without any complaint. The poor people of Madras City and in the districts realised as never before that the policeman is a true and sincere friend.

In the growth of a Welfare State, social service plays a prominent part in the regeneration of the homeless, juvenile delinquents, fallen women and girls and slum dwellers. The policeman becomes a repository of the confidence of many of these down-and-outs and several human dramas unfold before his eyes when some of these pitiable specimens of humanity express their sorrows. A matrimonial tangle ends in the attempt at suicide by the weaker of the two ; the policeman who is apprised of it helps to straighten it out. A run-away son returns home after committing theft and the parents solicit the help of a policeman to rehabilitate the young man. In such kindred matters, the policeman is the first social worker who does his little bit to put things right. In all these ways the policeman befriends the people and seeks to serve them.

It is one of the distinguishing marks of a free country that men and women who obey the laws that they themselves have made through their elected representatives have nothing to fear from a policeman. In fact, there is something more than absence of fear in the relationship between a policeman and the people and that is friendliness. Indeed, a policeman in independent India is a friend of the people.

NOW METRIC SYSTEM
IN
POST OFFICES

Since February 1st, all postal transactions have changed over to the Metric System. Some of the important revised Postage Rates are as follows :—

INLAND		FOREIGN	
LETTERS		LETTERS	
First 15 grammes	15 nP.	First 20 grammes	30 nP.
Each additional 15 grammes ..	10 nP.	Each additional 20 grammes	20 nP.
PACKETS			
First 50 grammes	8 nP.		
Each additional 25 grammes ..	3 nP.	PRINTED MATTER, ETC.	
PARCELS		First 50 grammes	12 nP.
Each 400 grammes of part ..	50 nP.	Each additional 50 grammes	6 nP.
AIR SURCHARGE FOR PACKETS		Minimum charge for commercial papers and samples ..	30 nP.
For each 10 grammes or part	4 nP.		

FOR DETAILS AND OTHER RATES, PLEASE CONSULT ANY POST OFFICE

POSTS AND TELEGRAPHS DEPARTMENT



Sixth All-India Tribal Welfare Conference

The sixth All-India Tribal Conference was held at Ooty in May 1960. Picture above shows a procession organised during the Conference. From top to bottom left: Vice-President Radhakrishnan inaugurating the Conference; a section of the tribal audience; tribal dances (two pictures). Below: Prime Minister Nehru presented a jeep to Dr. S. Narasimhan in March last at Kundah in recognition of his social service among three Nilgiri hill tribes. Three prominent tribal leaders are also in the picture.

State Transport



T. SRINIVASAN, I.A.S.,
Director, State Transport Department.

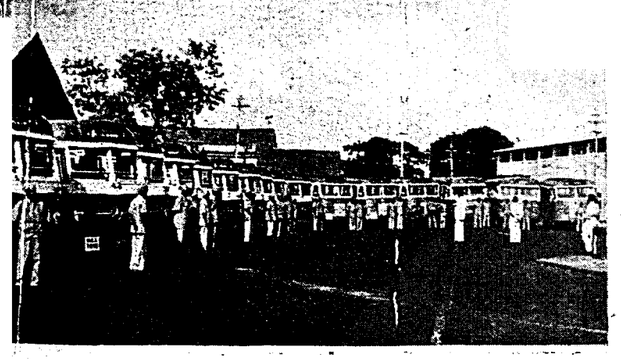
THE General Committee of Post-war reconstruction resolved on 28th December 1944, that the Post-war period Public passenger transport service of the Presidency should be owned and managed by the State itself and recommended to Government to take immediate steps to work out detailed plans for—

(i) Taking over existing bus service, (ii) drawing plans of opening new services over routes not served by existing companies, and (iii) working out service conditions on a uniform standard. In pursuance of this, in December 1946, the Madras Government decided to nationalise the transport service in the State and appointed a Sub-Committee to work out the details. Based on the findings of the Committee, Government decided to nationalise the service in stages spread over a definite period, and thus nationalisation was started with the first batch of six Government buses put on the road on 24th March 1947. This was progressively increased replacing private operators.

At the end of 1947 Government Bus Service had put on the roads 100 buses which rose to 202 in 1948. At the end of 1948 all private operators had been eliminated from the city routes and the Government fleet strength was 320. The strength further rose to 322 at the end of June 1951. The traffic needs have been increasing and are still increasing and the department also have been consistently increasing the fleet strength from year to year, and the fleet strength by the end of 1960 was 550. Due to nationalisation, buses of various makes and types were taken over and consequently it was found difficult to maintain all the various types of vehicles and get spare parts for them and therefore standardisation of the vehicles was adopted. At present there are only three makes of vehicles and the fleet has been standardised.

More Routes

There were only 17 routes operated in the City by the private operators. As against this, the number of routes operated by the Government transport now is 53. In addition to this, 39 peak hour services and 13 emergency services are also operated. The total number of schedules now operated is 400 of which 306 are in the Madras City alone. Express Services and limited stop services within the city are an important feature of 1959-60, and this is increasingly popular. Eleven Students' specials, the only service of its kind in the whole of India, are also operated and they touch all schools and colleges in the City. After the initial nationalisation in 1946, the next batch of suburban routes introduced was only in 1959 when services were introduced to Red Hills, Lattice Bridge, Villivakkam, Thiruthanni, Sholavaram, Poonamallee and Padappai. Mufassil Services to Kalahasthi, Thiruthanni, Thirupathi, etc., were also introduced. Additional special services are also operated on occasions of fairs, festivals and exhibitions. The Government then considered that



To meet the increasing preasure of City traffic the State Transport Department have been periodically putting new fleets of buses on the roads. Picture shows a row of seventeen buses that were commissioned during April last.

long distance services linking important places with in the State and outside the State were necessary. On 1st August 1959 the Express route between Madras and Bangalore was introduced. Following its popularity, more long distance Express routes were introduced from Madras to Tiruchirappalli, Madras to Salem and Madras to Thanjavur. Similarly from Kanyakumari Branch express services were introduced from Nagercoil to Tiruchirappalli via Tirunelveli, Virdhunagar, Madurai and Nagercoil to Tiruchirappalli via Tuticorin, Madurai, Dindigul and Tiruchirappalli. Another express service, the longest of its kind with 290 miles of route mileage has been introduced from Nagercoil to Coimbatore. These services are so popular that there is clamour for more ofs uch services to be opened.

The strength of the employees of all categories which was 2,926 in 1951 is today 4,060. The daily mileage operated was 35,000 miles in 1951–52 which has now increased to about 45,000. The daily earning which was around Rs. 31,000 in 1951–52 has been increasing year after year and it is nearby Rs. 60,000 in 1960.

Workshop at Chromepet

The entire fleet is now located at the Bodyguard Lines in Mount Road. It is found increasingly difficult for the City service to operate from this depot. Therefore a North Depot at Tondiarpet is proposed to be constructed, on a site of five acres. Ten acres of land have also been acquired near that workshop to provide houses for the employees of the Department. The workers will be enabled to be nearer their place of work and the discomfort to go to the workspot and return will be minimised. Another depot in the South will begin to function soon and there will then be in all three depots including the one at present in Mount Road and it is hoped to cater to the needs of the City without difficulty or interruption. There is a well-equipped workshop at Chromepet, where all kinds of repairs for the vehicles are conveniently carried out. There also the body building shop and the tyre retreading branch in that workshop and the bodies built by the Government Workshop compare quite favourably with the bodies built by other firms. There are 674 workers in this workshop. It is proposed to construct housing accommodation for these workers also near their workshop.

To reduce breakdowns and to attend to vehicles quickly, mobile breakdown squads have been organised with four jeeps fitted with very high frequency wireless sets to contact the control office in the Transport House Depot. This enables instantaneous attention of breakdown vehicles.

Public Amenities

Passenger shelters have been provided at important stops. An enquiry office, canteen, cloak room, washing and bathing facilities have been provided in the Parry's corner. Similar facilities will be provided at Thyagarayanagar, Mint and other important places shortly. For long-distance passengers, rest houses are proposed to be constructed at Vellore, Krishnagiri, Salem, Villupuram and Tiruchirappalli. Regulators to arrange 'queues' and help the passengers are posted at important places. At all important stops and places tickets are issued in advance by specially posted stand conductors. Season tickets are issued for some important routes. Vehicles are hired out for public and at concessional rates to educational institutions and a passenger amenities fund has also been created to provide necessary amenities to the travelling public.

Amenities to workers

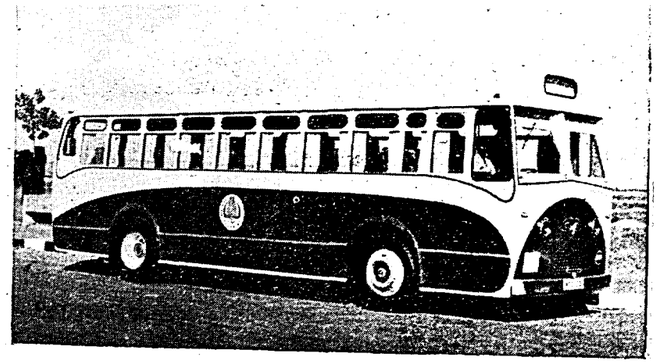
A well-maintained dispensary with a full-time Medical Officer is working inside the Government Transport House and rendering free medical aid to the workers. The Medical Officer periodically visits State Transport Central Workshop also. At Kanyakumari, a part-time Medical Officer is working in the dispensary attached to the department. Other facilities provided are water coolers, free uniforms, stitching charges, washing allowance, medical and educational concessions, reading room and library. Another important and useful amenity provided is free tea for workers working in the night. A recreation club provides recreation facilities. Canteen, rest sheds and credit society are also some of the other facilities afforded to them. A compassionate relief fund has been constituted to help workers or their families in deserving cases.

Kanyakumari Branch

The Kanyakumari Branch of the Madras State Transport Department came into existence on 1st November 1956 consequent on the re-organisation of the States. The Transport Services in the former Travancore-Cochin State were already nationalised and nationalised service in that part of the State constituting the Kanyakumari district was continued to be run by the Madras State. There were 56 services and 68 buses when it was taken over. All of them were over-aged and they have been replaced except a few, in the course of the short spell of four years and the fleet strength now is 90. It was only a collection depot under the former administration and as it is now run as a distinct unit, all the facilities of an independent office of a self-contained unit had to be created. The office buildings were completely remodelled and renovated at a cost of Rs. 75,000. A pucca workshop on an extensive plot of 14 acres has been constructed at Ranithottam about 2 miles away from Nagercoil. As soon as it is commissioned, it will be a self-contained workshop and can cater to the needs of that area. A housing colony for the workers of that branch is also proposed to be constructed near the workshop. The daily collection which was about Rs. 7,000 during former Travancore-Cochin State has now risen to about Rs. 12,000. The punctuality and the cleanliness, with which the State Transport Services in the Kanyakumari unit are run have earned such a great reputation that the public of that area desire nationalisation of more routes.

Heavy Traffic

The nationalised transport was begun with only six vehicles and with no stores, no workshop, no equipment and no tools. The transport system in the Madras City is altogether on a footing quite different from those in the other big cities like Bombay, Calcutta, Bangalore, etc. Calcutta and Bombay have got the tramways and suburban railways to satisfy the traffic needs of the travelling public. But in Madras the population has enormously increased and the only facility for moving about is the bus transport. Even here the intensity of traffic during peak hours is uni-directional (viz.), from South to North of the City in the morning and *vice versa* in the evening. It will also be seen from the statistics furnished below that the Government and the department have been alive to the responsibility towards the public and their needs in correspondingly increasing their fleet strength and number of services :—



A luxury coach of the Madras State Transport which is used as an excursion special for Mahabalipuram every Sunday and for private parties on other days.

Year.	Number of buses.	Number of passengers lifted.
1953–54	384	107,816,514
1954–55	402	111 133,840
1955–56	401	116,796,400
1956–57	415	126,904,934
1957–58	450	134,756,822
1958–59	470	138,833,334
1959–60	470	144,931,930

Sri R. Venkataraman, Minister for Industries, inaugurated the Express Service of the Madras State Transport between Madras and Salem on 1st June 1960.



The average number of passengers lifted in 1960-61 is 427,000 per day and the annual figure will therefore be more than 15 crores and the fleet strength is 550. It will be interesting to know that though the Madras State Transport Department is eighth in the order of fleet strength among the nationalised Transport Undertakings in India, this stands third in the volume of traffic handled. With the narrow roads and the increasing traffic and increased number of buses it is found difficult to accelerate the service with the existing number of stops which are far too many--say about 15 stops within a distance of three miles in some cases. Consequently there is lot of crowding of vehicles in stops creating a jam and affecting the quicker movement of the vehicles.

In a large concern like the Transport department dealing with the public, complaints about the crew are received from the public. Though it cannot be said that such complaints can be completely avoided, yet the public are assured that every complaint is gone into detail and action taken. The Government have also appointed a Public Relations Officer so that there may be more liaison between the Department and the public. It is hoped in the coming years, with the experience the Department has gained in the past and with all the developments and improvements effected, it will be able to acquit itself well and earn the goodwill and appreciation of the public.

SMALL INDUSTRIES IN BACKWARD AREAS

The Central Small Industries Organisation launched an intensive campaign for the development of small scale industries in backward areas in all States during last year. The object of the campaign was to bring to the very doors of the entrepreneurs Governmental assistance for developing small industries.

The industrial extension service of the organisation rendered technical assistance and guidance to nearly 31,000 small scale units. Nearly 1300 model schemes for the various industries were prepared. While the Design Cell produced a number of improved product designs, increased attention was paid for developing industrial co-operatives.

At the end of 1960, 15 Small Industries Service Institutions, 4 Branch Institutes and 51 Extension Centres were functioning for rendering technical help to small industrialists.



SLUM Improvement

CAPT. D. GNANAOLIVU, M.A., I.A.S.,
Chairman of C.I.T., and Housing Boards.

THE problem of slums is not a new one. Neither is it peculiar to our country. But it assumed more importance and urgency only after our attainment of Independence. Natural calamities like floods and cyclonic winds, that seem to visit the metropolitan areas once in a decade or two, accentuate the problem in all its aspects.

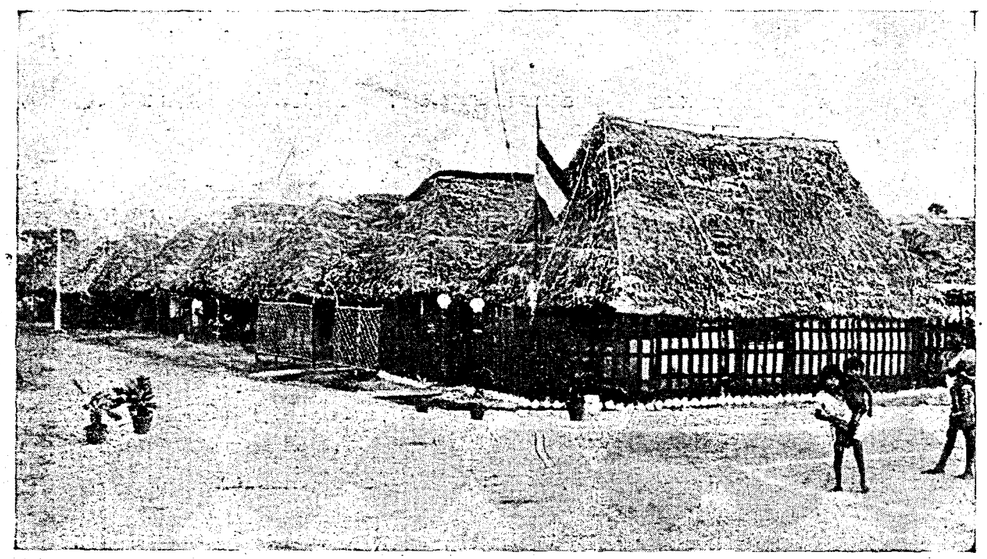
A slum may be defined as a cluster of huts, shacks and jerry-buildings of all shapes and sizes, highly overcrowded, with no proper access to them, without any amenities, and generally in sub-human conditions. The eradication of slums would, therefore, first appear to be a humanitarian problem. But it is not entirely so. Enlightened self-interest will show that the existence of slums near middle class housing areas engenders not only social friction, but also gives rise to economic imbalance. Slums exert a baneful influence on the value of the properties surrounding them. At the same time, it is accepted on all hands that, from a social point of view, the different cross sections of the community should be integrated in composite housing layouts.

Stupendous problem

The City of Madras has about 320 slums, big and small. The total slum population is about three lakhs or about 60,000 families. It will require about 2,000 acres to house them all with minimum health and town-planning standards. This will mean that at least 8,000 acres will have to be acquired in all, in which only about 25 per cent should be set apart for those at present living in slums, as the Madras Government rightly believes in composite layouts, and a mixed society. The cost of acquisition of these 8,000 acres alone may come to Rs. 6 to 8 crores. The cost of development of house-sites for 45,000 families will be about Rs. 4·5 crores (at the rate of Rs. 1,000 per family), and it will cost another Rs. 6 crores to build tenements for the balance of 15,000 families. A socio-economic survey has shown that 25 per cent of dwellers in each slum can afford to pay subsidised rents for pucca tenements. So, in all, if it is stated that Rs. 18 to 20 crores will be required to solve this slum problem in the city, it will indicate the magnitude of the problem—but only from the point of view of finance. Stupendous as this figure is, it is not finance alone that is a bottleneck to the progress in slum improvement work, as is commonly presumed.

Difficulties in the way

The real difficulties in tackling the slums are many and varied, and cover the entire gamut of not only human emotion but also administration, law, and engineering. The foremost among them is the general ignorance of slum dwellers and their gullibility, which is taken advantage of by interested parties, sanghams, and local leaders far their own ends. A second factor is the sense of tradition which makes them resist any attempted change of their residence, even if it be for the better and for their good.



A well-laid out colony of huts with all amenities provided was opened at Puliyur as part of the City Slum Improvement Scheme.

The Slum Improvement Clearance Scheme which is a centrally-sponsored scheme (under which the Union Government gives 37½ per cent loan, and 37½ per cent subsidy and the State Government a matching 25 per cent subsidy), lays down rightly as the first pre-requisite, that the density of the slums taken up for improvement should be reduced. The existing density in Madras slum areas ranges from about 50 to 200 families per acre. As against this, the above Scheme permits only a density of 20–25 for pucca, single-storeyed tenements, and 30–35 for double-storeyed tenements. As for huts in open developed plots, the enforced reduction in density means that every slum family (average five persons) must be given about 1,000 to 1,200 square feet of land.

Basic Question

The local authorities are one with Union Government, and the town-planning, housing and health experts, that it is essential first to relieve congestion in slums in any scheme designed to improve them. The necessary corollary to this decision is, that 40 to 50 per cent of the occupiers of every slum have to be evicted and shifted to neighbouring areas. Unfortunately, most of the slum dwellers are reluctant to leave their accustomed areas, just as it happens even in New York and London. The authorities are aware of the facile suggestions of arm-chair critics that the density should be allowed to continue as it is, that some amenities by way of a few lights and taps should be provided and the areas allowed to deteriorate further. But one is unable to accept this position, though Government are not against the provision of a few temporary amenities which, however, will not be eligible for any loan or grant from Delhi. The Union and State Governments are willing to allot more than adequate funds for improving slums, but it is felt that such improvements should be carried out as a permanent measure, and as per the opinion of experts, and not as per the dictates of slum dwellers who, in their ignorance, demand many things which are not in their real interests. The latter course will be like a patient prescribing medicine for himself !

Need for Co-operation

Therefore, one has to appeal to all slum dwellers, their Sangams, and leaders, as well as to leaders of public opinion, to co-operate fully with the Government, the Madras Corporation, and the C.I.T., by not obstructing the present schemes—for which a total sum of Rs. 168 lakhs has been allotted in the Second Five-Year Plan. Out of the sanctioned number of 4,677 plots, 1,932 have been developed with amenities till now. Out of the sanctioned 1,822 tenements, 722 tenements have been completed, and 400 more are under active construction by the Madras Corporation and the C.I.T. A majority of them will be ready for occupation in about three months. The State Housing Board recently asked the two agencies not only to execute their slum schemes more energetically, but asked them to draw in full from Government all the moneys which they had already spent. In view of the Government decision of last year to place some funds at the disposal of four big mofussil towns also for the improvements of their worst slums, it may be possible to spend about Rs. 120 lakhs out of the Second Five-Year Plan allocation of Rs. 168 lakhs usefully, and in a permanent way, before March 1961. Similarly, during the Third Five Year Plan also, a sum of Rs. 300 lakhs will be available for the slums. But, if this proposal is to result in success, the slum dwellers, their Sangams, and local leaders must understand the Slum Improvement Scheme of the Union Government and its implications, and try their best to co-operate and utilize the amounts fully.

Construction of Tenements

Tenements for slum dwellers, at a total cost of Rs. 70 lakhs, are under active construction in Madras City by the Corporation and the C.I.T. Here again the minimum standards of space and strength have been laid down by the Union Government, and though only 37½ per cent of the cost, i.e., loan portion, has to be returned to Delhi in the course of thirty years, the subsidised rent works out to about Rs. 12·50 per month. At least 30 to 40 per cent of the slum dwellers of Madras, who pay actually Rs. 6 to 8 per month for site alone, and then put up their own huts which they maintain spending about Rs. 60 or 70 per year, can easily take to these pucca tenements with a separate kitchen, bath, and latrine without having to worry about their maintenance. If they are given the correct lead, thousands of them in the course of the next six or seven years will attain a much better standard of living. The Government have sanctioned side by side slum improvement schemes on " the open-plot system " to cover, by stages, 60 to 70 per cent of hut dwellers who need pay only about Rs. 3 as monthly lease rent.

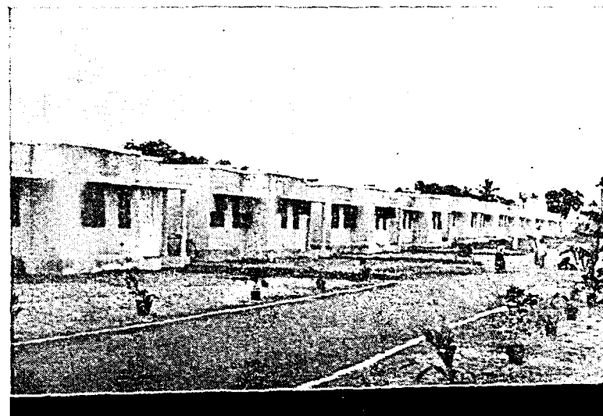
System of Development

This system of development consists of providing pucca, individual baths and latrines, and public roads, water-supply, and lighting. To help construction of the hut by the slum family on a raised mud plinth in the open plot, thatch, bamboo, rope, R.C. Ventilators, all worth Rs. 125 and a few lorry-loads of mud are given, with Rs. 25 cash each. The ceiling fixed by the Union Government for an open plot is Rs. 1,250, and for a tenement Rs. 3,300. Both will be given on subsidised lease rents of Rs. 3 and Rs. 12·50 per month, respectively. The Government, after mature consideration, have decided that sale of plots and houses at subsidised cost to slum dwellers will result only in their exploitation by others.

Here again, their opposition to getting rehabilitated even in nearby places is a great difficulty in the way of quick implementation of slum schemes. Meenambal Sivaraj Nagar Slum by the Corporation, and Namasivayapuram Slum by the C.I.T., have no doubt taken two years for improvement at a total expenditure of nearly Rs. 12 lakhs on the open-plot system, with huts and amenities. But, there have been innumerable obstacles in the way, which have caused delay in execution.

Among the administrative problems may be included the delays in land acquisition proceedings,

The new colony at Puliyur constructed under the Low income Group Housing Scheme



law's delays, and non-availability of open spaces close to existing slum areas, to rehabilitate excess families squeezed out when density is reduced.

Administrative Problems

The authorities also face an administrative difficulty in the actual implementation of the slum improvement scheme. More families could be accommodated in the same area if pucca tenements are built, with consequent shifting of a less number of families elsewhere. But, even the minority of slum dwellers who are comparatively better off, are trying to avoid the subsidised tenement rents. To satisfy this agitation, if more open plots with huts and amenities are resorted to, the immediate result will be, a great number of families will be uprooted and transplanted in neighbouring or distant areas as the case may be, and more agitation and obstruction will be offered to the housing agencies! Therefore, after considering every case on its merit, one has to go cautiously in order to minimise the hardship of slum dwellers. The hardship of shifting is temporary, but to make the concerned accept it cheerfully, responsible members of the public must study the scheme, and help the Government, the Corporation and the C.I.T. Then, even police help which has to be requisitioned often now in the interests of the slum dwellers themselves, can also be dispensed with, and lakhs of rupees can be drawn as loan and subsidy both from the Union and the State Governments, more quickly and more usefully, to tackle this problem in which all leaders of all shades of opinion are genuinely interested. It has also to be emphasised that the general approach of the authorities has been only one of Slum "Improvement" and not of "Clearance", excepting in two instances, one caused by military requirements, and another to help a Girls' School to expand.

The engineering problem in relation to slum work is mainly one of keeping down the cost to the absolute minimum, consistent with the basic health and town-planning requirements. What with the spiralling prices of building materials on the one hand, and the paucity of skilled and even unskilled labour on the other, it is now computed that a one-room house with minimum standards will cost not less than Rs. 4,000. Non-availability of certain commodities or suitable economic substitutes have added to the delay in execution.

From the town planning point of view, the absence of a well-thought-out general Master Plan for the City is a great handicap leading to *ad hoc* solutions, which may ultimately do more harm than good.

Prevention of new slums

Prevention, it is said, is better than cure. The prevention of new slums in the City should therefore be attempted *pari passu* with measures for ameliorating existing conditions in the slums, or in housing their excess population elsewhere. For it is common sense that new slums should not be allowed to grow on one side, while on the other, all energy is being bent in improving existing slums! The State Government have bestowed anxious thought on this aspect also, and have adopted suitable measures. Legislation to evict squatters of recent origin from public lands has already been enacted, and a bill to prevent the growth of slums in the future, is on the anvil.

The authorities appeal earnestly to the public, the leaders of various shades of opinion, and the representative organisations of slum dwellers, to co-operate with the housing agencies in pushing through the various slum improvement schemes formulated and sanctioned by the Government from time to time, bearing in mind all the above aspects of this stupendous problem. The provision for slum improvement will be Rs. 3 crores in the Third Five-Year Plan, nearly double the amount provided in the Second Five-Year Plan. But will our efforts achieve double the results?

A factual statement on what happened during the last five years is given below :—

SECOND FIVE-YEAR PLAN.

Slum Improvement Scheme of Union Government in Madras City.

Pattern of Assistance—		
Loan	37½	per cent by the Government of India.
Grant	37½	Do.
Grant	25	Do.
Ceiling cost—	RS.	
Open, developed plots, with hut and pucca bath and F.O.L.	1,250	per plot.
Tenements with amenities.	3,700	per tenement.

(1)	*North of Cooum (in-charge of Corporation of Madras).* (2)	*South of Cooum (in-charge of C.I.T.).* (3)	*Total.* (4)
	NOS.	NOS.	NOS.
Number of Slum dwellers in Madras	200,000	100,000	300,000
Number of Slum families in Madras	40,000	20,000	60,000
	(RS. IN LAKHS.)	(RS. IN LAKHS.)	(RS. IN LAKHS.)
Total allocation in Second Plan	112·00	56·00	168·00
Amount utilised in Second Plan up to 31st October 1960	40·31	37·90	78·21
Amount likely to be utilised upto 31st March 1961	50·00	50·00	100·00
Balance of allocation available in Madras	62·00	6·00	68·00
Likely to be given to Madurai, Tiruchirappalli, Salem, etc., before 31st March 1961.	..	..	20·00
Total balance likely to remain unspent in Second Plan	..	..	48·00
	NOS.	NOS.	NOS.
Number of open plots developed	972	960	1,932
Number of tenements constructed	222	500	722
		RS.	
Monthly rent per open developed plot, with hut and bath and F.O.L.	..	3·00 per mensem.	..
Monthly rent per tenement with amenities	..	12·50 per mensem, likely to be reduced by one or two rupees for two or three years to begin with.	

SOIL CONSERVATION

The Government of India is considering a centrally sponsored programme of assistance to the States for soil conservation in the catchment areas of River Valley Projects during the Third Plan.

The proposed allocation for the programme in the Third Plan is Rs. 11 crores. According to the present estimates Bhakra and Beas Dam would get Rs. 2·8 crores for soil conservation, DVC Rs. 2-5 crores, Hirakud Rs. 2 crores, Machkund Rs. 1 crore, and Chambal Rs. 0·73 crore. It is also expected that a whole-time officer will be appointed in the Central Water and Power Commission of the Union Ministry of Irrigation and Power for reviewing the progress of the Soil Conservation Programme in various States.

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portrait of a peasant



Ten years ago he toiled from dawn to dusk—tilling with ancient farm implements, baling water from the well—and helpless against crop pests. His children had no school to go to, his village had no connecting road to help him transport his produce to the market place. His lot was shared by the peasants in many other villages in the State.

Thanks to the two Five Year Plans, he now cultivates his lands with improved implements, switches on the electric pump and waters the fields, gets his supply of fertiliser and pesticides. His village has a school and it has a good connecting road too. Under the Community Development scheme, he gets all advice and help to improve the yield on his farm. The peasant is today happy in practically every village.

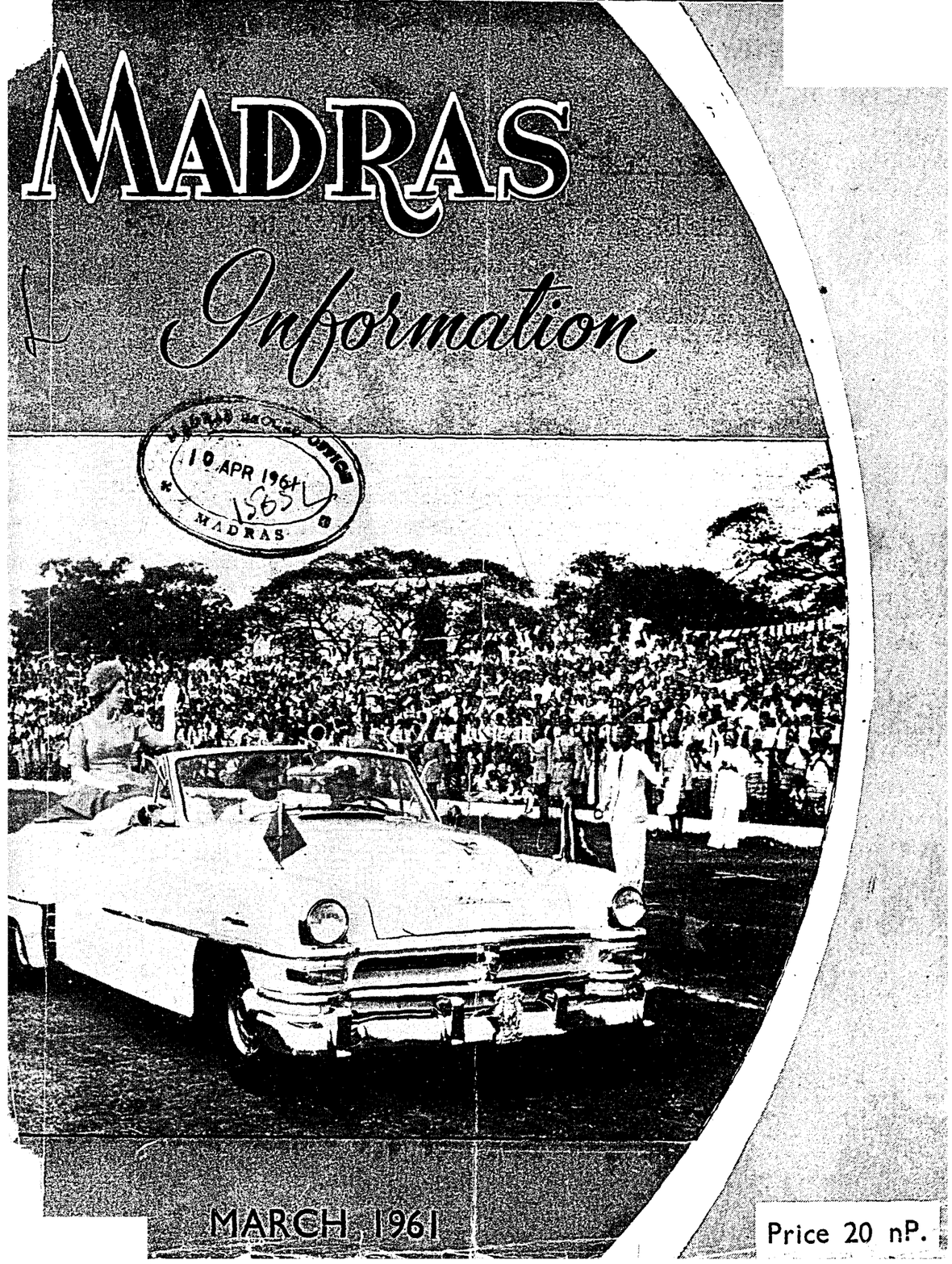
The Plan helps build a prosperous peasantry

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10 APR 1961
MADRAS



MARCH 1961

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MADRAS INFORMATION—ANNUAL, 1961.

This department has published an Annual Number of Madras Information in February 1961. Therefore there was no separate issue of Madras Information in February 1961. To compensate for the non-issue of Madras Information in February 1961 the subscription period will be extended by a month.

The Annual Number running to 68 pages has been printed in ivory cote art paper with multi-colour wrapper and contains excellent articles by eminent men in public life, scholars and Heads of Departments.

The price of a copy of the Annual Number is Re. 1. Copies can be had from this department on payment of Rs. 1.26 (Price Re. 1.00 and Re. 0.26 for ordinary postage and Re. 0.76 if sent by Registered Post) in advance by M.O. or Indian Postal Order or by cheque on any Madras Bank. Copies cannot be sent by V.P.P.

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Director of Information and Publicity,
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MADRAS INFORMATION

MARCH 1961

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This month's cover

A mammoth Children's Rally at the Corporation Stadium on February 20th provided a memorable highlight during the Queen's visit. The bright faces of over 50,000 children who jam-packed the Stadium stands gave the Royal visitor an idea of the interest the State took in the care of its young. In the cover the Queen is seen acknowledging the greetings from a section of the children at the Rally.



Budget for 1961-62

MADRAS RECORD OFFICE 10 APR 1961 MADRAS

SRI C. SUBRAMANIAM, *Finance Minister.*

[Finance Minister Subramaniam made a masterly survey of the progress registered by the State in different spheres during the First and Second Plan periods while presenting the Budget for 1961-62 to the State Legislature on February 25, 1961. The Budget shows a deficit of Rs. 285 lakhs and proposes no new taxation. An extract summary of the Minister's Budget speech is given in this article.]

The Budget for 1961-62 is of special significance. It marks the beginning of the Third Plan. We have had a fair measure of success in implementing the first two Plans. While launching the New Plan, it is appropriate that we should review the targets and achievements of the two earlier Plans so that the further programme of development and more particularly the size and structure of the Third Plan are in harmony with the progress already made.

The Revised Estimates for 1959-60 anticipated a Revenue surplus of Rs. 58 lakhs as against which the Accounts for that year show a surplus of Rs. 53 lakhs. The Revised Estimates for the current year show a Revenue surplus of Rs. 1,23 lakhs as against a deficit of Rs. 34 lakhs anticipated in the Budget Estimates. This improvement has taken place despite an expenditure of Rs. 4 crores in the current year on the implementation of the Pay Commission's recommendations for Government employees and teachers under all agencies. The main reason for this is the growth in the State's revenues as well as an increase of Rs. 2,32 lakhs in our share of income-tax.

The Budget Estimates for 1961-62 show a Revenue deficit of Rs. 2,85 lakhs. We have been receiving assistance from the Central Government since 1957 for increasing the emoluments of low-paid employees and have drawn a sum of Rs. 2,34 lakhs on this account in the current year. The Union Government have decided to withdraw this assistance from 1961-62 onwards and turned down our request to continue the aid till the recommendations of the Third Finance Commission came into force. Besides we have hitherto been drawing grants from the Centre for the revenue expenditure on the Second Plan schemes. With the commencement of the Third Plan in 1961-62, these grants will no longer be available and it will be our sole responsibility to maintain the schemes completed in the Second Plan. These factors will account for the Revenue deficit of Rs. 2,85 lakhs in the Budget for 1961-62. However, the Budget has been framed without any additional taxation proposals.

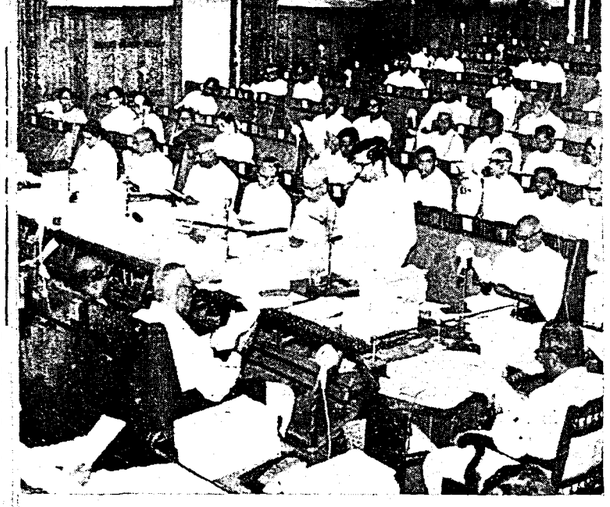
Agricultural production

The First Plan was a period of adverse seasonal conditions and consequent food deficits. By giving the highest priority to food production in the First Plan, the imbalance in the food economy was corrected in some measure, but the problem had not been solved completely. The Second Plan continued to lay stress on increased agricultural production and many new schemes were undertaken.

Taking all foodgrains together, production has increased from 30·94 lakh tons in 1950-51 to 51·67 lakh tons in 1960-61. Our target is to increase food production to 67·17 lakh tons by the end of the Third Plan. We have now achieved self-sufficiency in a year of normal seasonal conditions, but it is essential to be self-sufficient even in an adverse year. The target in the Second Plan was an additional food production of 12·79 lakh tons as against which the achievement has been only about 7 or 8 lakh tons. At the beginning of the First Plan, only 48,000 tons of ammonium sulphate were distributed in our State. In 1956-57, 1·2 lakh tons were distributed and in 1960-61, 1·3 lakh tons are expected to be used. The requirements of our ryots are however much more than this.

Chemical Fertilisers

Sixty thousand tons of super-phosphate have been distributed in the current year as against 9,600 tons in 1953-54. The requirements of irrigated lands alone in the Third Plan will be 4 lakh tons of ammonium sulphate and 2.5 lakh tons of super-phosphate and it must therefore be our endeavour to step up production to this level. The



The Finance Minister presenting the Budget for 1961-62 in the Legislative Assembly.

new Fertiliser Plant at Neyveli is expected to yield 1·5 lakh tons of urea equivalent to 3·5 lakh tons of ammonium sulphate from the coming year. This may not entirely cover our requirements and therefore we welcome the efforts to set up another fertiliser factory in the private sector near Tuticorin.

Organic manures

As against 111 tons of green manure seeds distributed at subsidized rates in 1953–54, 1,500 tons were distributed in the current year. By the end of the Third Plan, green manure should be made available for the entire cultivated area in the State. There has been good progress in the production and use of compost. As against 1·42 lakh tons of urban compost produced in 1951–52, the production has increased to 4 lakh tons in the current year. So far, compost manufacture has been largely confined to Municipalities and Major Panchayats. It is necessary that it is taken up in the smaller villages also.

We have achieved a measure of success in increasing agricultural production by the use of improved seeds. One hundred and thirty-six State Seed Farms have been set up so far as against the target of 210 to meet the full requirements of the State. The improved seeds produced in State Seed Farms have to be multiplied in the Secondary Seed Farms owned by ryots.

The measures we have taken towards intensive cultivation have not been without tangible results, for we now hold the distinction of being the State with the highest yield per acre in India. I have given certain figures in this regard in my last Budget speech. The target in the Third Plan is to enhance the yield per acre to 1,890 lb. of cleaned rice by 1965–66, as against 1,332 lb. at present. The target for millets is 712 lb. per acre by the end of the Third Plan against 672 lb. now.

Industrial raw materials—Cotton

The agricultural programme should not only aim at increased food production, but should also provide for the growing needs of our industries in raw materials. The prices of industrial raw materials have gone up steeply in recent times largely because of their shortage in this country. Rs. 41 crores worth of cotton is being imported into our country annually. Obviously it is necessary to plan for a substantial increase in the production of cotton. A measure of success has been achieved in this direction in the last two Plans. The production of cotton in 1959–60 was 4·01 lakh bales as against 2·26 lakh bales in 1950–51. In the current year, the production is expected to reach 4·2 lakh bales. The target for the Third Plan is 5·2 lakh bales.

Oil-seeds

Another industrial crop of great economic significance in the present context of shortage of foreign exchange is oil-seeds as is evident from the fact that the export of vegetable oil fetches Rs. 15 crores of foreign exchange. The production of groundnut has been stepped up from 7.66 lakh tons in 1950–51 to about 10 lakh tons in the current year. The price of groundnut is subject to wide fluctuations and steps will have to be taken to stabilise the price in order to ensure the fullest co-operation of the cultivator towards reaching the target of 12 lakh tons set for the Third Plan.

Sugarcane

Sugarcane is another important commercial crop in our State. The production in the current year will be 41 lakh tons as against 32·5 lakh tons in 1950–51. The target in the next Plan is an additional production of 10 lakh tons. One lakh tons of sugar is now manufactured in the State. This has to be raised to 2 lakh tons in the Third Plan to meet the anticipated increased consumption of sugar consequent on the growth in the general economy, and the additional production of 10 lakh tons of cane will be used for this purpose. The yield of sugarcane in Madras State is 25·9 tons per acre as against the All-India average of 14·7 tons per acre.

Irrigation is the major enabling factor towards rapid agricultural development. The Lower Bhavani Project and the Cauvery Delta Drainage Scheme were completed in the First Plan and the following projects were also taken up: (1) Mettur Canal Scheme, (2) Manimuthar, (3) Araniyar, (4) Sathanur—First stage, (5) Krishnagiri, (6) Amaravathi and (7) Vaigai Reservoir Project.

Irrigation

During the Second Plan, 11 major schemes were completed to bring 2·09 lakh acres under new irrigation and to

stabilise supplies on 1·24 lakh acres. The area with an assured supply from river channels is at present at 25·36 lakh acres against 21·95 lakh acres at the beginning of the First Plan. The most important project to be implemented in the Third Plan is the Parambikulam-Aliyar Project which will irrigate 2·5 lakh acres. In addition to this Project, we will be taking up a few medium irrigation schemes and also effecting permanent improvements to the supply channels of the old irrigation systems. We have harnessed all the rivers in our State and the irrigation potential so far created has been utilized in full.

Minor Irrigation

To supplement major irrigation, sufficient stress has been placed on minor irrigation schemes. Rs. 8 crores nearly have been spent in the last ten years towards the improvement of the 27,000 tanks scattered all over the State. We have planned to spend another Rs. 8 crores for this purpose in the Third Plan.

Many of the tanks are shallow with vast extents of waterspread with consequent heavy loss through evaporation. An effective remedial measure is to deepen the tanks and to reduce the area of the waterspread. Members are aware of the scheme for desilting and reclamation, which has been devised for this purpose. In the Second Plan, 47 tanks were reclaimed at a total cost of Rs. 36·44 lakhs. A sum of Rs. 80 lakhs has been set apart for this scheme in the Third Plan and the provision for 1961–62 is Rs. 15 lakhs.

Well irrigation is widespread in our State. The agricultural prosperity of Coimbatore district, for instance, is largely based on well irrigation. These wells are being dug by ryots at enormous cost because they do yield an adequate return on the investment. It is necessary to expand well irrigation to the utmost in view of the fact that the scope for river irrigation in our State has been exhausted. With this view, the Government have sponsored a scheme of assistance for the sinking of new wells. In the Second Plan, 6,000 wells were assisted at a cost of Rs. 90 lakhs. We have to consider carefully the extent to which this programme can be intensified in the Third Plan, keeping in mind the fact that the increasing use of electric motors on a large number of wells does push down the water table of the locality.

The Government of India have dug a few exploratory tube-wells in our State as an experimental measure. These wells have proved to be expensive in construction and maintenance and call for heavy subsidy. Importance has been given to the filter-point wells programme also and about 5,000 filter-point wells have also been sunk in the last ten years.

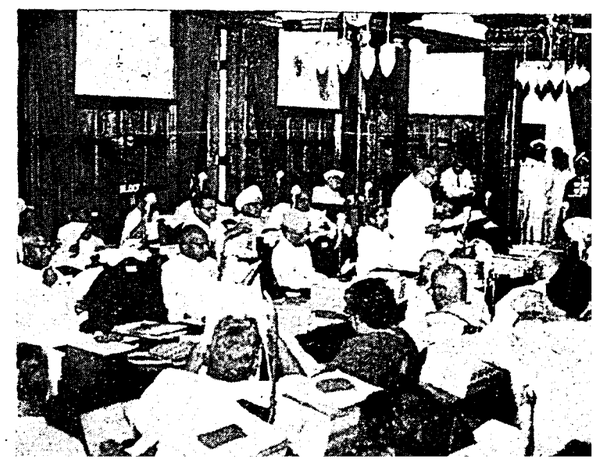
Soil conservation

The extent under irrigation is only a small percentage of the cultivable area of the State. Dry crops are grown on 110 lakhs acres out of the total cultivated extent of 170 lakhs acres. Production on these dry lands can be stepped up only by means of soil conservation. This programme was started as an experimental measure in the Nanjanad area of the Nilgiris in 1952. Soil conservation measures were extended on about 17,000 acres in the First Plan and 133,000 acres in the Second Plan at a cost of Rs. 87 lakhs. The allotment for the Third Plan is Rs. 2,50 lakhs and the Budget provision for 1961–62 is Rs. 44 lakhs. The success of the scheme will depend largely on the measure of participation by the public.

Animal Husbandry

In the last decade many schemes have been implemented for the development of our cattle wealth. Two hundred and thirty-four Key Villages have been set up. Thirty-nine Artificial Insemination Centres have been opened. Till now we have not paid much attention to the breeding of milch animals and we should attend to this aspect in future. An increase in the production of milk will raise the general standard of nutrition apart from providing a subsidiary income to agriculturists. So far, Rs. 48 lakhs has been distributed as loans to Co-operative Milk Societies for the purchase and maintenance of good quality cows. Pasteurization plants have been set up at three places. It is now proposed to set up a Dairy and Pasteurization Plant at Madurai at a cost of Rs. 50 lakhs with aid expected from the UNICEF. This scheme is based on organizing many Co-operative Milk Societies in the adjoining villages.

The Industries Minister presenting the Budget for 1961-62 in the Legislative Council.



Another new scheme for the gathering of milk from rural areas around Erode and its transportation to Madras to meet the City's requirements is being formulated. Facilities to house 2,000 heads of cattle have just been completed in the Madhavaram Milk Colony. So far, 750 cattle have been brought there. Housing has been provided in the colony itself for the owners of the cattle. This will ensure good care of the cattle and the proper rearing of the calves which will in turn increase the yield of milk. Around the City, Co-operative Milk Societies are being organized in many villages of Chingleput district. A sum of Rs. 1 lakh has been disbursed as loans for the purchase of milch animals. Milk from the Madhavaram Colony and these Co-operative Milk Societies is gathered and distributed to the public through the Government Milk Factory at Teynampet. The programme for the next year envisages the addition of another 2,000 cows to the Colony at Madhavaram. The main drawback of the cattle colonization scheme is that it is expensive on overheads. To ensure cheap supply of milk, facilities must be provided in rural areas for the rearing of milch cows and for the gathering and distribution of milk. A beginning has been made on such schemes which should be expanded further. It is proposed to set up a body of experts to advise and to co-ordinate the various schemes for Dairying and Milk Supply in an integrated way.

Forests

As against the target of 33 per cent of the land-area under forests for All-India, we have only 17 per cent now. An intensive programme was taken up in the Second Plan to increase the area under Forests and a sum of Rs. 1·48 lakhs was spent on forest development in that Plan as against Rs. 24 lakhs in the First Plan.

In the Second Plan, 47,000 acres were covered with cashew, 89,000 acres with fuel trees, 20,000 acres with wattle, 3,000 acres with blue-gum, 10,000 acres with teak, 3,000 acres with casuarina and 300 acres with bamboo. Besides, 11,000 acres were developed as pasturage. We must take steps to consolidate and extend these plantations in the Third Plan and the targets are 10,000 acres under cashew, 5,500 acres under teak, 20,000 acres under wattle, 3,000 acres under casuarina, 5,000 acres under softwood and 5,000 acres under bamboo.

A major scheme of the New Plan is the generation of farm forests in the villages. A beginning has been made on 2,300 acres in six Development Blocks in the districts of Chingleput, South Arcot and North Arcot. Farm forests are expected to cover 260,000 acres in the Third Plan for which a provision of Rs. 75 lakhs has been made.

Fisheries

Several schemes have been taken up for the development of fisheries in the last decade at a cost of Rs. 35 lakhs in the First Plan and Rs. 75 lakhs in the Second Plan. A large provision of Rs. 2,22 lakhs has been made in the Third Plan to accelerate this programme. One of the major schemes in Fisheries programme is the supply of mechanised boats. One hundred and thirty-two pablo boats have been constructed and distributed in the current Plan. The scheme will be expanded in the Third Plan and a provision of Rs. 9 lakhs has been made for 40 pablo boats in 1961–62. Cold storage facilities have been provided in four places in the Second Plan in order to preserve the fresh fish. Cold storage plants will be set up at Madurai and Pulicat in the coming year. Nylon nets are becoming increasingly popular with our fishermen. Thirty-five thousand pounds of nylon nets were distributed in the Second Plan at a cost of Rs. 6 lakhs. To reduce the indebtedness of fishermen, Rs. 26 lakhs have been advanced to them as loans through co-operative societies.

Community Development

The Community Development Programme has now covered 254 Blocks and the remaining 120 Blocks will be covered by 2nd October 1963. A sum of Rs. 76 lakhs was spent on this programme in the First Plan, and Rs. 13·78 crores in the Second Plan. The cost in the Third Plan is expected to be Rs. 20·36 crores and the Budget provision in 1961–62 is Rs. 3·66 crores.

The formation of Panchayat Unions represents a revolutionary change in community development. Seventy-five Panchayat Unions have already been constituted and are now functioning. Another 132 Panchayat Unions will be set up on Tamil New Year's Day and the entire State will be covered on 2nd October 1961. The administration of the Community Development Programme will be entrusted to the 75 Panchayat Unions already in existence, from 1st April 1961.

Local Development Works

The Local Development Works Programme will be implemented on the basis of matching grants, for which a provision of Rs. 1,40 lakhs has been made in the Budget for 1961–62. The Centre will be giving a grant of Rs. 5 crores on the Local Development Works Programme during the Third Plan. Taking into account the State Government's share, the outlay may go up to nearly Rs. 7 crores, and if we add to it the value of the contribution from the people, works costing nearly Rs. 11 crores may be implemented.

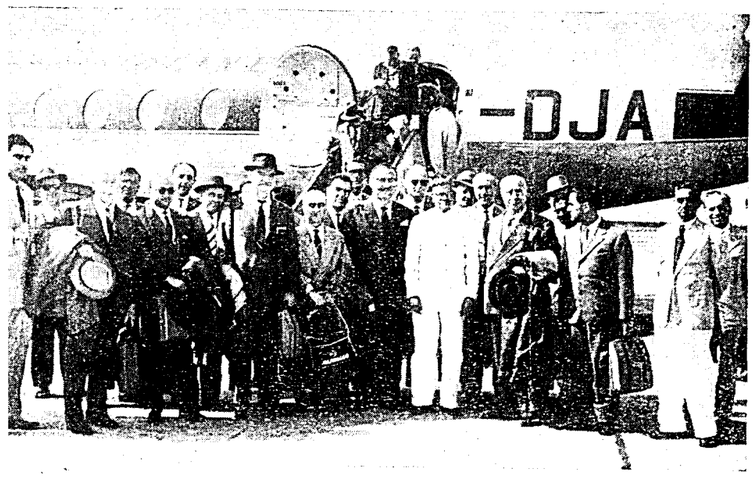
Co-operation

The backwardness of our agriculture is mainly due to the fact that it is carried on in small and fragmented holdings by farmers with little or no capital. Our farmers borrow from the private money-lender to meet the cost of cultivation and permanent improvements to the land and the major portion of their earnings goes back to the money-lender as interest. Such a state of affairs has been progressively depressing the standard of life of our agriculturists. The last two Plans have seen a large-scale expansion of the Co-operative movement. To-day every village in our State and 54 per cent of the rural population have been brought within the movement. In 1953–54, a sum of Rs. 4 crores was distributed to ryots as credit while in the current year, the amount has reached Rs. 25 crores. In spite of this, co-operative credit does not meet the entire needs of all our agriculturists. The programme in the Third Plan is to distribute Rs. 45 crores as credit and to cover 85 per cent of the rural population.

The Co-operative movement can attain stature and play a full part in the development of agriculture, only if the societies expand their functions to meet not only the credit requirements but also the multi-purpose needs of agriculturists. Co-operative societies should supply ryots with fertilisers, insecticides and pesticides, implements and other agricultural requirements and also help them to market their produce at fair prices. The credit societies should therefore transform themselves into multi-purpose service societies. A programme of large-scale expansion of Marketing and Consumer Societies is being organized now. Thirty Primary Marketing Societies were formed and 243 godowns constructed in the Second Plan. The target for the Third Plan is to construct 1,000 godowns. Provision has been made for the construction of 210 godowns in 1961–62. Rs. 6 lakhs have also been provided for participation in the share capital of the Madras Warehousing Corporation. The organization of Co-operative Farming will also be a continuing programme in the coming year.

Major industries

The industrial development of Madras State depends, in a large measure, on the success of the Neyveli Lignite Project. The integrated project conceived at a total cost of Rs. 86 crores has four main constituents : (1) the Mining programme to win 35 lakh tons of lignite ; (2) the Power programme to generate 2·5 lakh kilowatts of power ; (3) the Fertilizer plant which will manufacture 1·5 lakh tons of urea ; and (4) the Briquetting plant to manufacture 3·8 lakh tons of carbonised briquettes. The mining programme involves the removal of 270 lakh cubic yards of over-burden and the lignite seam is expected to be exposed by September 1961. An agreement has been concluded in November 1957 with the U.S.S.R. for the Thermal Power Plant and the construction work is proceeding ahead. The first generator is expected to function from September 1961 and the entire block of power will be released by December 1962. The fertilizer plant will be set up with Italian and West German collaboration. Preliminary arrangements have been taken up and the machinery and equipments have started arriving. Tenders are under consideration for the establishment of the briquetting plant. A clay-washing unit is also being set up with the object of supplying good quality clay available in the lignite mine for the use of ceramic factories.



The Italian Economic Mission which visited the City recently was received at the airport on arrivel by Industries Minister Venkataraman.



The Sikkimese Cultural Delegation which visited the City recently is seen in the picture photographed on arrival at the Central Station.

A total extent of 26,750 acres of land has to be acquired for the Neyveli Project out of which 11,454 acres have been acquired so far. Measures have been taken for the rehabilitation of families vacated from the project area.

Steel plant

The lack of a steel plant has been a major handicap to the industrial development of the State. There are vast reserves of iron ore in Salem district but the iron content of the ore is low. Hitherto, coal was also not available for smelting the iron ore but this deficiency can be met by the lignite from Neyveli. Investigations are going on to use the Neyveli lignite to smelt the Salem iron ore to produce steel. Experts from East Germany have prepared a preliminary report on this possibility and we have also received an offer of help from West Germany. Though the first indications are favourable, the German Experts have stressed the need for a detailed study in a pilot plant. The Union Government have set up a Technical Committee to study the scheme and have also set apart Rs. 25 crores for the purpose as an initial provision in the Third Plan. We have therefore to be patient till these investigations are completed and the experts are in a position to express a firm view on the economic feasibility of the steel project. It will obviously be rash to take up a project involving enormous investment without completing the necessary investigations. A Special Officer has been appointed solely to attend to these investigations for which a provision of Rs. 75 lakhs has been made in the Third Plan of the State. Arrangements are in progress to mine the required quantity of iron ore in Salem and to transport it to Jamshedpur and Germany for carrying out the tests. The Budget provision in 1961–62 for this expenditure is Rs. 7·5 lakhs.

Cauvery oil

Foreign Experts have been investigating the oil deposits known to exist in the Cauvery Delta. In 1956 Russian Experts who inspected the area found indications of oi and advised the Union Government to take up a detailed investigation. The State Government made representations to the Central Government on the matter and investigations were taken up by the Geological Survey of India in 1957–58. So far, 4,000 square miles have been prospected and the work is being continued. The Oil and Natural Gas Commission has deputed experts and the necessary equipment to conduct the Seismic Survey along with the Geological Survey. These investigations have confirmed the existence of oil in the Cauvery Delta.

Good progress has been made towards the establishment of a Raw Film Factory in the Nilgiris district. A site has been selected near Ootacamund and construction work has begun. It is expected that raw film will be produced in this factory by the end of 1962. Another important factory to be set up by the Central Government is the Surgical Instruments Factory at Guindy. Arrangements are also in progress for setting up a Teleprinter Factory at Madras. The scheme for a proto-type factory is also in progress.

Private sector

The private sector has been playing an active role in the industrial development of the State and many medium and large industries were started on the initiative of local industrialists.

The first factories to be established in Madras State were textile mills. In 1950, there were 71 mills with 17 lakh spindles and 7,400 looms. By 1956, 31 more mills had been set up increasing the spindles to 21·7 lakhs and looms to 8,016. In the five years following 1956 the spindleage has gone up to 30·6 lakhs representing 22 per cent of the total spindleage of 135·4 lakhs in the whole of India. But the number of powerlooms has not kept pace with this expansion since most of the yarn in the State is utilized in handlooms. Along with the development of handlooms, it is also necessary to increase the number of powerlooms in textile mills and we have requested the Centre to license 10,000 powerlooms in this State in the Third Plan.

A significant advance in the manufacture of textiles is the increasing use of synthetic fibres. An advantage in the manufacture of synthetic fibres is that wood pulp, which is a raw material, can be grown even on forest wastes unlike cotton which would need fertile lands. Besides, the outturn of synthetic fibre based on wood grown over an extent of land, is many times more than that of yarn from cotton grown over a like extent.

The South Indian Viscose Corporation is installing a Rayon Factory near Coimbatore which is expected to commence production in April-May this year. This is one of the important new industries set up in this State.

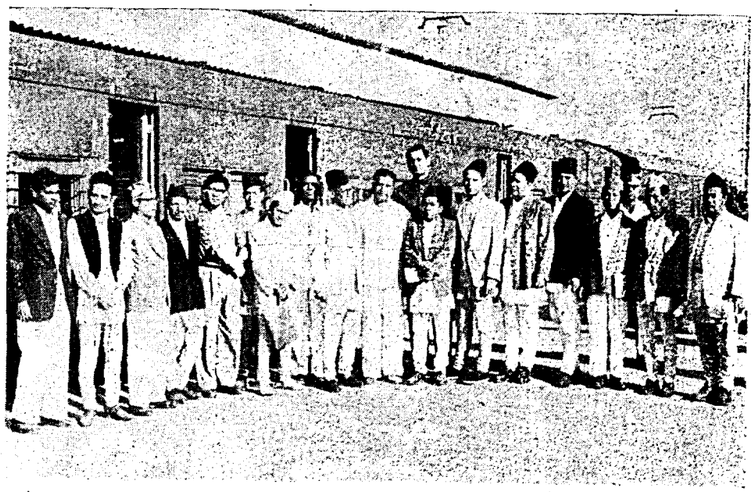
Seshasayees are putting up a paper factory with a capacity of 20,000 tons of paper per year. Six licences have been issued to other manufacturers for setting up small paper units. A proposal for the manufacture of paper pulp with bagasse from sugar factories is under examination. Another by-product in sugar manufacture is molasses which is the raw material for power alcohol. A licence has been given for a factory to produce 20 lakh gallons of power alcohol.

There is the need in our State for many fertilizer factories. Urea will be manufactured in Neyveli. Parry & Co. are setting up a plant for the manufacture of ammonium phosphate. Kothari & Sons have come forward to establish a large fertilizer plant near Tuticorin. When all these factories go into production, our requirements of chemical fertilizers will be met in full. The production of phosphatic manure in our State is now at 110,000 tons. Licences have been issued for three factories at Madras, Cuddalore and Coimbatore for the production of 140,000 tons of super phosphate. When completed, all these factories will yield 2·5 lakh tons of super phosphate. Our requirements at the end of the Third Plan will however be 320,000 tons of phosphate manures and to meet the gap one more factory will be necessary. A factory to produce 60,000 tons of super phosphate at Thanjavur is expected to be licensed soon.

Technical Education

The spread of technical knowledge and industrial skill among the people is the basis for rapid industrial development. Towards this end, we have undertaken several schemes for technical education and craftmen's training in the last decade. As a result, the number of admissions in Engineering Colleges now stands at 1,157 and in Polytechnics at 2,910.

Rapid industrialization can be ensured only if the industrial organizations themselves provide for the necessary apprentice training. The Integral Coach Factory at



A goodwill delegation from Nepal visited the City recently to study the progress registered in Harijan welfare work. Picture shows the delegation photographed on arrival at the Madras Central Station.



The Annual Sports Meet of the Stationery and Printing Department was held recently when staff members had the opportunity of showing their skill in games. In the picture Sri Royappa, Secretary to Government, Public Works Department, who presided on the occasion, is seen giving away a trophy to one of the winners.

Perambur gives such training. It is necessary that big institutions in the private sector also should come forward to offer such facilities. Government will render all assistance towards formulating suitable schemes.

Small Industries

Increased employment and the diffusion of technical skill among the people are possible only by the wide dispersal of small-scale industries. Good progress has been made in our State in this direction. As against the small amount of Rs. 12 lakhs spent in the First Plan, Rs. 3,96 lakhs was spent on small-scale industries and Rs. 1,54 lakhs on Industrial Estates in the Second Plan. Two Industrial Estates at Guindy and Virudhunagar and five Industrial Colonies at Marthandam, Pettai, Madurai, Tiruchirappalli and Erode have been established. Another Industrial Colony will be opened shortly at Thanjavur. A colony is under construction at Katpadi and preliminary works have been taken up for a Colony at Salem. The Industrial Estate at Guindy has developed in a very satisfactory way and houses 128 units, providing employment to 3,000 persons and manufacturing goods to the value of Rs. 2 crores per annum.

The State's Third Plan provides for an outlay of Rs. 3 crores in the public sector on Industrial Estates and Colonies In addition, Government will encourage private industrialists who come forward to establish Industrial Estates by providing 80 per cent of the investment as a loan at a low rate of interest. Based on the small industries so far set up, we may hope that private industrialists will come forward to start many more small-scale units and bring about a wide dispersal of industries in the countryside.

Power

Power is the major enabling factor in the growth of large, medium and small-scale industries. Sustained efforts have been taken for the development of power in the earlier Plans. The installed capacity which was 156,000 kilowatts at the beginning of the First Plan increased to 256,000 kilowatts at the end of that Plan. Many new schemes such as the expansion of the Thermal Plant at Madras, the Periyar Project, Kundah Project, etc., were taken up in the Second Plan and the capacity was stepped up to 571,000 kilowatts. The target in the Third Plan is to increase the generation to 1,041,000 kilo watts. In addition to this, 400,000 kilowatts will be available from the Thermal Power Plant at Neyveli, resulting in a total generation of 1,441,000 kilowatts. Even with all the new generation of the last few years,the supply will not be adequate to meet in full the demand which is expected to reach 1,540,000 kilowatts in 1966.

The installed capacity of 1,441,000 kilowatts at the end of the Third Plan is largely in hydro-electric stations which are heavily subject to the seasonal factor, being dependent on irrigation discharges. The dependable firm capacity all through the year is only 962,000 kilowatts. We will not therefore be self-sufficient in power in spite of the large outlay of Rs. 79 crores in the Second Plan and Rs. 100 crores in the Third Plan.

To meet the growing future demands on a permanent basis more than one atomic power station will be essential and must be planned for.

The average per capita consumption of electricity has now risen to 60 units from 12 units in 1951. The gross revenue from the sale of power has risen from Rs. 3 crores in 1951 to Rs. 15 crores now and is expected to reach Rs. 40 crores in 1966. These figures illustrate the measure of advance so far achieved in the development of power.

We have been making heartening progress in rural electrification. As against 1,813 villages electrified at the beginning of the First Plan, 10,000 villages have been covered by now. In the Third Plan, we may expect every village to have electricity. Electric pump-sets have increased from 14,000 in 1951 to 116,000 now.

Provision has been made in the Budget for 1961–62 for taking up the Mettur Tunnel Scheme and the final stage of the Kundah Project. Russian aid has been promised for the Mettur Tunnel Scheme and the Canadian Government have offered to continue their aid for the final stage of the Kundah Project. The Madras State Electricity Board will incur an outlay of Rs. 15 crores on power in 1961–62 towards which the State Government will advance a loan of Rs. 7·84 crores. The balance of the outlay can be found by the Electricity Board from its own resources.

The target for rural electrification is 1,600 villages in 1961–62. A provision of Rs. 25 lakhs has also been made for loans to private licencees for rural electrification.

The receipts of the Electricity Board can increase only when power is put to greater use in rural areas on small industries. Power plants in future will be mainly thermal as we have come to the end of our hydro-electric resources. It may therefore be necessary to increase the tariff to meet the higher cost of thermal generation. However, if we organize our industries efficiently to earn a substantial return, there may not be any difficulty in collecting the higher rates.

Communications

A good system of communications is indispensable for industrial development.

Roads are also as important as railway lines for the expansion of industries. In fact, in certain countries, the development of roads has been given even a higher priority than railway lines. In the last 10 years, we have improved our roads very substantially and it is now widely recognized that we are appreciably ahead of other States in this respect.

In the last ten years 4,680 miles of roads have been newly laid or improved.

One of the important changes in policy in regard to the maintenance of roads is the decision to take over all major district roads from the District Boards. In the last five years 3,840 miles of roads have been taken over by the Government and some more mileage is proposed to be taken over by the Government. The increased maintenance liability of the Government on the roads so far taken over is roughly Rs. 1,02 lakhs a year.

Thirty-one major bridges and 104 minor bridges have been built on State Highways. Twelve major bridges and 120 minor bridges have so far been built on roads under the District Boards. The annual outlay on roads is now of the order of Rs. 5 crores of which about Rs. 3 crores is on maintenance. A sum of Rs. 11 crores has been set apart for the construction of roads in the Third Plan.

Large-scale industrial development necessitates the import of machinery, raw materials and many other accessory goods from foreign countries. Further, unless we export commodities from our country, we will not be able to earn foreign exchange to finance the imports of essential goods from other countries. Thus, in a growing economy both exports and imports will be continuously going up. To meet the requirements of this expanding foreign trade, our port facilities have also to be expanded. With this object in view, a number of schemes have been taken up for the improvement of the Madras Harbour.

One of the major features of the expansion of the trade in the Madras Harbour in recent years, is the increasing exports of iron ore. As against 20,000 tons of iron ore exported from this harbour in 1950, the total tonnage exported this year is 7·8 lakhs tons and this figure may rise up to 30 to 40 lakh tons in the next 5 to 10 years. The harbour is being further expanded to meet the increased demands of this trade.

Housing

Under housing the Third Plan accords high priority to the programme of bulk land acquisition for which we have set apart Rs. 1 crore in the Budget Estimate for 1961–62. Under this scheme 3,000 acres of land would be acquired in the neighbourhood of Madras. Recently we have also passed an Act placing the State Housing Board on a statutory basis so as to co-ordinate and speed up the implementation of housing schemes.

Village Industries—Handloom

The importance of village industries should not be minimised while concentrating on our Plans for large industries. In the present context of large-scale unemployment, village and cottage industries which are not capital-intensive, have a special part to play. The most important of them is the handloom industry. The industry is in need of thorough overhaul if it should survive.

It is in this context that we have to consider the question of the conversion of handlooms to powerlooms. If we make a beginning by installing powerlooms in the various handloom weavers' co-operative societies, we may be able to meet the popular criticism that powerlooms will throw the handloom weavers out of employment. Besides, under such a scheme the increased returns arising from powerlooms, will be shared by all members of the co-operative society.

Khadi

Schemes for the production of khadi play an important part in increasing employment opportunities in rural areas.

The "firnish" in one of the sport events at the Annual Sports of the Stationery and Printing Department.



We will have to continue these schemes till such time as the new industrial growth on the contrary is able to absorb the idle man-power.

Education

The standard of life of the people will improve only if the economy advances, which in turn depends on the quality of the people themselves. Therefore in a country's development, educational expansion which improves the level of thinking of the people, plays a very important part. The faster the pace of educational development the quicker and more permanent will be the advances registered in other spheres of development.

By the end of this year, every habitation with a population of more than 300 will have an elementary school. We have introduced many other measures to induce children, especially of the poor, to attend schools. The midday meals scheme has done great service in this respect. About 10 lakhs of children representing a third of the strength of all schools, have been covered by this scheme. The expenditure on the midday meals scheme which stood at Rs. 7 lakhs in 1957–58 has risen in the current year to Rs. 84 lakhs and is estimated to go up to Rs. 1·35 lakhs in 1961–62. Sixty per cent of the gross expenditure on this scheme is met by the State Government, the balance being contributed by local people.

Another important development in the educational programme has been the School Improvement Conferences by which our people have contributed Rs. 3·79 crores in cash and kind so far for the improvement of schools. This movement is gaining strength.

The standard of instruction in schools depends mainly on the qualifications of teachers. Because of the low salaries which our teachers have been receiving in the past, there was a measure of discontent amongst them. To improve the living conditions of teachers we have recently extended a number of benefits to them. The annual expenditure on education has gone up by nearly Rs. 4 crores as a result of these concessions.

The most important task on education in the Third Plan is the scheme of compulsory primary education under which all children within the age group 6—11 are proposed to be brought to school. A beginning has been made on the scheme even in the current year by which one-third of the children in the age group 6—7 are being enrolled in schools. The scheme will be extended to the entire State by 1962–63.

By the end of the Third Plan, we hope to bring to school all the children in the age group 6—11. It has been estimated that to reach this target, we would have to admit within the next five years, 14 lakhs more pupils in the schools which would in turn require 31,000 new classes and teachers. This scheme would require a total outlay of Rs. 11·5 crores and the provision for 1961–62 is Rs. 70 lakhs.

Medical and Public Health

Several schemes have been implemented in the sphere of medical relief and public health. Rs. 4·27 crores have been spent on rural water-supply schemes and Rs. 7·4 crores on Urban Water-supply Schemes in the last two Plans. 14,000 wells have been sunk in the villages and 340 composite schemes implemented in the last two Plans. It is proposed to sink 2,500 wells and implement 216 composite schemes in the Third Plan. The National Water-supply and Sanitation Scheme is also being implemented under which 417 villages have been provided with watersupply facilities and 396 villages with sanitation.

The water-supply and drainage problem in the City of Madras calls for special attention. A sum of Rs. 1 crore has been spent on this during the Second Plan. Out of a sum of Rs. 5 crores set apart for this scheme in the Third Plan, Rs. 90 lakhs will be spent in 1961–62.

We have been implementing a number of schemes for the welfare of Backward Classes. More than 30,000 Harijan students are now in receipt of scholarships and boarding grants. The expenditure on Harijan welfare which stood at Rs. 69 lakhs in 1950–51 for the composite Madras State has increased to Rs. 3,55 lakhs in the current year for the smaller residuary State.

Budget Estimates,

The Budget for 1961–62 estimates the receipts under Revenue Account at Rs. 87,50 lakhs and expenditure on Revenue Account at Rs. 90·35 lakhs. This has resulted in a Revenue Deficit of Rs. 2,85 lakhs. On the receipts side, there is a shortfall of Rs. 1,79 lakhs when compared with the Revised Estimates for 1960–61. This is the net result of an improvement in State and Central Taxes of Rs. 71 lakhs offset by a worsening in Non-Tax Revenue of Rs. 2,50 lakhs. The shortfall is entirely explained by the withdrawal of the Central assistance for increasing the emoluments of low-paid employees on which account we will be realising Rs. 2,34 lakhs in the current year.

The expenditure on Revenue Account in 1961–62 is expected to be Rs. 90,35 lakhs which is Rs. 2,29 lakhs more than in the current year. The main increases will be on Education (Rs. 3,19 lakhs); Agriculture (Rs. 87 lakhs); Co-operation (Rs. 28 lakhs); Grants-in-aid (Rs. 63 lakhs); Local Development Works (Rs. 77 lakhs) and Community Development (Rs. 35 lakhs). The variations between the Revised Estimates, 1960–61, and the Budget Estimates, 1961–62, have been discussed in detail in the Budget Memorandum.

Capital Expenditure, 1961-62.

The Capital Expenditure for the year 1961–62 is fixed at Rs. 18,10 lakhs made up of Rs. 81 lakhs on compensation to Zamindars, Rs. 3,77 lakhs for the Parambikulam Project; Rs. 43 lakhs for other irrigation projects; Rs. 1,46 lakhs for Special Minor Irrigation, Rs. 15 lakhs for the Desilting-*cum*-Reclamation Scheme; Rs. 3,01 lakhs on Industrial development; Rs. 1,00 lakhs on bulk acquisition of lands; Rs. 4,73 lakhs for Capital Outlay on Roads and Buildings; Rs. 1,01 lakhs for Road Transport; Rs. 30 lakhs for the Rural Water-supply Scheme and the balance on miscellaneous items. The outlay on Power in 1961–62 has now been fixed at Rs. 15,41 lakhs. We will be providing a loan of Rs. 7,84 lakhs to the Electricity Board which meets the balance of expenditure from its own resources.

Loans and Advances

Rupees 21,36 lakhs has been set apart for loans and advances during 1961–62, out of which Rs. 7,84 lakhs will be given as loans to the Electricity Board, Rs. 1,17 lakhs to the Madras City Corporation; Rs. 1,06 lakhs to the City Improvement Trust; Rs. 1,33 lakhs for Water-supply and Drainage Schemes to the various local bodies; Rs. 2,87 lakhs to cultivators; Rs. 51 lakhs as State-Aid to Industries; Rs. 31 lakhs for Handloom Weavers' Co-operative Societies Rs. 1,00 lakhs for Housing and Rs. 84 lakhs for Community Development.

Resources

We have to pay Rs. 3,82 lakhs on account of the open market loans maturing in 1961–62. The share of this Government will be Rs. 1,97 lakhs. The balance is to be borne by the States of Andhra Pradesh, Kerala and Mysore. It is proposed to raise an open market loan of Rs. 10 crores for meeting the Capital Expenditure of next year. The Ways and Means Budget has been balanced and closing cash balance of Rs. 78 lakhs is anticipated at the end of 1961–62.

Concessions

The facility of compounding in Sales Tax is now available for small dealers with a turnover of not more than Rs. 25,000 a year. The Minister in charge of Commercial Taxes had assured the House that the extension of this concession would be examined on the basis of the experience in working the new Sales Tax Act. Government have now decided to extend this concession to dealers with the total turnover of not more than Rs. 50,000 a year based on the current year's assessments.

Free Education

Free education is now available to all children up to the V Standard and to poor children up to the VIII Standard. Beyond VIII Standard, Education is free



An interesting situ tion snapped during the progress of the "Musical Chairs"—an event for ladies—at the Annual Sports of the Stationary and Printing Department.

only to children belonging to Scheduled Castes and other Backward Classes. It has been emphasised for some time that educational concessions should be on the basis of economic backwardness rather than on the basis of communal status. Government have accepted this view and have decided to extend free education up to the XI Standard to all children irrespective of caste or creed. A provision of Rs. 58 lakhs has been provided in the Budget for this purpose. This decision is the first step towards a society where no deserving student will be denied education on account of poverty.

Five-Year Plans

I shall now explain the provisions made in the Budget towards the outlay on the Plan. The size of the States' Second Plan had been originally fixed at Rs. 1,52 crores. The actual outlay during the first four years amounted to Rs. 1,42·76 crores. The revised estimates for the current year, as now fixed, provide for an expenditure of Rs. 43·43 crores taking the total outlay to Rs. 1,86·19 crores.

	(Rs. crores)	
1956–57	28·67	
1957–58	30·25	
1958–59	34·61	
1959–60 (Accounts)	39·89 + 9·34	(Kundah equipment.)
Total	1,42·76	
1960–61 (Revised Estimates) ..	43 43	
Grand total ..	1,86·19	

We have thus exceeded the original target by nearly Rs. 34 crores and therefore we may well claim a substantial measure of success in the implementation of the Second Plan. We were able to do so because of our special exertions in raising additional resources and in organizing the necessary executive machinery in advance of time. As against an additional taxation of Rs. 13 crores expected of this State in the Second Plan, we had actually raised Rs. 20 crores and we had also done better on open market borrowings. Let us hope that we could profit by this experience and do better in implementing the Third Plan.

The size of the Third Plan of the State has been fixed at Rs. 2,91 crores. According to the general advice of the Planning Commission, 16 per cent of the total provision, i.e., about Rs. 46 crores, should be the target for the first year. We have however budgetted for an outlay of Rs. 48 crores in order to meet all the essential requirements of the various development departments. The recurring expenditure for maintaining the new schemes introduced in the Second Plan will amount to about Rs. 7 crores. If this committed expenditure is also reckoned, the total expenditure on new development schemes will amount to Rs. 55 crores and this outlay compares very favourably with the sum of Rs. 43·43 crores.

Conclusion

The successful execution of the Third Plan calls for a strenuous effort in mobilising all resources of the country. The State's Third Plan alone is of the magnitude of Rs. 2,91 crores but that, we should note, is only a part of the National Plan. The State's effort will be supplemented by the investments of the Central Government within the State. Besides, the private sector will also invest on many industries in the coming Plan period. These investments will increase production, raise the standard of life of the people and eliminate the poverty and inequality around us to-day. We are a nation of poor people with large numbers living on the margin of subsistence and incapable of saving any part of their income. Their standard of life can be raised only with large scale investment through new capital formation in successive Plans. But the poverty of the people rules out savings and therefore investment, and the absence of sufficient investment results in continued poverty. Mobilisation of savings is the one and only way to break through this grim vicious circle. The foundation for the well-being of future generations can be laid only if we practice thrift and invest our savings entirely in the various development projects. In a democratic country, taxation has its limits and it is easier for the Government to borrow from the people to implement their Plans. This method of tapping resources also affords an excellent opportunity to the people to directly participate in the National reconstruction. Besides, it secures to them a good return on their investment. There has been a good response so far for the open market loans floated by the Madras Government. It is not enough if a few financiers support these loans. Innumerable small investors must be given an opportunity to take part in this great venture and it is with this aim that we are now concentrating on Small Savings and the allied scheme of Prize Bonds.

If we succeed in this effort, it is possible not only to fulfil the targets in the next Plan but also to go beyond them.

Triple Benefit Scheme for School Teachers

The Government of India has recommended to the State Governments the adoption of the Triple Benefit Scheme for teachers introduced by the Government of Madras.

The Scheme includes provision for pension, provident fund and insurance and applies to all teachers including those in aided schools.

The question of extending the scheme to teachers in the Union territories is also being examined.

Future of the Handloom Industry

SRI K. J. SOMASUNDARAM, I.A.S.—*Director of Handlooms.*

Within the economic structure of the State as well as of the Nation, Handloom forms an important limb. Its organized and rationalised growth means much to the Nation. The handloom industry has grown steadily all these years, in spite of many ups and downs and it will yet grow. Its vitality has withstood the onslaught from foreign-made fabrics and the indigenous textile mill productions.

The handloom industry is the premier cottage industry of our country. Next to agriculture, it provides the largest employment opportunities to the people. It produces roughly one-third of the clothing requirements of the country and contributes considerably towards self-sufficiency in clothing. It has been estimated that out of 28 lakhs of handlooms in the country the State of Madras alone has approximately five-lakh looms. Together with the ancillary workers engaged in preparatory and finishing processes, these five lakhs of handlooms in the State provide employment directly or indirectly to about 20 lakhs of people.

The handloom industry had the monopoly of production of cloth till almost the end of the last century. It attained a very high degree of perfection and weaving was done so exquisitely and with such fine yarn that the cloth was almost transparent. The Muslims of Dacca, the Patolas of Baroda, the fabrics of Assam and Manipur, the silk sarees of Kancheepuram, dhoties of Salem, etc., won renown in foreign lands. The tradition of handloom weaving in the country has been long and distinguished and the skill of the Indian handloom weavers has been of a very high order.

Competition from Mills

Indian export of textiles to the western world continued during the middle ages and up to the middle of the 19th century. As a result of the introduction of the spinning-jenny the emergence of the powerloom and such other technical advances, India not only ceased to export but began to import cotton textiles in large quantities. Weaving mills in the country began to be established one after another in various places and mill cloth emerged as a serious competitor to the hand-woven fabric. The growth of industrialisation affected the fortunes of the handloom industry in a large way though as the largest cottage industry in India, it continued to occupy a prominent place in the general economy of the country.

The boom enjoyed by handlooms and the mills during the war and immediately thereafter could not last for long. The dispersed nature of the industry, the small financial resources of handloom weavers and the fluctuations of the market made the condition of the handloom weaver unenviable. To overcome the crisis to the industry, a co-ordinated effort towards increasing the efficiency of the handloom weaver and making himself reliant and self-supporting was needed. The Government of India realised this and took several steps-interim and long range-calculated to solve the problems of the industry. The most important steps were the setting up of the All-India Handloom Board and the constitution of the Cess Fund.

Aid from Cess Fund

The functions of the Handloom Board consisted of advising the Government on the problems of the industry, examining schemes for its development and recommending assistance from the Cess Fund. The Cess Fund was constituted by levying an additional excise duty on all mill cloth other than that intended for export, manufactured within the country. The large-scale financial assistance from the Cess Fund enabled the handloom industry to formulate and execute several schemes for promoting the economic interests of the handloom weavers and for developing the industry on sound lines. To ensure that the assistance provided reached the weaver fully, Government

In connection with Handloom Week, a Handloom Exhibition was organized at Egmore in February. Governor Medhi who visited the Exhibition is seen examining some fabrics displayed at the Exhibition.





Mrs. Medhi giving away the prize to the winner in the Handloom fabrics (frocks) event.

decided that the industry should be organized on co-operative lines and that all assistance to the handloom industry should be made available only through co-operatives.

Following these decisions, Government are taking vigorous steps to enrol the weavers as members of weavers' co-operative societies. As not all the weavers could find the necessary resources for participating in co-operative organizations, share capital loans are advanced to the weavers to enable them to become members in weavers' co-operative societies. A share capital of about Rs. 74 lakhs has been disbursed to the weavers so far, in this regard. To enable these societies in their turn to provide full employment, working capital is provided through District Co-operative Central Banks. Rs. 161·48 lakhs have been given to Central Banks for disbursing working capital loans to weavers' co-operative societies. The Reserve Bank of India has made available Rs. 79·54 lakhs in 1960–61 to 11 Co-operative Central Banks to finance production in primary weavers' co-operative societies. With assistance from the Cess Fund, The Madras State Handloom Weavers' Co-operative Society was enabled to open hundreds of selling units within and outside the State, so that an effective market could be found for the increased production in weavers' co-operative societies. The society has got about 300 selling units located in all parts of the State and outside the State. It disposes of about 20 per cent of the goods produced by its affiliated primaries.

Improved techniques

Government have also recognized that any permanent improvement in the condition of the handloom industry can be effected only if its technique is modernised. They have, therefore, been providing financial assistance to the weavers to use improved appliances such as steel reeds, varnished healds, dobbies, take-up motion attachments, etc., free of cost or at part cost. A sum of Rs. 14·79 lakhs has been given to weavers' co-operative societies for the purchase of improved appliances. To increase consumers' preference for handloom fabrics, Government have permitted co-operative institutions to allow rebate on retail and wholesale sales of handloom cloth. On special occasions, special additional rebate has also been allowed on the retail sales of handloom cloth. So far over Rs. 350 lakhs have been spent under the scheme of rebate in our State.

Government have also recognized the need to improve the living conditions of the handloom weavers. The handloom industry is a cottage industry and as such the weaver's house is also his workshop. Government have therefore formulated schemes for improving the housing conditions of the weavers. Government have sanctioned so far 16 such schemes for the construction of 1,580 houses of which 1,230 houses have been completed and the remaining houses are under various stages of construction. The development of the Silk and Art Silk handloom industry has been taken up on hand. Weavers who have no looms of their own or who have been thrown out of work by master weavers or handloom factories are also provided with work in co-operative factories started for their benefit.

A Handloom dress competition for high school girls was organised at the Museum Theatre Picture shows one of the successful contestants on parade



Thirteen such factories have been started in different parts of the State for providing work to about 860 weavers and 340 auxiliary workers. A sum of Rs. 8.19 lakhs has been spent for implementing this scheme.

Better Quality Yarn

It has been considered by a section of the people that instead of separate industrial factories, for their exclusive benefit, weavers who have no looms of their own should be admitted in the existing weavers' co-operative societies and assistance extended to them by the grant of loans and subsidies for the purchase of looms and accessories. A pilot scheme for the purpose has been sanctioned for the admission of 100 loomless weavers in the existing weavers' co-operative societies.

Supply of yarn is an important requisite in the handloom industry. To enable weavers' co-operative societies to get good quality yarn at reasonable prices, three co-operative spinning mills have been started in this State, one each at Pettai in Tirunelveli district, Srivilliputhur in Ramanathapuram district and Nazareth in Tirunelveli district. Rs. 38·78 lakhs have been invested by the State Government in the shares of these co-operative spinning mills. The South India Co-operative Spinning Mills at Pettai has been set up with a capacity of 16,000 spindles. It is proposed to raise the spindleage to 24,000. It has commenced production and on an average it produces about 600 bales of 20s and 40s yarn of good quality. Two other co-operative spinning mills: one at Nazareth and the other at Srivilliputhur, are taking steps to purchase machinery and construct necessary buildings. They are expected to go into production during 1961–62. More co-operative spinning mills are contemplated in the Third Five-Year Plan. In addition, the State Government has been experimenting with the decentralised production of yarn of lower counts on the 16 and 32 spindle units. If the successful units are introduced into the weavers' co-operative societies, it will not only ease the supply of 20s and 40s yarn within the society but also give added income to its weaving members of the primary weavers' co-operative societies. Besides the schemes which are executed with financial assistance from the Cess Fund, the Government of India have also taken other measures necessary to protect the industry such as curtailing production of dhoties by mills, reserving certain varieties of cloth for production exclusively by the handlooms and by levying a general excise duty on mill-made cloth. These measures have greatly helped the handloom industry. The socio-economic condition of the handloom weaver especially in Madras State has considerably improved during the last six years and the industry has steadily been consolidated under the impact of a large number of handloom development schemes financed from the Cess Fund under the Second Five-Year Plan. More than Rs. 10 crores have so far been spent on the various schemes for the development of the handloom industry in this State.



As part of the programme to popularise handloom fabrics dress competitions are annually held during handloom exhibitions. Picture shows Mrs. Medhi, who distributed prizes, passing on the trophy to the winner in the Handloom sarees (silk) event.

There are about 1,030 weavers' co-operative societies with 2·21 lakhs of looms in their fold. Their production is estimated at about Rs. 11 crores per year.

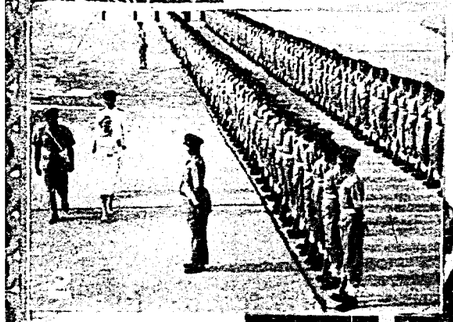
Some problems

The weavers' co-operative societies have no doubt recorded great progress during the past eight years. But there are still some factors which tend to impede their growth. The question of availability of yarn of the required counts at reasonable prices for the handloom industry is engaging the attention of the Government. The situation following the slackening of demand in the American Market of the "Madras Bleeding" variety of handloom cloth is known. Government sponsored a delegation of five-men including one official, associated with the handloom industry to the Far East to find out the possibility of creating and expanding markets for these fabrics in the Far East. They are now considering the report of the delegation and will take appropriate measures in the light of the report.

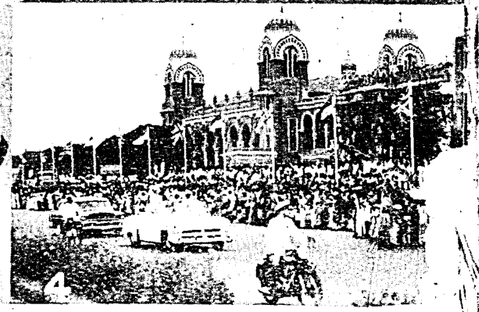
One other competitor to the industry besides the mill industry is the powerloom. During the Third Five-Year Plan, the Government of India have proposed to introduce powerlooms in the co-operative sector of the handloom industry. The competition by powerlooms is in certain respects serious as several powerlooms are exempted from the levy of excise duty and are free from the obligations cast on the composite mills by various labour laws. But the vitality of the handloom is great and it is not easy for the powerloom to crush it. In fact the industry has made steady progress during the past seven years and has reached a stage where it is certain to retain the confidence of the people and ensure its further development.

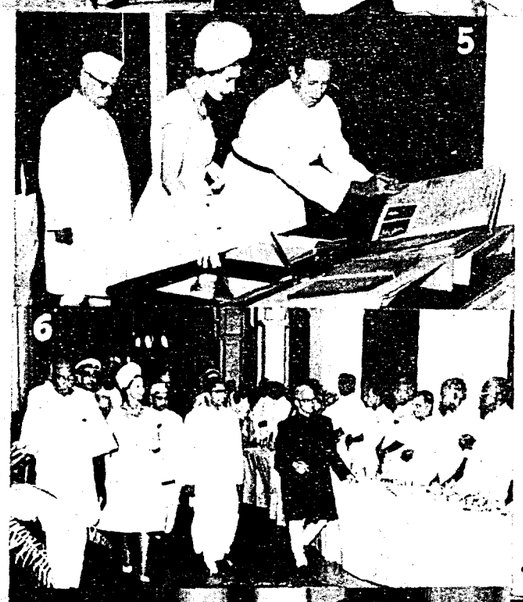
The Queen in the City















1. Governor Bishnuram Medhi receiving t.
2. The Queen inspecting the Guard of Ho
3. Chief Minister Kamaraj introducing his C
4. The Queen greeting a section of the cro State Drive.
5. The Queen inspecting the page relating register shown to her during her halt at St. M
6. At the Rajaji Hall, the Queen met the l
7. The Queen cutting the surprise birthd presented during the State Government Re
8. The Queen and the Chief Minister exc visitors were accorded a dinner reception.
9. Danseuse Vyjayanthimala presenting a b
10. The Queen inspecting a third class coa
11. The Queen in the quarters of one
12. The Duke inspecting one of the units in visit there.
13. The Queen acknowledging greetings on Children's Rally at the Corporation Stadium.
14. The Queen met students and educationists
15. The Queen met members of the Adyar Cl
16. Farewell.







at the airport.
to esented by an I.A.F. unit at the airport.
leagues.

At Senate House in the Marina during the
Bhav
marriage of Lord Clive in the marriage
gram h inside Fort St. George.
Kam the State.
Naty lebration of Prince Andrew's birthday
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eetings at Raj Bhavan where the Royal

At the Queen during the Raj Bhavan reception.
Sta the Integral Coach Factory.
Roy orkers of the Integral Coach Factory.
In Buckingham and Carnatic Mills during his

nection of the children during the mammoth

the State during the reception at the University.
at the Club Reception.









The Queen in the City

February 1961 will remain in the minds of the people of Madras State for a long time to come, for, during the month, Madras had the privilege of welcoming British Royalty. Queen Elizabeth II and her Consort the Duke of Edinburgh visited the City as State Guests. The visit was historic as it was the first time that the City was receiving a ruling British Sovereign.

The State visit of the Royal couple had been awaited with expectancy. Royalty has always fascinated the Indian mind and Indian history is full of the colour and majesty of it. Delhi and Calcutta had given magnificent receptions to the Queen and Duke. Both in the Capital and at Calcutta more than a million had cheered them.

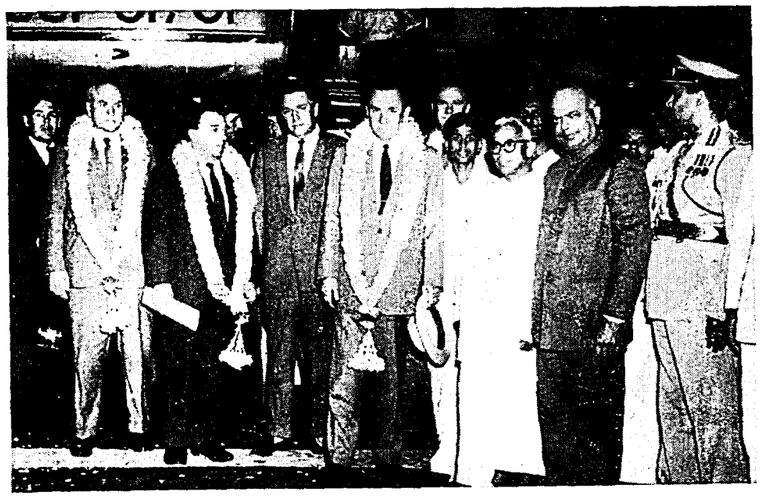
Madras, the earliest of the British settlements in India, did not lag behind. Over a million smiling and cheering faces greeted the Royal couple, all along the 19-mile State drive from the airport to the heart of the City. The reception was outstanding.

The public response to their presence proved that the bonds between Britain and India have not ended with the attainment of independence but have grown stronger in the Commonwealth relationship.

The engagements for the Royal visitors on February 19, the day of their arrival, were designed to revive historical associations. The Queen and Duke made a brief halt at St. Mary's Church inside Fort St. George during the State drive. This is one of the oldest Anglican Churches in India. Robert Clive, one of the Architects of British power in India was married here. The Queen and Duke were shown the relevant page in the marriage register in which Clive and his bride had signed on February 18, 1763. They were also shown the signature of the Queen's grandfather, King George V in the Visitors' book taken from him on January 27, 1906, when he had visited the place while he was the Prince of Wales.

State Reception

Their next visit was to the Rajaji Hall to attend a reception by the State Government. The Rajaji Hall was the Banqueting Hall of Government House in pre-independence days. Many portraits and relics there recall British rule. The hall used to serve well for ball-room dancing in those days. For the Queen's visit, the flooring of the hall had been specially decorated with Rangoli art drawings. The Royal couple were received by the Chief Minister at the Rajaji Hall. They also met the Legislators of the State specially assembled there to greet them.



Mr. A. N. Kosygin, Deputy Chairman of the Council of Ministers of the U.S.S.R. who was in the City during February was received by Home Minister Bhaktavatsalam at the airport on arrival.



iss Anita Bose, daughter of Subhas ndra Bose, was given a dinner in ji Hall during her visit to the City ng February by Chief Minister Kamaraj. ire shows Miss Bose with other ees being greeted by the Chief ster.

he State had not forgotten February 19 was Prince lrew's birthday and had kept a lovely birthday cake ı 'Many happy returns' inscribed on it ready to be ented to the Queen and Duke. It was a pleasant rise to them and the Queen had to use both her hands ut the ample cake.

t the after-dinner reception by the Governor at Raj van, the Royal pair witnessed a representative proame of Indian dance by popular exponents. Artiste nala gave a demonstration of classical Bharatha ya and Vyjayanthimala and the Padmini-Ragini rs performed a variety of Oriental dances.

n opportunity to get an idea of the strides that the e has made in its development was provided to the al visitors on February 20. The Queen visited the gral Coach Factory, the largest of its kind in Asia was much impressed with its modernity. She inspeccoaches built and furnished by the factory. She ed interest in workers' conditions and visited the ters, provided by the factory, of two workmen and t a few minutes with their families.

ıe Duke visited the Buckingham and Carnatic Mills e he spent nearly an hour inspecting cloth production .

mammoth Children's Rally of school-going children he Corporation Stadium gave the Royal visitors mpse of the interest the State took in the education ts young. The Stadium stands were jam-packed over 50,000 children and the rally was colourful impressive.

The Queen and Duke attended a University reception at the Senate Hall and spent some time with educationists, professors and students acquainting themselves with details regarding University education in the State.

Many British firms have played their part in the progress of the State. The Royal couple met prominent representatives of these business houses at a reception accorded by the Adyar Club. Many South Indian businessmen also participated in the reception lending it a cosmopolitan colour.

The Royal pair was accorded a ceremonial send-off at the airport on February 21. At a few minutes past 11 a.m. the Britannia took off and the vast assembly that had turned up at the airport knew then that a memorable visit had ended.

There were other distinguished visitors to the City during the month including the Maharajah of Bhutan, Mr. A. N. Kosygin, Deputy Chairman of the Council of Ministers of the U.S.S.R. and a visiting Italian Economic Mission.

Handloom Week

Handloom Week and Fire Prevention Week provided other highlights during the month. As part of the Handloom Week Celebrations, a Handloom Exhibition was organized in the City as during other years. The programme was aimed at popularizing handloom goods. Cultural shows, a fashion parade and speeches by Ministers and officials were arranged during the 7-day celebrations from February 6th to 12th. Handloom goods have an export market and earn valuable foreign exchange. But in the home market they find it difficult to effectivelycompete with



The Maharajah of Bhutan who visite the City recently was accorded a receptic by Governor Medhi at Raj Bhavan, Guind

mill goods. The Finance Minister Sri C. Subramaniam who inaugurated the Handloom exhibition, giving expression to this feeling stressed that handlooms could not be assured of a secure future unless the industry took increasingly to powerlooms. The statement by the Industries Minister Sri Venkataraman that Government were considering erection of a sanforizing plant in the State to help handloom weavers make fabrics on a par with mill goods lent significance to this plea.

The problem of housing and housing sites for low income groups and of slum dwellers has consistently exercised Government. The Chief Minister who has expended considerable thought on it felt, in the course of a discussion, that the soaring value of house-sites could be checked if rich men who commanded transport facilities could be induced to build bungalows in the City's suburbs. T Chief Minister also felt that if they provided out-houses f their servants, that would help prevent the developme of slums.

Government have been taking steady steps to promc Tamil for educational and official purposes. The st already made in this direction has been progressively inte sified. In line with this policy, a significant decision w taken by Government during the month in connecti with the renaming of the State. The Government announ ment in this regard stated that while in English t name of the State would continue to remain as 'Madi State', in Tamil, the State would be known as "Tami Nadu".

Sheffield Indian Students' Journal

The *Indian Student*, the yearly journal of the Sheffield University Union's Indian Students' Society is the latest in the chain of activities of the society in this field. Regular Indian evenings are organized at the Sheffield International Centre, when documentary films are shown, discussions and Indian music concerts held and Indian food served. A start has been made on collecting books on India, and the society has formed a Sheffield branch of the Asian Music Circle.

A THEATRE FOR CHILDREN

Films that educate and entertain children are being exhibited during every week-end at the well-furnished Children's Theatre in the Government Estate, Mount Road. Hundreds of children troop into this Theatre every week to enjoy these films.

HAVE YOU TAKEN YOUR CHILDREN TO THESE SHOWS?

Patrons of the Children's Theatre, be they little ones or their proud parents, are all praise for this amenity. Srimathi Indira Gandhi said :

"Madras has stolen a march over Delhi which is still struggling with plans for a Children's Theatre".

MADRAS LEADS IN THIS AS IN OTHER SPHERES.

Land Reforms in Madras State

SRI V. KARTHIKEYAN, I.A.S., *Director of Agriculture.*

The system of land tenure in the State can, broadly speaking, be divided into two major categories: the Zamindari and the Ryotwari. There is also a minor category, the Inam tenure. The Zamindari and the Inam tenures were placed on a statutory basis during British rule. The ryotwari system was also properly organized and put on a firm basis by the British rulers.

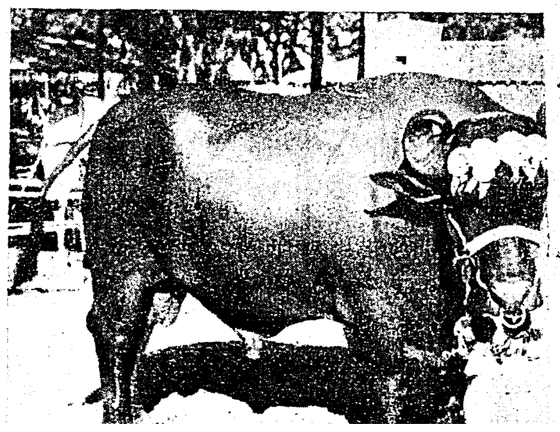
While landowners under the ryotwari system had direct dealings with Government and enjoyed the benefits of fixity of assessment during the currency of a settlement, proper maintenance of irrigation sources by the Government and an authentic record of rights in the form of a Settlement Register based on a cadastral survey of their fields and soil classification, the ryots in the Zamindari and Inam villages had no such facilities and suffered much from the personal rule of Zamindars and Inamdars. The need to extend a measure of protection to these ryots and to guarantee their occupancy rights and ensure a reasonable maintenance of irrigation sources was fully realized early in this century and the passing of the Madras Estates Land Act, 1908, was the result. This Act did prove useful to the ryots in Zamin and certain Inam villages and the Court of the Revenue Divisional Officer became the regular forum where their disputes with their proprietors could be legally adjudicated. However, the procedure was costly and time-wasting and the Act did not apply to Iruwaram Inam grants. In 1936, an important amendment was passed to this Act by which the Act was extended to Iruwaram Inam villages also. Even after this, the position was not quite satisfactory from the ryots' point of view and they were subjected to rack-renting. The answer to this problem was the Madras Estates Land (Reduction of Rent) Act, 1947, under which the rents payable by ryots to their landlords in all estate villages were substantially reduced and brought more or less to the level of ryotwari assessments on similar lands in the neighbourhood.

Further reforms soon followed. As a measure calculated to abolish the intermediaries and bring the tenure into one uniform pattern, Government passed the Madras Estates (Abolition and Conversion into Ryotwari) Act, 1948, to provide for the acquisition of the rights of landholders in permanently settled and certain other under-tenure and Inam estates and for the introduction of the ryotwari settlement in such estates. The implementation of this Act is in full swing and is expected to be completed in about 3 years. There are now no Zamindars and all Inam estates except the Iruwaram grants have been taken over by Government. The abolition of the Iruwarm grants is also under consideration.

Tenancy Reforms

In 1952, out of fear of anticipated land reforms, to the detriment of landlords' interests, the relationship between the landowners and their agents on the one hand and the tenants and farm labourers on the other became strained and this was very noticeable in Thanjavur district. Several Mirasdars in that district refused to renew lease agreements with their usual tenants and displaced them either by bringing in new tenants or taking the lands under home (Pannai) farm. Towards the middle of 1952, the unrest among the agricultural class which was becoming increasingly manifest in parts of the district reached a high pitch resulting in breach of peace. An Ordinance providing for the reinstatement of evicted tenants and permanent farm servants was promulgated which was later replaced by an Act of the Legislature called the Thanjavur Tenants and Pannaiyals Protection Act. The minimum wages to be paid to a pannaiyal were also prescribed under this Act. A machinery (with Revenue Department) for enquiring into the dismissal of farm labourers (Pannaiyals) and for their restoration on just and equitable terms, if the dismissal was wrongful, is also provided for in the Act. In short, the legislation was based on the customary practices in the matter of rent, wages and the sharing of the costs of cultivation. The provisions of the Act were not applicable to lands held by owners if the extent held by them in a village did not exceed 6¾ acres of wet (one veli) or 20 acres of dry land.

The Murrah Buffalo Bull of the District Livestock Farm, Orathanad was declared the Supreme champion and Best Animal during the 4th Annual Cattle show held in the City recently.



The provisions relating to cultivating tenants in the Act have now been replaced with the passing of the general Act covering the whole State, the Madras Cultivating Tenants Protection Act, 1955. Only those provisions which regulate the conditions of Pannaiyals are in force now.

In 1953, consequent on certain disturbances in parts of South Arcot district, the Tanjore Act was extended to certain areas in Chidambaram and Cuddalore taluks of that district.

Tanjore Act Improved

With the passing of the Tanjore Act, representations were made to the Government that in anticipation of land reforms legislation, owners of lands in other districts also were evicting cultivating tenants with a view to bringing the lands under their personal cultivation. They considered that large-scale eviction would, if allowed to continue, lead to agrarian trouble, disturbance and breach of peace. To protect the tenants from unjust eviction, the Madras Cultivating Tenants Protection Act, 1955, was enacted. This Act is an improvement upon the Tanjore Tenants and Pannaiyals Protection Act, 1952. The Act seeks to give protection from eviction to cultivating tenants and provides for—

(i) the security of tenancy without time limit;

(ii) compulsory execution of fresh lease deeds (if the ryot or the owner demands it after the Act came into force);

(iii) resumption of land for personal cultivation by landowners under certain conditions; and

(iv) eviction of tenants under certain circumstances.

Only the Revenue Divisional Officers or Special Deputy Collectors appointed for the purpose are competent to deal with the cases under this Act.

So far, there has not been any large-scale ejectment of tenants through the devise of voluntary surrender. The tenants are well aware of the several safeguards guaranteed to them through the legislative measures. Ejectment of tenants is therefore possible only under Section 3 of the Madras Cultivating Tenants Protection Act, 1955, as amended by Act XIV of 1956.



Dr. P. Subramaniam, Superintendent of the Orathanad Farm, receiving the championship cup from Mrs. Medhi who distributed prizes to the winners during the Cattle Show.

Law to regulate rents

Up to 1956, there had been no law to regulate the rents to be paid by cultivating tenants to their landlords. The Planning Commission recommended that the rights of the tenants required to be defined and that rent should be fixed taking into account the expenses of cultivation and other incidental risks. It also advised that the legislation should specifically provide for—

(i) the fixation of fair rent that may be paid by tenants;

(ii) the mode and time of sharing the produce; and

(iii) the disposal of disputes arising between landlords and tenants.

Accordingly, the Madras Cultivating Tenants (Payment of of Fair Rent) Act, 1956, was enacted. In this Act, "Fair Rent" is defined as follows:—

(i) in the case of wet land, 40 per cent of the normal gross produce or its value in money;

(ii) in the case of wet land where the irrigation is supplemented by lifting water, 35 per cent of the normal gross produce or its value in money;

(iii) in the case of any other class of land 33⅓ per cent of the normal gross produce or its value in money. and

(In every harvest, the landowner shall be entitled to one fifth of the straw or stalk of all the crops.)

Lands in which sugarcane, plantain or betel vines or any crop which does not give any yield for a continuous period of two years or more, from the time of cultivation, are exempted from the provisions of the Act. (The question of bringing such crops also within the purview of the Act



Chief Minister Kamaraj who inaugurated the Cattle Show watching with interest one of the prize animals in the show.

is separately under consideration). The produce is required to be shared at the threshing floor. Generally, the Thasildar and the District Munsif have been empowered to exercise the functions of a Rent Court and Rent Tribunal (appellate authority) respectively for the administration of the Act.

This Act has put both the tenant and the landlord wise about their respective legal rights in regard to crop sharing and a sizeable number of disputes have been settled under this Act in Thanjavur and Tiruchirappalli districts. However, instances of crop sharing on a 50 : 50 basis based on mutual understanding and oral agreement are still not uncommon in many parts of the State.

The relationship between the landlord and tenant was not settled under the Madras Cultivating Tenants Protection Act in respect of certain peculiar tenures in Tiruchirappalli district. The question as to who were cultivating tenants had to be decided in view of certain peculiar kinds of cultivators in that district called Kaieruvaramdars and Mattuvaramdars. These cultivators maintained that they were cultivating tenants under the Act. There were disputes between the landowners and the Kaieru and Mattuvaramdars leading to unsettled conditions and breach of peace and resulting in fall in agricultural production. The dispute went upto the High Court; and the Madras High Court held that the Kaieru and Mattuvaramdars in the Tiruchirappalli district were not cultivating tenants as defined in the Madras Cultivating Tenants Protection Act, 1955. The Government therefore considered that there should be a special legislation for these varamdars. The Tiruchirappalli Kaieruvaram and Mattuvaram Act, 1958 was, therefore, enacted. Under this Act, the customary rights and obligations of Kaieru and Mattuvarmdars in the specified villages of Tiruchirappalli district have been legally recognized and protected.

Land ceiling bill

It will be noticed that the legislative measures detailed above have resulted in the following :—

(*a*) elimination of intermediaries like zamindaris, inamdars and farmers of rent ;

(*b*) fixity of tenure ; and

(*c*) reasonableness of rent to cultivating tenants.

As a measure of further reform and in the light of advice of the Planning Commission, the Government have decided to impose ceiling on agricultural holdings and have accordingly framed and published the Madras Land Reforms (Fixation of Ceiling on Land) Bill, 1960. The provisions of this Bill are now being examined in detail by a Joint Select Committee of the State Legislature and the Bill, with such modifications as the Legislature may ultimately approve, is expected to become law in the near future.

It is hoped that the implementation of this Bill will conduce to a more equitable distribution of the available land in the State and also result in increased agricultural production on account of the greater emphasis on improved and intensive cultivation than at present.

The land reforms so far carried out in this State have followed an evolutionary and natural pattern and have, on the whole, achieved their main objectives and there is no need to be pesssimistic about the future.

Institutions for the Handicapped

According to information available at present, 176 institutions for the handicapped are run in the States and Union territories. Of these, 94 are for the blind ; 54 for the deaf and dumb ; 18 for the orthopaedically handicapped and 10 for the mentally deficient.

Ennore Biological Supply Station

By V. D. SPURGEON, *Deputy Director of Fisheriss (Inland), Madras.*

Some eleven miles north of Madras, close to the sea and on the south-eastern bank of the Korteliar estuary, on an elevated mound, stands the "Ennore Biological Supply Station" of the Madras Fisheries Department. Old and weather-beaten though the building may appear, the history of this station is interesting and remarkable.

Pearl fishing has been a very ancient occupation in South India. First practised by Indians from 550 to 540 B.C., and then by the Portuguese from 1524 to 1658, and later by the Dutch from 1658 to 1796, the British finally took over from 1796 to 1947. Till the end of the 19th century the methods of pearl fishing continued to be crude and old-fashioned. Early in the 20th century, sometime during 1904, research into the life history of the pearl oyster was taken up seriously with a view to improving the methods of pearl fishing. This necessitated the dredging up of pearl oysters. Many of the common marine organisms found along the coast were also dredged up with the samples and these needed to be preserved. The Fisheries Biological Station thus sprang up to fulfil the need.

Visual Education

In the study of biology, the opportunity to be able to see the various animals is of great significance since more is learnt from visual education than from theory. Illustrations in books and periodicals cannot give the correct sizes, proportions and colours. For instance, a lion, a rabbit and a microscopic organism may all be drawn to the same size, so that the mental picture becomes faulty.

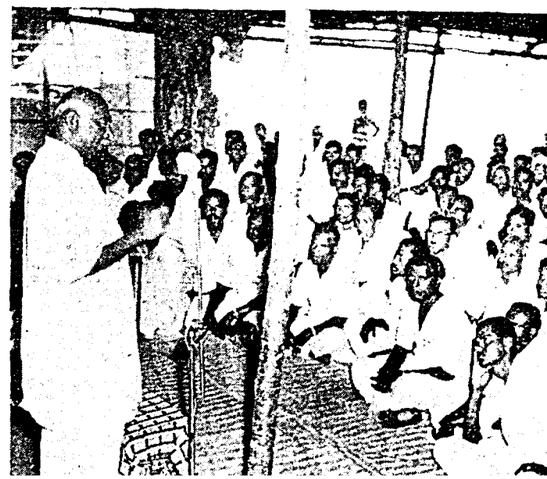
Even though a trip to the seashore might provide the student party with some specimens cast adrift, the opportunity for study of particular specimens might not be found suitable because knowledge must be imparted in a systematic way and not at random. It is here that the museums of schools and colleges play an important part. Animals collected at different places, during different parts of the year are systematically arranged from the simplest to the highly developed forms, carefully preserved to be used by the class when required. The correct names, scientific as well as popular, of the forms and the locality from which they were taken add to the information that students should know.

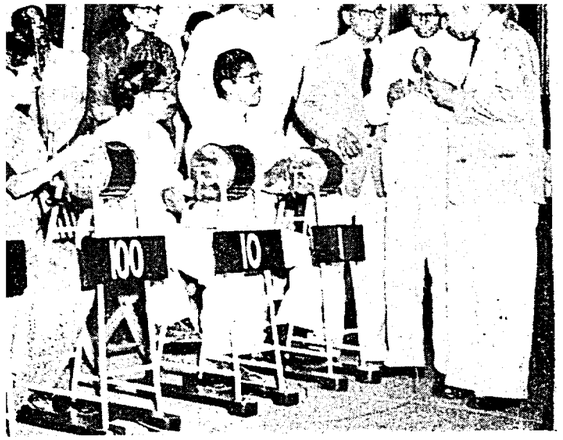
Collection and Preservation

Collection and preservation of diverse specimens are however not easy. Each animal according to its delicate make up demands a technique of its own. It is here that the need for the services of the Biological Supply Station arises since very great technical skill has to be exercised in the process. Every animal must be killed before it is preserved. Highly contractile soft-bodied creatures have to be narcotised by using substances like menthol and magnesium sulphate to prevent them from contracting while being killed. Preservatives also should be changed according to the structure of individuals. Animals might be preserved complete with all their parts intact and without shrinking. The colourful flower-like sea anemones, the worms and the molluses are good examples of this. Among vertebrates, fish can be preserved intact. Sometimes only skeletons are preserved, as for examples the shells of crabs, lobsters, marine snails and their kind.

The art of preservation of the skins of animals after the internal skeletons have been removed is known as taxidermy. A large black scorpion can have its internals removed through a small aperture and refilled with tow

A group of Panchayat Presidents from West Ramanathapuram who visited the City in February met the Chief Minister at the Congress grounds, Teynampet.





Industries Minister Venkataraman inaugurated the 3rd Prize Bond Draw at Raj ji H ll recently. Picture shows the Minister witnessing the first number.

so that the animal appears a live one. In the case of crabs and lobsters the various joints are disarticulated and the internal muscles removed. The joints are then stuck together so that the animal appears to be intact but is weightless when lifted by hand. Varnishing of the creature gives it a gloss while painting in natural colours before varnishing gives it an absolute natural colouration.

Display of specimens collected calls for ingenuity. Suitable glass containers, white coloured plates to serve as backgrounds for specimens to be displayed besides boxes and other containers have to be thoughtfully and skillfully designed and used.

Supply Throughout India

The annual turnover shows that supplies are sent to very many colleges throughout India such as Agra, Aligarh, Allahabad, Banares, Bombay, Calcutta, Dharwar, Gujranwala, Lucknow, Nagpur, Anantapur, Bangalore, Madras, Trivandrum and Visakkapatnam. Besides this, various high schools are also being supplied. While there are hundreds of high schools for boys and girls in Madras State alone, only about one in ten appear to purchase specimens. However, with the enormous strides expected in the study of Natural Sciences during the Second and Third Five-Year Plans, museums of schools must also improve.

Representative collections fit for use of High Schools are supplied in 40 jars for Rs. 200 per set. Molluscan and Crustacean forms mounted in specially constructed wooden cases are supplied at Rs. 45 per case. A printed list of specimens is available and may be obtained on request by institutions from the Superintendent, Government Fisheries Station, Ennore near Madras.

Besides being a supply station it is also a museum to be visited by students and staff. Ennore is accessible both by train and bus and there is a rest house for visitors. A full day spent at Ennore is worth the trouble, as besides study, joy rides by boat, fishing and swimming may be had in the placid backwaters.

The Fisheries Department looks forward to intensifying their activities as a Biological Station and would welcome co-operation from Professors of colleges and teachers of schools.

Kalinga Prize Awarded to Ritchie Calder

Ritchie Calder, well-known British science writer, is the latest winner of the annual international Kalinga Prize for the popularization of science. He is the ninth person to win the £1,000 prize, which is donated by Indian industrialist B. Patnaik and offered by the Kalinga Foundation.

The purpose of the award is to offer recognition to leading interpreters of science and to streng then the links between India and scientists of all nations

The latest award is in recognition of a lifetime spent roaming the world and exploring its scientific frontiers to make them less remote for the general public. Widely known as radio and television broadcaster as well as author, Calder was the candidate of the German Science Writers' Association and of the U.S., British, and South African Associations for the Advancement of Science.

Reducing Fire Hazards in City Slums

By JOHN KOSHI, *Chief Fire Officer, Madras.*

Only those who have seen it can appreciate the rapidity with which fire can spread on a thatched structure. Cricket fans of Madras will remember the fire which on the fourth day of the India-Pakistan Test match destroyed a part of the thatched stands put up at the Corporation Stadium. This thatched structure was intended to give protection only from the sun and the quantity of thatch used in its construction was much less than what is normally used in thatched houses which are expected to provide protection from rain as well. Even so, the fire spread very rapidly. One can well imagine how much quicker a fire can spread from one thatched house to another where the quantity of combustible material used is more per square foot and the intensity of the fire greater. In the rural areas of our State there are several villages entirely made up of thatched houses built close together. Devastating fires have occurred in such villages in the past destroying every house in a matter of minutes. Even in towns and cities there are several hutted areas where fires can and do cause considerable damage.

In Madras City during last year a few bad fires in hutted areas resulted in loss of life and heavy damage in spite of the fact that fire engines from nearest stations rushed to the places and tackled the fires promptly. In all the cases the damage was done in the first few minutes after the outbreak. A survey made by the Fire Service Department shows that there are 93 hutted areas with over 50,000 thatched houses in the City. The thatched houses in these areas are built so close that each area can be considered as a single thatched structure which favours rapid spread of fire in the event of outbreak. Even during the early hours of the morning when there is very little breeze, if a fire breaks out in one hut, the sudden rise of temperature in the vicinity sets up a fairly strong breeze and this causes sparks to fly in all directions. In a few seconds the fire spreads to adjoining thatched houses also.

Need for Gaps

It usually does not take more than ten minutes for a fire to spread to about fifty thatched houses and destroy everything in them. In certain areas of the City, as a part of the Slum Improvement Scheme, thatched houses have been rebuilt providing better roadways, drainage, sanitation, etc., but the houses are provided with the same thatched roof. Meenambal Sivarajapuram, for instance, is a clean and well laid out area with good roads, sanitation, drainage, etc., and is a pretty sight compared to what it was before the improvement scheme. A six-foot gap has been provided between houses here but it cannot help in preventing the spread of fire from one house to another, for a live spark can travel greater distances and easily ignite material on which it settles.

An open space of 20 feet between thatched houses could be considered reasonably safe, but it would be impossible to find sufficient land in the City to rebuild the 50,000 thatched houses providing for this safety distance. It is also not possible to convert these thatched houses into pucca tile or terraced buildings overnight. This is a project which will take years. The Government, the City Improvement Trust and the Corporation have several schemes for providing pucca tenements in place of these thatched houses. But until then our hutted areas will have to be there and the danger of rapid fire will also continue.

It is essential that some way of stopping the rapid spread of fire in hutted areas is evolved. The continuity of huts broken by a line of tiled or pucca buildings helps to a

Earl Attlee who visited India on a lecture tour was in the City on a 3-day stay from February 3 to 5 addressing several meetings. It was during the Labour Cabinet of Britain which he led that India became independent. Picture shows the Earl being received on arrival at the airport by the Chief Secretary, Sri R.A. Gopalaswami.





Earl Attlee addressed the Madras College Students' Council during his stay in the City. Picture shows the Earl being received by the Council's President.

great extent. If, for instance, in each row of huts, every second or third hut is roofed with tiles or asbestos sheets, it will serve as a check on the spread of fire. This arrangement would be much more satisfactory than the present layout where a fire in one house will endanger the entire colony. This is a matter which can be examined by those concerned with slum improvement and town-planning in the City.

To ensure some measure of protection in slum areas the co-operation of the residents of the locality is essential. With the improvement in the general standard of affluence it should be possible for at least a few residents in hutted areas in the City to replace thatch by tiles or asbestos roofs. If about 25 per cent of the houses in each hutted area are thus provided with pucca roof, it will considerably reduce fire hazard. This measure will not solve the problem fully because some thatched houses will remain and will always be exposed to the threat of fire. It is very essential therefore that simple measures are taken to prevent the outbreak of fire in thatched areas and also to obtain the help of the Fire Services quickly to put out fire should one occur.

Prevention of fires in homes is not a matter which can be enforced by authority. This is something which the people must learn and practise. The father, mother and children living in a house should each play his or her part in this task. To appreciate the need for taking preventive measures, one must realize the damage that a fire can cause. In Madras City alone during last year fires involving thatched houses occurred in 79 different places and destroyed property worth about a lakh of rupees ; other types of fires in the City resulted in loss of property worth Rs. 5 lakhs. Taking the whole State of Madras last year the loss due to fire was over Rs. 48 lakhs. These figures may not mean much to a poor man living in his hut. But he will certainly appreciate that if his hut should catch fire, he is likely to loose everything he has and it may also endanger the life of his wife and children. This is sufficient reason why simple fire prevention measures should be practised by every member of the family.

Main Safeguards

The following are safeguards which a householder can take against the outbreak of a fire in his house : The most common place in a thatched house from where fire catches on to the roof is the oven. More than half the number of fires in thatched houses have been caused in this manner. Sometimes it is a tongue of flame from the oven catching on to oil in a frying pan and this reaching the roof or a spark from the oven flying up to the roof and setting it on fire. It is therefore necessary to make ovens safer by ensuring that sparks or a sudden tongue of flame do not cause any harm. This can be achieved by using a metal sheet for protecting the portion of the roof immediately above the oven. A piece of asbestos or G. I. sheet will serve the purpose very well. A sheet about four foot square could be fixed to the under-surface of the roof by means of wires, so as to cover the area immediately above the oven. This protection does not cost much to instal and will help in reducing the possibility of a fire outbreak in thatched houses.

The Careless Housewife

Fires in thatched houses are also caused by sparks flying from open pans when embers are taken from one house to another. It is not uncommon to find a woman carrying hot embers in an open pan from her neighbour's house to her own house to start the fire for cooking. While she walks up to her house with the pan in her hand, the breeze may drive a spark from the pan towards the roof of her own house or a neighbour's house and then the tragedy happens. The hot dry combustible roof catches fire immediately and the damage is done. Match boxes are cheap and safe to use. So why go to your neighbour to fetch embers ?

Children always have a tendency to play with fire and naked oil lamps in the house are a great temptation to them to burn pieces of paper or anything they can get hold of. While taking the lamp about in the house it may accidentally come in contact with a part of the roof, clothes or some other combustible material which the flame from the lamp will readily ignite. Considering the risk involved it would be safer to stop using such lamps in thatched houses and use instead hurricane lamps with chimneys. They may cost one or two rupees more but the money spent will be worthwhile. When a child is old enough to understand, he must be taught the dangers of fire and must be told of the risk to himself and to his home that

can be caused by his playing with crackers, match boxes or pieces of burning firewood from the oven. Smaller children not old enough to understand the serious consequences of fires or to appreciate the need for taking preventive measures should not be left alone in the house within the reach of the oven, match boxes, crackers or anything else that can start a fire. They should always be kept under the watchful eyes of the parents or of older children.

Another cause of fire in thatched houses is arson. The fire-raiser not only endangers the life and property of the person against whom his attack is intended but also of several innocent people and their homes. Not long ago there was an incident where a man slyly set fire to a house because he had a score to settle with the occupant of the house. The fire which he started spread rapidly to several other houses in the locality and two helpless children were burnt to death. When the fire was put out the man who had started the fire and had remained in the background till then came forward and gave himself up realizing that his misdeed had caused the death of two innocent children.

The thoughtless Smoker

There is another person who is perhaps worse than the deliberate fire-raiser mentioned above. He is the careless smoker who throws about the stumps of his beedi or cigarette wherever he likes without bothering where they land. If a burning stump falls on some combustible material near a house it can very soon start a fire as destructive as that started by the fire-raiser. Smokers must always remember that one careless act on their part may result in misery to many. They must make it a point to completely extinguish the fire on the beedi or cigarette before throwing it.

In spite of all the care ordinarily taken, a fire may still break out and when it does, the damage will be most extensive in the hutted area. It is essential that residents of hutted areas know exactly what to do when they are faced with a fire. First of all they must be able to summon the fire brigade immediately. Automatic fire alarm systems are not installed in Madras City. But the telephone system is quite effective. It should be possible for a person of the locality to run up to the nearest telephone and contact the fire brigade within a minute or two. Out of the 93 hutted areas in the City, telephone facilities are ot available in 51 areas. It would be very useful if e telephone booths are installed in these areas so that may be lost in summoning the Fire Service of a fire. In addition to intimating the Fire le-bodied men of the locality should do the fire under control. There are ; this and perhaps the most effective ofs of thatched houses in the direction tending to spread. For instance, if the south and the fire is spreading north, it would be helpful if the houses to the north of the one on fire are pulled down. Effort should also be made to put out the fire with available water in the locality after its spread has been checked. It would be useful if in each house two or three buckets or pots of water are always kept handy for the purpose.

An Epitaph

Here lies a man whose habit was
To read and smoke in bed.
Before he could get out of it
He was very much dead.
With cigar stuck between his teeth
A book poised on his chest,
One afternoon he lay in bed
His weary frame to rest.
The book was one he hadn't read—
A volume worth its price.
But soon o'er come by sweet slumber
He closed his weary eyes.
The cigar came a'rolling down
It rested by his side.
The sheet caught fire, his shirt caught on
And soon he was well fried.
His tale he did not live to tell-
No tales can dead men tell.
Sad indeed ! but the fault was his,
He smoked his way to hell.
The title of the book was apt
It was ' AFTER DEATH WHAT ? '.
By now, of course, he must have found
The right answer to that.

—*J. Koshi.*

A reception and dinner in honour of Earl Attlee were given to the distinguished visitor by Governor Bishnuram Medhi at Raj Bhavan Guindy.



A WORD TO THE BREAD-WINNER

The bread-winner was a power in the family. His was the task to not merely keep the wolf from the door but also enhance the family prestige by every means. By wise deployment of his earnings he managed to be a power unto the last.

The bread-winner these days is not only a power in the family but also a power in the nation. The way he spends his earnings and the extent to which he saves have a vital bearing on the prestige of the nation. He is a national figure. By wise deployment of his earnings he saves for the family and helps build up the nation.

The bread-winner can do no better than buy GOVERNMENT PRIZE BONDS. His money is safe and he gains 19 chances of winning a Prize on the PRIZE BONDS he has bought.

BUY PRIZE BONDS IN Rs. 5

and Rs. 100 denominations.

Available at all Post Offices

Problems of Children under Six

The Central Social Welfare Board has set up a 12-member Expert Committee with Shrimathi B. Tara Bai, Directress, Lady Irwin College, New Delhi, as Chairman, to study the total needs of children under six years of age.

The Committee will study the minimum requirements of these children in terms of care, play and recreation, education and standardisation of children's equipment including the manufacture of cheap essential materials needed for pre-primary schools.

The terms of reference of the Committee are :—

I. To study in the light of the changing socio-economic conditions in the country :

(*a*) the care and upbringing of children in the family ; particularly the aspects of health and nutrition ; and

(*b*) play and recreational facilities in the home and in the neighbourhood.

II. To assess the number and nature of existing pre-primary schools :

(*a*) their management (Governmental, proprietary, corporate, non-official bodies, etc.) ;

(*b*) their distribution (rural, urban, type of locality, etc.) ;

(*c*) pattern (Indian, Western, etc.).

III. To suggest methods of co-ordination among the large number of agencies working in the field of child care.

IV. To study and evaluate the standards of pre-primary education with reference to :

(*a*) the pattern of staffing (trained and untrained ; teacher-pupil ratio, etc.) ;

(*b*) the curricula and methods of teaching adopted ;

(*c*) the type of equipment available and the manner and extent of its use; and

(*d*) programme of recreation, rest, nutrition, health, care and instruction.

V. To study the nature and extent of training of teachers of pre-primary schools and of other child welfare workers in terms of their number, distribution and standards of training courses.

VI. To assess the financial position of pre-primary institutions and of child welfare centres for this age group, analysing the sources and proportions of income derived from them, and the pattern of expenditure on a schematic budget, and based on this study, to assess the problems of grants-in-aid,the items requiring assistance, the volume of assistance required, and the period for which it would be necessary.

VII. To work out a tentative plan for the development of pre-primary education for the next five or ten years with estimates of cost.

VIII. To work out a plan for the manufacture of standard recreational, educational equipment of Indian pattern at moderate costs.

IX. To provide a plan for the promotion of training of pre-primary teachers, and of other child welfare workers, on a uniform basis.

X. To recommend a pattern for reorganization and extension of programme of community service for the sound physical, mental, and emotional development of the child in its first six years.

Smt. Balakrishna Shetty recently laid the foundation stone for the Avadi Madhar Sangham building for families of police personnel at Battalion Headquarters, Special Armed Police, Avadi.



Zamindari Abolition in the State

There has been criticism that Estates Abolition work has been done in a leisurely manner and there has been inadequate progress in the survey and settlement operations especially in the districts of Ramanathapuram and Tirunelveli. Doubt has also been expressed whether the reform has done any good. This criticism is either very much exaggerated or based on a misapprehension of facts.

Progress of survey

So far, 1,004 zamin estates, 934 under tenure estates and 2,889 inam estates out of 1,005, 936 and 2,914 respectively have been notified under section 1 (4) of Act XXVI of 1948. The zamin and undertenure estates were notified first in the year 1949–50 and the inam estates were mostly notified in 1951. Out of the total area of 11,174·49 square miles taken over, an extent of 10,730·22 square miles has been completely surveyed leaving a balance of 444·27 square miles constituting mostly hill areas.

The total area so far settled up to fasli 1369 is 7,489·39 square miles. There is a balance of an area of 3,821·23 square miles. This area is mainly concentrated in Tirunelveli, Madurai and Tiruchirappalli districts. It has been programmed to introduce settlement in 1,577·11 square miles in fasli 1370, 1,664·76 square miles in fasli 1371 and 579·36 square miles in fasli 1372. Thus, the entire field settlement operations in the State will be completed in fasli 1372, i.e., in the year 1962-63. Final compensation work will also be completed within a year from that date.

When settlement of the estates taken over was taken up in 1949, there was hardly any officer available with experience in Revenue Settlement, with the result Settlement work had to be commenced from scratch. Officers and ground staff had to be trained. The implications of a new statute had to be fully worked out. In the initial period from 1949 to 1954, there were many writ petitions filed in the High Court questioning the validity of the Act itself and the applicability of that Act to individual estates notified under section 1 (4). In many of these cases stay had been ordered by the High Court and such estates, though notified under section 1 (4), could be taken over only after the stay was vacated by the High Court. With all these odds against the authorities, the pioneering work could make only slow (though steady) progress in the initial period.

The procedure adopted in Settlement is also elaborate and has to be done in stages. The estate is first perambulated; the resettlement notification in force in the district from which the rates had to be applied to the estate areas had to be chosen; principles to meet the particular characteristic features in an estate had to be evolved; the notification under section 22 had to be framed; field classification work had to be completed at all levels from the settlement inspector upwards to the overcheck by the Settlement Officer. Accounts had to be corrected, rough pattas had to be prepared and issued. After completing the registry enquiries, fair accounts had to be written up incorporating all orders passed, and then handed over to the Revenue Department. Based on the Fair Area List and the Final Settlement Demand and on the basis of the miscellaneous revenue actually realized by the Estate Manager during the three relevant faslis, final compensation had to be worked out for each estate.



A party of pressmen were taken to the Vedanthangal Bird Sanctuary where they spent half-a-day watching different birds that have found a nesting place during the bitter, winter season of Europe. In the picture can be seen a picturesque group of birds that have found a home in the Sanctuary.



Pressmen watching with interest the birds that congregate at the sanctuary.

Further, all the estates taken over cannot be settled at a time. The work has to be done under a plan and it is progressing according to the phased programme.

It will be seen that starting the work from scratch, it has taken full nine years to complete an area of 7,489 square miles. The time taken in the present settlement of estates is less than the time taken for resettlement of each ryotwari tract, though the process of work in such resettlement of ryotwari areas was far simpler and shorter. This will easily prove that the pace of progress in the settlement of estates is by no means slow or leisurely.

As against the total estimated compensation amount of Rs. 6·32 crores, already up to 31st December 1960, a sum of Rs. 4,14,65,168 has been deposited. There is a balance of only Rs. 2·17 crores of compensation to be deposited relating to the remaining 862 estates to be settled in the next three faslis. As against the total estimated interim payment of Rs. 1·84 crores, up to 31st December 1960, Rs. 1,28,32,940 have been paid out. As there is the statutory obligation that the advance compensation should be deposited within six months from the date of tak over of the estate and the final compensation within n months from the date of handing over of the accour there is no likelihood of the landholders' interest be allowed to suffer, nor have they in fact suffered.

Beneficial results

Regarding the benefits accruing to the tenants in t erstwhile estate areas, it may be stated that as a res of survey and settlement for the first time, there a absolutely dependable set of revenue and land recor which minimise possibilities of dispute relating to locatic identification, registry and irrigational rights. The revenue records constitute a source of reference f settling future disputes and reduce unnecessary litigatic As against inequitable, exorbitant and arbitrary rat of assessment depending on the discretion of an individu landholder, fixed and systematised rates appropriate and based on the productivity of soil in each field ha been applied. Land value has appreciated as a result these beneficial measures. Agricultural and co-oper tive credit facilities have increased as loans are bett secured.

By far the most conspicuous benefit accruing to the ryo in the former estate areas which even a casual visitor these villages cannot fail to note are the improvemen to irrigation works and the satisfactory condition in whic they are generally now maintained. A total amount Rs. 32,51,367 has been spent through the Revenue Depar mental Agency alone, on the repairs to the Minor Irrig tion Works. As against the total number of 7,432 mino irrigation tanks requiring repairs in the estates take

over, as many as 5,638 have so far been repaired. 1,050 additional works have been programmed to be completed during the current year 1960-61.

In addition, repairs on an extensive scale and of a major nature are also being carried out to the irrigation works in the former estate areas under the Special Minor Irrigation Programme through the Special Food Production divisions. More than Rs. 2·5 crores have been spent on repairs to irrigation works in the estate areas taken over. 3,967 works have been taken up for repairs of which 2,616 have been completed.

The other amenities such as provision of transport facilities, medical and public health are also being extended to these estate areas through the Plan and Non-plan schemes available in the State. Local development works and the starting of small-scale industries are also available to the people in the former estate areas to the extent to which they come forward to satisfy the conditions laid down under the rules for each scheme and to the extent to which they make contributions required of them. The estate villages have also been benefited by the new irrigation projects like Krishnagiri Reservoir Project, Manimuthar and Vaigai Reservoir Dams and the Periyar Extension Scheme.

There has also been a criticism that the decisions given by the various settlement authorities, Estate Managers and Collectors have often been perverse. Decisions given by the Settlement Officers and the appellate and revisory authorities are all governed by the prescribed provisions and cannot be arbitrary.

Government have already passed orders tranferring the pending proceedings under the Estates (Supplementary) Act and Rent Reduction and Abolition Act to the Tribunal at Tirunelveli. Opening of a Personal Deposit Account for the Estates Abolition Tribunal, Tirunelveli, has also been sanctioned.

Permanent Health Exhibition

First of its kind in the world, a permanent exhibition displaying the measures being taken to prevent disease and to promote high standards of community and individual health has been opened in London.

The exhibition is housed in a new hall at the Royal Society of Health and is open to the public free of charge.

The large number of exhibits are intended to benefit the health worker, the student and the layman. It is the society's intention that the centre should keep abreast of new developments. The permanent exhibits will be supplemented from time to time by temporary displays spotlighting subjects of topical appeal.

The exhibition includes many working models, with features and lighting controllable by press-buttons. Subjects covered include water, clean air, lighting, heating, ventilation, food, draining and sewerage, sewage disposal, site planning and building construction, occupational health, communicable diseases, pest control, health and welfare services, radiation and vital statistics.

Madras Beckons . . . .

* * * *The temples of Madras, nestling against swaying palms, their tall towers standing as sentinels of an ancient civilisation which is very much alive and their huge halls and corridors proclaiming the deftness and dexterity of the sculptor, constitute the centre and source of a cultural and religious tradition which, though it has fitted itself into the changing pattern of modern life and living, yet remains picturesquely distinct.*

* * * *The hill stations of Ooty and Kodaikanal, with their invigorating climate and scenic splendours are ideal for rest and recreation. Their wooded slopes and majestic peaks, their grand waterfalls and picturesque lakes hold the visitors in thrall.*

* * * *Lovers of wild life may get endless thrills through a visit to Mudumalai situated in the Nilgiris. Here they can see elephants and bears, tigers and bisons, etc., in their natural home. Facilities for seeing wild animals are provided to visitors. Vedanthangal near Madras is a bird sanctuary where a visitor can see a variety of birds.*

* * * *Besides these, Madras provides the tourist a variegated fare. All the year round there are fairs and festivals which bring to life stories and traditions, arts and rituals of a long past age which have an allure all their own. They delight, educate and also entertain.*

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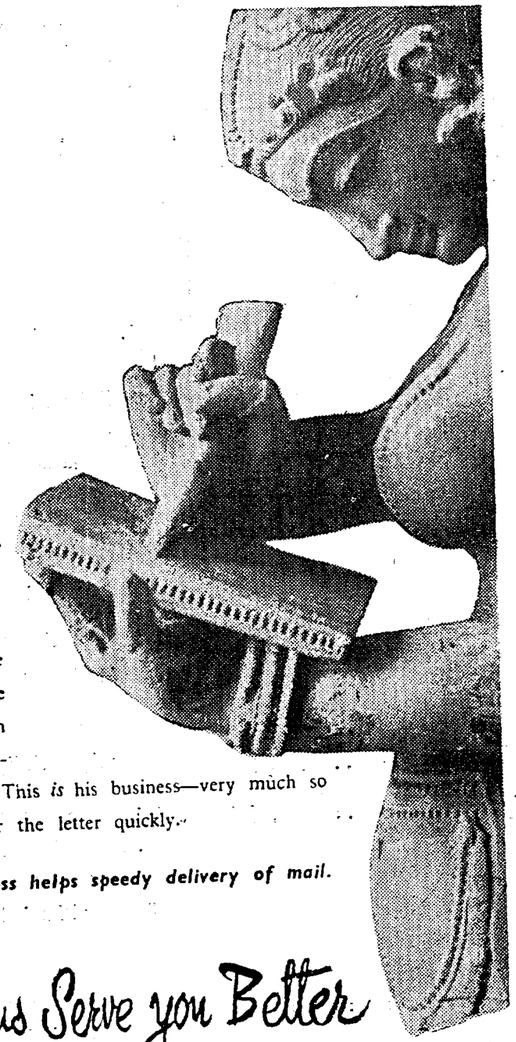
APRIL—MAY 1961

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This month's cover

The Tamil New Year has ushered in Spring, the season of Beauty. The trees are in full bloom, thick with foliage and rich with flowers of myriad hues. The air is heavy with their fragrance. The cuckoo and other singing birds have arrived. Their music sweetens the air. The farmer re ts after having made arrangements for the next sowing season. His lands lie fallow regenerating to yield more. The fruits are also appearing. Everywhere in the countryside, the characteresic sights, sounds and smells breathe the spring time spirit into the Soul of Man.



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DA 60/3

Improving Outlook for Rubber in the State

SRI M. BHAKTHAVATSALAM, *Home Minister.*

Madras State is not particularly well endowed by nature in respect of sites and climatic conditions favourable for the large-scale cultivation of rubber. Some extent of private plantations exists mostly in the Kanyakumari area. Recent studies by the Rubber Board or under its guidance have shown that in this small district, conditions most favourable to rubber planting prevail. The Madras Government has not been slow to utilize this fact. The best areas in the Reserved Forests of the district have now been earmarked for planting with rubber and a scheme is under implementation for raising rubber over 3,000 acres in the course of 7 years. Nursery work commenced in 1959 and regular planting in 1960. The latest developments and techniques are being availed of, so that these Madras Government plantations may in time prove almost a model for modern rubber planting in the country.

In the present context of rapidly increasing demand for rubber, rubber is assuming very great importance both from the strategic and commercial points of view. For purposes of communication, defence and a variety of industries, rubber is becoming more and more indispensable. Some western countries use rubber even for road surfaces as they find it more satisfactory than cement concrete or bitumen surfaces. New uses are also being developed almost daily.

Expanding Needs

It is well known that our present production of rubber is inadequate for our expanding needs. India was exporting raw rubber even up to 1938; but recent years have experienced a shortage and India has been importing raw rubber from Malaya, Sumatra, etc., in order to help rubber goods industries to maintain their production levels. During 1957, quite a good quantity of rubber had to be imported. Compared to the production of rubber in the world, ours is a meagre 1 per cent of the total. It is therefore necessary that all possible efforts should be made and persisted with, in order to see that the production of rubber is stepped up to a considerable extent. For starting and sustaining the requisite number of factories for manufacturing rubber products, it is essential to concentrate on raising plantations for production of raw rubber. It is obvious that the local industries cannot function indefinitely on the basis of imported raw rubber and the only way to achieve self-sufficiency in this essential product is to extend the rubber plantations as much as possible and that rapidly. Incidentally, this will also help save quite a good deal of foreign exchange.

In stepping up rubber production, all round efforts will have to be made so that the output is effectively augmented in all possible ways. We have to benefit by the experience of important rubber producing countries like Malaya, Indonesia, Burma, Indo-China and Ceylon. This is necessary not only in the fields of improved techniques of planting, tapping and processing, but also in introducing high-yielding varieties. The Rubber Board has been doing good work to step up production of rubber in the land. The Board has been disseminating knowledge through a series of technical leaflets, encouraging expansion of rubber planting, offering incentives to old planters to replace their poor yield stock with high-yielding varieties and assisting in many other ways in order that the country may take its due place among the rubber

In very large establishments annual get-togethers and sports meets provide opportunities for employees to meet and get to know each other. The State Transport Department provided this opportunity during its recent Annual Sports Meet at the Presidency College grounds. Picture shows an interesting group sporting a variety of costumes in the Fancy Dress competitions.



Producers of the world. The Board has launched on a scheme of granting subsidy to planters who take up re-planting in areas where the present yield is not satisfactory. Planters must take full advantage of the scheme to register competitively large yields from their plantations.

The area in India suitable for raising rubber satisfactorily is very limited. For the present, Kerala, Mysore, Madras and Andamans are the only States where rubber is grown. The total area under rubber is estimated to be a little over 3 lakhs of acres. It should be our endeavour that all likely areas in these States should be preferentially set apart for raising rubber plantations.

Employment Potential

The rubber plantations of the Madras Government are expected to be extended over 3,000 acres by 1967. These plantations will prove of significance for employment potential and for raw material production in addition to yielding sizeable revenues to Government. Large-scale plantations are coming into being in neighbouring States also. The endeavours of other States and the Board should ensure success in increasing the rubber resources of the land. But it is essential to maximise the yield per acre. The efforts of the Rubber Board in this direction are commendable. The research work organized by the Board on the production of improved strains and experiments on manuring and disease control will go a long way to enable the planters to get the maximum advantage from the plantations.

The Board's plan to run a pilot project for rubber plantation is an idea to be welcomed. The project should interest itself not only in the economics of rubber cultivation, but in all its technical aspects. The Board is now arranging for training in rubber planting techniques to be afforded by private planters. Credit is due in full measure to these planters for their co-operation in this important aspect of rubber development. The pilot project could well be developed as practical training centres.

Inducing small-scale growers to take more to rubber planting is one of the direct methods of increasing production and is bound to meet with quick response if the grower is assured of a ready buyer for his latex and of a fair price for it.

This important task can best be successfully undertaken by the Rubber Board and it is expected that it will devote increasing attention to this aspect.

Fire Station at Virudhunagar

A Fire Station at Virudhunagar town in Ramanathapuram district was recently opened by the Chief Minister Kamaraj. The Chief Fire Officer, Southern Region, Madurai, welcoming the Chief Minister explained the utility of the Madras Fire Service and the need for public co-operation in preventing fires. The Chief Minister in his speech gave an account of the responsibilities of the Madras Fire Services, not only in fighting fires but also in preventing them. He described the risks encountered by the Fire Service while fighting fires and appealed to the public to extend their whole-hearted co-operation to the Fire Service at Virudhunagar in all aspects of fire fighting and fire prevention. The Chief Minister then declared open the fire station by unveiling a marble tablet commemorating the opening ceremory. Later he witnessed a tactical excercise by the Fire Service Units.

Labour in the State—A Review

The salient features of labour policy during the two Plan periods have been the effective administration of labour laws, improvement in the real wages of workers, and implementation of social security schemes. Great emphasis has been laid on the strengthening of the trade union movement, mutual negotiation, and voluntary arbitration for settlement of disputes, increased association of labour with management, encouragement of the system of payment by results, constitution of appropriate Wage Boards for settling wage disputes and widening the functions of Employment Exchanges to help avail of employment opportunities in an increased measure. The need for Joint Consultative Bodies at various levels for this purpose has been recognised and they have been constituted.

The State Labour Advisory Board is the most important consultative body at the State level, to which all important problems affecting labour are referred for advise. The Board met twice during the year 1960 and considered several important subjects among which the following deserve mention :—(1) To provide a rest-house at Mahabalipuram at Government cost for enabling workers to spend their holidays. (2) To extend the Employees' State Insurance Scheme to the families of the insured workmen after all the insurable workers in the State are covered. (3) Relaxation of existing provisions relating to opening and closing hours of shops and establishments under the Madras Shops and Establishments Act. (4) To constitute a committee for evolving a Code for the conduct of parties during the periods of strikes and to find ways and means of prohibiting employers from running the factory when the workers are on strike. (5) To grant exemption from section 79 (6) of the Factories Act to all the mills and factories to enable the workers to avail the earned leave under the Factories Act according to their convenience.

Employment Opportunities

There are at present fourteen District Employment offices in this State, two in Madras City and one each in the remaining districts. Besides, from November 1960, two registration units also visit periodically the Taluk Headquarters of Sivakasi, Mudukalathur and Tiruvadanai in Ramanathapuram district and the Taluk Headquarters of Harur, Hosur and Krishnagiri in Salem district and register candidates living in remote areas in these districts. The following figures show the number of applicants registered and placed in employment during the years 1958–60 :—

	1958.	1959.	1960.
Number of applicants registered by the Employment Officer.	196,661	204,891	187,276
Number of applicants placed in employment.	26,730	29,931	34,778

On an avearge 936 employers per month have used the Employment offices in the State. It is estimated that the percentage of employment has now increased by 38·4 per cent from 1956 in the public sector alone.

The Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959, was enforced in this State from June 1960. Consequently, there has been an increase in the number of vacancies notified from the Private Sector to the District Employment offices in the State. A large number of superior field workers for the National Malaria Eradication programme and teachers (both Secondary and Higher Grades) in the District Boards and Panchayat Unions was recruited through the National Employment Service during the year.

Manpower Schemes

The State Employment Advisory Committee at Madras which was constituted in 1959 under the chairmanship of the Minister for Industries and Labour met twice during the year and considered important subjects relating to employment ervice. The following Manpower and Employment schemes progressed during the year in this State :—(i) *Expansion of Employment Service.*—Two Employment Information and Assistance Bureau, one at Sankarankoil Block of Tirunelveli district and another at Paramakudi Block of Ramanathapuram district were opened for disseminating information on careers and employment avenues among the residents in rural areas. (ii) *Collection of Employment Market Information.*—The scheme for the collection of Employment Market Information was extended to the Private Sector in five more districts, viz., Salem, Thanjavur, North Arcot, Tiruchirappalli and Madurai from 30th June 1960. Enquiries for each quarter from 1st September 1959 up to 30th September 1960 have been completed. The Coimbatore Employment Market report and the report on Employment in the Public Sector for the State as a whole have been printed and issued for each



Lighting the ', Olympic' torch prior to the start of the Sports.

of the Committee's Report. The implementation by the remaining establishments is being watched by the Inspector of Newspaper Establishments.

The Payment of Wages Act, 1936 has been made applicable to establishments covered by the Beedi Industrial Premises (Regulation of Conditions of Work) Act, and the Madras Catering Establishments Act and to motor or other transport undertakings. Three hundred and six claims arising out of non-payment of wages and illegal deductions from wages were disposed of by the Labour Department during the year 1960. Compliance with the provisions of the Act and Rules were generally found to be satisfactory. Prosecutions were launched in four cases during 1960 as against eighteen cases in 1959. A fine of Rs. 70 was also imposed during the year under review.

Factories Act

The number of factories covered by the Factories Act and workers employed in factories as at the beginning and end of the Second Five-Year Plan period and the year under review are as follows.—

	At the beginning of the 2nd Five-year Plan.	*At the end of the 2nd Five-year Plan.*	*Increase during Plan period.*	*At the beginning of the year under review.*	*At the end of the year.*	*Increase in 1960-61.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Number of factories.	4,200	5,884	1,684	5,8 3	5,884	41
Number of workers.	304,616	322,449	17,833	317,679	322,449	4,770

The increase and expansion in factories and the increase in the number of workers during 1960-61 is noteworthy. The Labour Department has been reorganized into technical and non-technical wings. Each Inspector of Factories including Assistant Inspectors) will have 16 8 factories in his jurisdiction which nearly conforms to the I.L.O. standard of 150 factories per Inspector. The Inspectors of Factories have made 4,371 regular inspections during the year, and 1,106 Sunday inspections, special inspections, surprise inspections and night inspections, to ensure stric observance of the Factories Act. They also inspected 87 unregistered factories during the year in question. During the year 250 prosecutions were launched.

The number of accidents in factories in the last four years is shown below:—

	Fatal.	*Non-fatal.*	*Total.*
	(1)	(2)	(3)
1957 ..	29	13,692	13,721
1958 ..	20	16,557	16,577
1959 ..	32	18,087	18,119
1960 ..	17	16,568	16,585

Safety measures have been tightened up, and the number of accidents has decreased. Steady progress has been made by the manufacturers of machinery in providing guards that are essential for safety. The latest and a very satisfactory trend in textile factories is the semi-airconditioning of the entire plant. Safety posters issued by the Chief Adviser of Factories, New Delhi, are being supplied free of cost to the factories for display, and thereby safety consciousness is created among the management and labour.

Shops and Establishments

The number of shops and establishments covered by the Madras Shops and Establishments Act and the number of employees as at the beginning and end of the Second Five-Year Plan is as follows :—

	At the beginning of the 2nd Five-Year Plan period.	*At the end of the 2nd Five-Year Plan period.*
	(1)	(2)
Number of shops and establishments.	1,60,771	1,60,048
Number of employees.	1,86,522	1,83,135

Details of the prosecutions launched under the Act are as follows :—

Prosecutions sanctioned during the year ..	272
Prosecutions pending at the beginning of the year.	33
Prosecutions disposed of during the year ..	218
Prosecutions which ended in conviction	21
Prosecutions pending in courts	8

Madras Catering Establishments Act, 1958.—Nin thousand establishments have been covered by this Ac which is now in the second year of its working. Ti December 1960 employers of 865 catering establishment were prosecuted for contravention of the various provisio of this Act. The fact that Labour Officers disposed of 2 appeals against discharges during the year is an indicatic

quarter from 1st April 1959 to 31st March 1960. The sixth training course in Employment Market Information programme and procedure was conducted by the Directorate-General of Employment and Training, New Delhi, at Madras from the 17th to 26th May 1960 for all the Employment Officers of the State. (iii) *Youth Employment Service/Employment Counselling.*—In addition to the Youth Employment Service and Employment Counselling Unit set up in 1959 at the District Employment Office, Madras, one more Vocational Guidance Unit was opened at the District Employment Office at Madurai and it started functioning from 13th June 1960. Career information centres have also been annexed to these units and equipped with useful information on careers, training courses and apprenticeship facilities available for the benefit of the applicants. The number of persons who availed themselves of the benefit of this scheme during the period under report was :—

	Madras.	*Madurai.*
(1) Group Guidance	8,440	594
(2) Guidance information to individual.	2,584	393
(3) Individual guidance	259	27

(iv) *Occupational Research and Analysis.*—The Occupational Information Officer, prepared detailed definitions in respect of 243 occupations covering five groups, three families and six industries. In addition, verification work was also undertaken by him in respect of 87 occupations with reference to local conditions. The reports on the original studies as well as verfication work were sent to the Government of India.

Under the scheme financed by the Ford Foundation for an assessment of educational and training requirements for various craftsmen occupations, 214 questionnaires were completed after an on-the-spot study of occupations at employing establishments in the State. The Occupational Information Officer also undertook a special study of " Rubber Plantations " for supplying occupational details to the Wage Board.

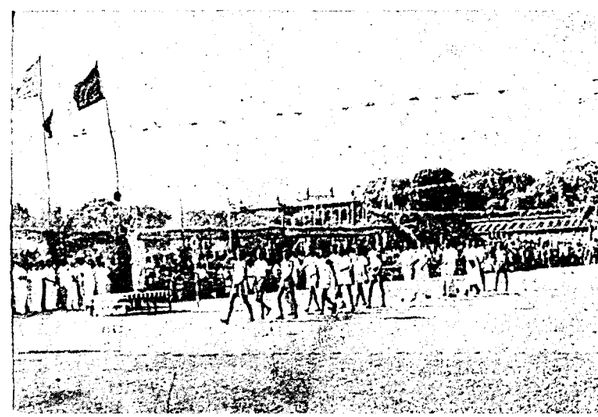
Wages and conditions of work

During the year 1960, minimum rates of wages were fixed for the following six employments added to the schedule of the Minimum Wages Act :—(1) Match and Fire Works Manufactory. (2) Hosiery Manufactory. (3) Coir Manufactory. (4) Cotton Ginning and Pressing Manufactory. (5) Brick and Tiles Manufactory. (6) Salt pans. On the recommendations of the Minimum Wages (State) Advisory Board, the minimum wages fixed for employments in Oil Mills, Rice, Flour and Dhall mills in the State have been revised. All the three Labour Courts constituted under the Industrial Disputes Act have been appointed as authorities to hear and decide claims arising out of the payment of less than the minimum rates of wages. These courts have disposed of 38 cases under this Act during the year.

The Government of India set up Wage Boards for Textiles, Cement and Sugar Industries to fix fair wages for persons employed in these industries. The recommendations of the Central Wage Boards for Textile Industry and the Cement Industry have been announced. So far as this State is concerned, out of 135 textile mills, 126 mills have implemented the recommendations. Out of the three cement factories in this State, two have implemented the recommendations. The implementation of these recommendations by the remaining establishments in Textiles as well as Cement is being watched by the Labour Department. The recommendations of the Central Wage Board for Sugar Industry have just been published. The Government of India have since constituted a Wage Board for Tea Plantations Industry and the constitution of similar Boards in respect of Coffee and Rubber Plantations is under their consideration.

A committee was constituted by the Government of India under the Working Journalists (Fixation of Rates of Wages) Act, to fix the rates of wages for the working journalists employed in Newspaper Establishments. The Committee's report has been published. In this State, 32 Newspaper establishments employing 449 working journalists (excluding editors) are covered by this report. Twenty-two establishments employing 406 working journalists have already implemented the recommendations

The South Arcot district sports for Government Officers and the Rural Sports for outsiders were recently held at Cuddalore Sr A. Krishnaswami, Chief Secretary to Government, Pondicherry, presided and Srimathi Indrani Krishnaswami distributed prizes. In the picture, Sri S.A. Sundararajan, Collector of South Arcot is taking the saluto at the March past of competitors.





Lady participants relaxing in preparation for the 'start' of one of the events during the sports.

that the appeal provision has been beneficial to the employees.

The number of plantations and workers covered by the Plantation Labour Act are given below :

	Number at the beginning of 1958.	*Number at the end of the 2nd Five-Year Plan.*	*Number at the beginning of the year under review.*	*Number at the end of the year under review.*	*Increase during the year.*
	(1)	(2)	(3)	(4)	(5)
Plantations ..	261	267	262	267	5
Workers	78,499	80,000	73,098	80,400	7,302

The increase in number of workers is both due to the increase in the number of plantations and the extension of acreage in existing plantations. The Inspectors of Plantations have made 415 regular inspections and 399 visits. They have also visited 37 unregistered plantations.

The Government have approved 17 medical schemes during the year 1960. On the representations made by small planters regarding the difficulties experienced by them in obtaining a lien on beds in garden hospitals or Government hospitals, on the Advisory Committee's recommendations, Government have permitted the small growers to maintain individual dispensaries or combined dispensaries with necessary staff and that hospitalization of workers wherever necessary should also be arranged by them.

The Madras Industrial Establishments (National and Festival Holidays) Act, 1958.—This Act which is in the second year of its working has helped to secure for the workers a minimum number of seven festival holidays in a year and thereby eliminated the frequent disputes that were arising on this account.

The industrial dispute machinery provided under the Industrial Disputes Act has played an effective part in the settlement of industrial disputes and the maintenance of industrial peace. The policy of the Government has always been to try their best to settle the disputes internally to the extent possible, and to refer cases for adjudication only as a last resort.

Industrial Relations

The Officers of the Labour Department have been instructed to see to the observance of the Code of Discipline by the employers and the employees. The Evaluation and Implementation Committee which has been entrusted with the work connected with administration of the Code, met twice during the year, viz., on 23rd May 1960 and 17th December 1960 and considered important subjects such as the extension of the Code of Discipline with a view to secure further ratification by employers' and workers' organizations not affiliated to any Central Organizations and the procedure for dealing with complaints regarding breaches of the Code, effective implementation of Code of Conduct and Model Grievance Procedure, etc. forty-one employers and 169 Trade Unions not affiliated to any of the Central Organizations have signified their acceptance of the Code in writing.

The Government have been emphasising the importance of Works Committees for promoting good understanding and relations between labour and management. Works Committees were functioning in 290 establishments in this State at the end of the year 1960. On the recommendation of the Government of India, industrial establishments have also been advised to form Unit Production Committees for advising on production problems in so far as they pertain to specific items of production in which labour has a direct interest. Unit Production Committees were functioning in fifty-three establishments at the beginning of 1960.

Disputes settled

The Conciliation Officers in the State have been endeavouring to secure amicable settlement of industrial disputes to the maximum extent possible. The number of grievances raised during the year under review, the number of disputes settled by conciliation, the number referred for adjudication and the number of disputes which Government declined to refer for adjudication are as follows :—

Number of grievances raised during 1960 (up to 31st December 1960)	9,048
Number of disputes settled by conciliation	864
Number referred for adjudication ..	250
Number which the Government declined to refer for adjudication	120

The remaining grievances have been informally settled. The number of strikes and lock-outs during the year was as follows :—

Number of strikes (including lock-outs).	331
Number of lock-outs	13
Number of strikes called off by mutual negotiations.	27
Number of strikes in which the workers voluntarily resumed work	215
Number of strikes called off on the intervention of Conciliation Officers ..	87
Number of strikes called off as a result of adjudication	1
Number of strikes in progress at the end of the year 1960	1

The number of strikes and the number of man-days lost during 1958–59 and 1960 are shown below :—

Year.	*Number of strikes and lock-outs.*	*Number of man-days lost.*
1958	261	7,29,723
1959	214	11,03,231
1960	331	7,65,990

The following figures show the number of cases referred for adjudication to the Industrial Tribunal and Labour Courts and the number of awards given by them during 1959 and 1960 :—

	Number of cases referred for adjudication.		*Number of cases in which awards were given.*	
	1959.	1960.	1959.	1960.
Industrial Tribunal, Madras.	72	50	402*	356*
Labour Courts ..	253	200	*(including awards under section 33-A)	

During the year 1960, the three Labour Courts have disposed of 1,475 applications for computation of monetary benefits filed by workmen under Section 33-C (2) of the Industrial Disputes Act.

The Government sanctioned prosecutions against five industrial establishments for non-implementation of the terms of awards, and settlements under Section 29 of the Act and against one industrial establishment for contravention of Section 28 of the Industrial Disputes Act during 1960. The State Evaluation and Implementation Committee at its first meeting held on 12th September 1959 recommended the constitution of a small Sub-Committee with one representative of employers and the other of employees to find out whether out of Court settlement would be possible on the appeals made to the High Court and the Supreme Court against the awards of Labour Courts and the Industrial Tribunal. A Sub-Committee has accordingly been constituted with the Assistant Commissioner of Labour who is in charge of the work relating to the State Evaluation and Implementation Committee and with one employer and employee representative each. Hitherto three cases have been settled out-of-court by the efforts made by the Chairman with the consent of the members. Further cases of appeals pending before the High Court and Supreme Court are being taken up for study by this Committee.

Workers' Education

In pursuance of the recommendations of the Team of Experts as approved by the Indian Labour Conference at its 15th Session held in July 1957, the Government of India have sponsored a Scheme of Workers' Education and entrusted its administration to an autonomous body called the Central Board for Worker's Education which consists of representatives of employers, workers, educational institutions and of Government. The Scheme has for its objective the creation over a period of time of a well-informed and responsible industrial labour force, capable of organizing and running trade unions on sound lines. This scheme was inaugurated in this State by the Minister for Industries and Labour, on 20th September 1960 and the first batch of twenty-five worker teachers drawn from various major industrial undertakings in the City commenced their training at the Workers' Education Centre, Madras, on 10th October 1960. The curriculum of the course included Labour legislation, trade union methods Five-year Plans, Productivity and weekly visits to various factories. Teaching aids such as group discussions, debates role plays, skits and dramas, film shows, etc., are freely resorted to in the training in addition to lectures. The trainees were also taken on a study tour to Tata Nagar, Sindri, Dhanbad and Calcutta where they visited various factories.

Srimathi Krishnaswami giving away the Rolling Shield to the leader of the division declared best during the sports.



To help enforce the Working Journalists (Conditions of Service) and Miscellaneous Provisions Act and the other non-technical Acts more effectively, the Government have ordered the conversion of the post of the Inspector of Newspaper Establishments into that of an Inspector of Labour, and the territorial distribution of the work among all the six Inspectors has been revised. The Presiding Officers of Labour Courts have been appointed as authorities under this Act as well as the Working Journalists (Fixation of Rates of Wages) Act, 1958, to determine the amounts due to the working journalists. These Courts have disposed of 19 applications filed under Section 9 of the Working Journalists (Fixation of Rates of Wages) Act during the year.

Security and Welfare

The Commissioner of Labour, the Assistant Commissioner of Labour and the Personal Assistant to the Commissioner of Labour continued to be the Commissioners for Workmen's Compensation under the Act. Besides 245 cases pending at the commencement of the year, 601 cases were filed during 1960. Of these 846 cases, 611 were disposed of during the year. A sum of Rs. 2,80,306·05 was deposited with the Commissioner for Workmen's Compensation by way of compensation. Government have sanctioned a sum not exceeding Rs. 1,000 towards payment for legal assistance at State cost to deserving workmen or their dependants claiming compensation under the Act. The Additional Commissioner for Workmen's Compensation has been authorized to sanction the payment of a sum of Rs. 10 for each day of hearing subject to a maximum of Rs. 30 for each case and the Commissioner has been authorized to sanction the payment of amount exceeding the maximum up to Rs. 50 in special cases.

The Employees' State Insurance Scheme has been in force in Madras City, Coimbatore, Madurai, Ambasamudram, Tuticorin, Tiruppur, Udumalpet, Salem and Mettur covering about 183,000 workers. During the year 1960, the scheme was extended to Rajapalayam, Sivakasi, Perianaickenpalayam, Peelamedu and Dhalmiapuram. The scheme has also been extended to Tiruchirappalli, Cauverynagar and Ranipet areas on and from 29th January 1961. With the implementation of the Employees' State Insurance Scheme to the above eight places about 21,40 workers have been brought within the fold of the Employees State Insurance Scheme. The total number of insured workers in the State is about 200,000. The proposal for the extension of the scheme to Dindigul, Tirunelveli, Usilampatti, Kovilpatti, etc., and to the families of th insured persons in the areas where the Scheme is already in force are under the consideration of the Government.

Medical care under the scheme is being administered by the State Government through service personnel as also panel doctors. In Madras a separate hospital exclusively for the use of insured persons with a bed strength of 78 is functioning. During the year 1960, the work relating to the construction of the 175 (General 150, T.B. 24) bedded new Employees' State Insurance Hospital, Madras, has been taken up and the work is in rapid progress. It is proposed to further increase the bed strength of this Hospital in the next year. A proposal for the handing over of the 84 bedded Employees' State Insurance Annexe at Headquarters' Hospital, Coimbatore, to Headquarters Hospital and to construct a separate Employees' State Insurance Hospital at Coimbatore for the use of insured persons similar to the new Employees' State Insurance Hospital at Madras now under construction is under the consideration of Government. The Government have sanctioned in 1960 the construction of a 12 bedded wing in the Government Hospital, Sivakasi, for the exclusive use of the insured persons of that area and it has since been completed. A separate Employees' State Insurance Hospital at Madurai is being opened by taking over the present Infectious Diseases Hospital, in which certain major alternations are to be made and additional buildings will be put up to serve the insured workers. The Government have ordered the construction of two permanent wards of 26 beds each at T.B. Sanatorium, Tambaram at a cost of Rs. 1,20,000 for the use of the Employees' State Insurance patients at Madras as against one permanent and one temporary ward already sanctioned. An Employee's State Insurance Mobile Van Dispensary for the use of the insured persons in Tiruchirappalli area was constructed during 1960. A new Empoyees' Satate Insurance Dispensary sanctioned already by the Government for the Choolai area, to relieve the congestion at the existing two Employees' State Insurance Dispensaries at Perambur will be opened shortly as a suitable building in the area has already been secured and is being equipped.

Extended cash benefit

With a view to help the insured persons suffering from protracted illness, the extended cash benefit hitherto payable only for a period of 126 days has been extended to 309 days in addition to the ordinary 56 days sickness benefit on and from the 15th August 1960. Under section 73 of the Employees' State Insurance Act, insured persons while under certified sickness stand protected ordinarily for six months from dismissals, discharges, etc., by the employer. The section has been amended to enable insured persons suffering from long-term diseases to have medical treatment effectively without fear of losing their jobs. Protection for a period of one year from dismissal, discharges, etc., which has hitherto been available only to insured persons suffering from T.B. has now been extended to insured persons suffering from Leprosy, Mental and Malignant diseases also.

The Employees' State Insurance Corporation has granted the facility of payment of cash benefits by money-order at Corporation's cost irrespective of the amount involved on a permanent basis.

Provident Fund

The Employees' Provident Fund Act, 1952, another important measure of social security confers on industrial workers in scheduled industries and other specified classes of establishments, retirement and death benefits in the nature of Contributory Provident Fund. This Act was further extended to the following industries and classes of establishments during the year 1960 : (1) Mica Factories, (2) Plywood Industry, (3) Automobile Servicing and repairing Industry, (4) Rice Milling, (5) Flour Milling, (6) Dhal Milling, (7) Mica Mines and (8) Cane Farms owned by a Sugar Factory. The Act now applies to 47 industries in all. The Employees' Provident Fund (Amendment) Bill, 1960, which brings down the minimum employment strength for coverage from 50 to 20 has been passed into law and came into force with effect from 31st December 1960. All those classes of establishments to which the Act has already been made applicable under section 1 (3) (*b*) and those factories which are engaged in the scheduled industries employing 20 and more will now be covered under the Act. Consequent on this amendment about 400 new establishments employing about 12,000 additional employees are expected to be brought under the purview of the Act.

Houses for Workers

In the State 960 factories and establishments employing about 2,890,000 workers are covered. Out of them, 54 factories establishments are allowed to administer their provident funds by granting necessary exemption while 906 factories, establishments are under the direct control of the Employees' Fund Organisation. The total number of subscribers at the end of the financial year 1959–60 was 251,600 as against 249, 504 at the beginning of the year.

The rate of Provident Fund Contribution continues to be $6\frac{1}{4}$ per cent of the basic wages and dearness allowance including cash value of food concessions. The question of enhancing the rate of contribution to $8\frac{1}{3}$ per cent on basic wages and dearness allowance is now being examined by a Technical Committee appointed by the Government of India. The total amount of Provident Fund Contribution remitted during 1959–60 was Rs. 2,20,88,428.

Among other welfare measures special mention may be made of the steps taken by the Government for the provision of houses to the industrial workers. Under the Subsidised Industrial Housing Scheme, the Government of India grant financial assistance to the employers, State Governments, Statutory Housing Boards and Registered Co-operative Societies of industrial workers for the construction of houses. The provision made in the Second Five-Year Plan for Subsidised Industrial Housing, the targets fixed, the amount spent so far and the houses constructed up till now are indicated below :—

Provision made in the Second Five-Year Plan.	Rs. 69·94 lakhs.
Targets fixed	1,700 houses.
Amount spent up to 31st December 1960.	Rs. 77·19 lakhs.
Number of houses constructed so far.	1,098 houses.
Number of houses in various stages of construction.	170 houses.

The Schemes sanctioned by Government provide for construction of houses for industrial workers in Vellanur (Tiruchirappalli district), Sivakasi, Virudhunagar, Singanallur, Sembium (Madras) and Industrial Estate, Guindy, Pettai, Tiruchirappalli, Madurai, Katpadi, Erode, Salem and Thanjavur. Out of 23 schemes sanctioned by Government, 15 schemes have been completed and the remaining eight schemes are in various stages of execution. The number of houses constructed by the employers under the scheme is 552 at an estimated cost of Rs. 9,21,721 the amount of loan and subsidy granted by the Government being Rs. 5,43,971 and Rs. 3,77,750. Recently the Government have sanctioned five projects for the construction of 960 houses by employers at a total cost of Rs. 33 lakhs.



Srimathi Indrani Krishnaswami presenting the Rolling Cup donated by the Harijans of Chidambaram taluk to the captain of the Headquarters Division adjudged the best division during the Sports.

Under the Plantation Labour Housing Scheme formulated by the Government of India, loans are granted to the planters to assist them in the construction of houses for the workers. The provision made in the Second Five-Year Plan, the amount spent so far and the number of houses constructed are as follows :—

Provision made in the Second Five-Year Plan.	Rs. 3·46 lakhs.
Target	180 houses.
Amount spent so far	Rs. 2·74 lakhs.
Number of houses constructed ..	155 houses. (25 houses are yet to be constructed.)

Coffee Plantation Workers

The Coffee Board has offered a sum of Rs. 28,000 for welfare amenities to be provided for workers employed in Coffee Plantations in this State. Out of this amount, a sum of Rs. 21,000 has been earmarked for providing scholarships and stipends to deserving children of workers employed in Coffee Plantations to enable them to acquire better, higher and specialised vocational training and a sum of Rs. 7,000 for providing medical aid to plantation workers which is not ordinarily available in Government or group hospitals. Scholarship was granted to 10 pupils during the year 1959-60 and 17 pupils during 1960-61. The total amount so far spent is Rs. 12,395.

The Government have sanctioned the construction of a Holiday Home at Mahabalipuram at non-recurring expenditure of Rs.64,300 to provide a suitable place for the workers where they can spend a few days and regain fresh vigour.

The Government attach great importance to measure-calculated to secure increased productivity. The Government have nominated their representatives to serve on the governing body of the Madras and Coimbatore Productivity Coucils. One of the Inspectors of Factories who has undergone training in Productivity in the U.S.A. has been appointed as Inspector of Factories (Productisvity). During 1960-61, the Government sanctioned a grant of Rs. 10,000 to the Madras Productivity Council to enable it to carry on its work.

Site for Gandhi Memorial in London

In a letter in the London *Times* published it has been suggested, that a most appropriate site for the proposed British memorial to Mahatma Gandhi would be the Temple Gardens on the Thames Embankment.

The letter says : " There has been discussion as to possible sites for the suggested memorial to Mahatma Gandhi. Surely the Temple Gardens on the Embankment, in sight of the towers of Westminster, would be a most appropriate place for honouring the greatest Inner Templar of this century.

" Britain would then have its own Rajghat, reminding those many who happily still seek juridical inspiration in the learned and honourable societies of the Inns of Court that the Thames, like the Jumna, is ' liquid history '."

Mahatma Gandhi was called to the Inner Temple one of the historic Inns of Court in the United Kingdom, in June 1891.

Forestry in the U.S. and Europe: Some Impressions

Sri S. M. A. ASLAM, *Personal Assistant to the Chief Conservator of Forests.*

[*Sri C. A. R. Bhadran, Chief Conservator of Forests, was one of the two official delegates from India to the Fifth World Forestry Congress held at Seattle last year. Accompanied by Srimathi Bhadran, Sri Bhadran toured the forest areas of the United States very extensively and also visited Sweden, Denmark, West Germany, Switzerland, and the United Kingdom in Europe. He undertook during the tour a detailed study of forest practices and modern developments in plantations and utilisation methods.*]

Mr. C. A. R. Bhadran, Chief Conservator of Forests, Madras, was one of the two official delegates of the Government of India to the 5th World Forestry Congress held in August-September 1960 at Seattle in the United States of America. The other member was Mr. V. S. Rao, Inspector-General of Forests, India. About 70 countries participated in the Congress. India's was one of the smallest delegations. The United States of America had the largest delegation (1,300), since the Conference was in that country. Canada and Mexico had sent 100 each. Most European countries had sent large delegations. Many eastern countries even had sent 10 delegates, for example Japan, Thailand, Phillipines Australia, etc. Some of the African countries were also well represented.

Mr. and Mrs. Bhadran left Madras on August 5th. A week's stay in the Phillipines enabled them to see some of the forests in the Islands and their Forest Research Station and Forestry School. Prior to the Congress they undertook a tour of the West Coast States in the United States, starting from Los Angles. The highlight of this tour was a visit to the Yosemite National Park and the Sequoia National Park. The former was unique for its impressive glaciated valleys and the latter for the largest, oldest and tallest living things on earth : the venerable trees of the Sequoia family.

Parks in U.S.

The organisation of National Parks in the United States of America aims not only to preserve the best of Nature's displays but also to provide for their full enjoyment of the public ; more than that is the avidity with which people resort to these parks. The Yosemite park (for instance) has furnished cabins and rooms besides camp sites for tented accommodation and parking sites for Caravans; affording camping facilities for as many as 4,000 families at a time. Yet, accommodation could be ensured only by reservation in advance. All camp sites are equipped with such facilities as running hot and cold water and electricity. There are also central cafeteria, shops etc. The healthful holiday atmosphere of these National Parks is obvious even to the casual visitor and much can be learnt from them for improving our own parks. There can be no doubt that nature has endowed our country also with equally attractive localities and features.

Governor Bishnuram Medhi inaugurated the 38th Annual Flower Show in the City recently held at My Lady's Gardens and spent some time inspecting varieties of vegetables and flower beds on display. In the picture he is seen watching one of the flower arrangements.





The Governor inspecting one of the prize vegetables exhibited at the Flower Show.

Other national parks visited on a subsequent tour included the Yellow-stone Park famed for its geysers and hot springs besides its forests and wild life. The Titan National Park is noteworthy for the sheer ruggedness of its mountains.

The Douglas fire forests of the west coast were most impressive and were an almost inexhaustible reservoir of large timber and the Americans exploit this timber on a vast scale with every conceivable variety of mechanical equipment. While with our enormous population which has to be gainfully employed, mechanization may not prove wholly beneficial in India, there is a lot that could be improved by way of hand tools and small-scale equipment in our forest operations.

The Forestry Congress

The Forestry Congress was an education in itself, even to senior participants. It lasted 12 days and forestry was discussed in all its aspects under seven major subject headings. The two main themes elaborated at the Congress were Multipite Use Forestry and improved Forest Economics. Under the former, the value of forests for their produce, water conservation, soil conservation, wild life management and public enjoyment was emphasisized. Under the latter, the need for a vigorous forest policy adapted to the modern conditions and the world's rapidly increasing population and its industries was stressed. Mr. Bhadran dealt with an important aspect of the second theme, viz., population pressures and Timber needs in the World. His paper was very well received at the Congress. More than anything else the necessity for intensive development of forest lands and using fast growing wood species became apparent as a result of the deliberations of the Congress.

International Grove

There was much social entertainment also. Among others, the Mayor of Seattle was host at a banquet for the Congress. The head of the Washington University at Seattle (in which campus the Congress was held) gave a reception. Flags, fanfare and trumpet were much in evidence at the ceremonial planting of trees to establish an International Grove of Friendship, to mark the occassion of the World Forestry Congress. A tree characteristic of each country participating in the Congress was ceremonially planted by the leader of the country's delegation. The Himalayam Deodar was planted by Sri Rao for India. Among the selected few who addressed the gathering on the occassion was Mr. C. R. Ranganathan, former Inspector General of Forests, India who had attended the Congress in his capacity of past President.

After the Forestry Congress Mr. Bhadran visited various countries of Europe, chiefly Sweden, Denmark, West Germany, Switzerland and the United Kingdom, Mr. Bhadran undertook studies of their forestry practices and modern developments in plantation and utilization methods. He spent 10 days in West Germany as the guest of the Government and over a month in the United Kingdom at the invitation of the British Council. He was able to see Swedish, Danish and Swiss Forests and pick up many new details of forestry technique which he hopes to put to use in the Madras State forests with advantage.

The Forest Institute set up in Rome (by the Italian Forest Organization) exclusively to study two families of fast growing trees, viz., Poplars and Eucalyptus, proved of special interest; similarly too, the genetic improvement studies in pines at the Forest Research Station at Alice Holt in England. At Nagold in Germany, the German Forest Department have a most elaborate centralized plant for collection, cleaning and storage of forest tree seeds. Nothing of the kind exists as yet in India.

India's First Wide Strip Mill

India's first wide strip Mill was inaugurated in Rourkela by the Prime Minister on March 28. The Strip Mill is expected to produce 600,000 tons of rolled strips during the initial stage and on completion of expansion schemes, it will produce more than one million tons of strips per year. The Mill produces eight tons of steel sheets, nine hundred feet in length, in two and a half minutes. The Plant, described as the first in Asia, was ready for operation on February 28 and has been working successfully since then.

Animal Husbandry in Madras State

DR. D. PATTABHIRAMAN, *Director of Animal Husbandry.*

Cattle play a very important role in the economic life of our country. They are the backbone of our agriculture. Our country is overwhelmingly agricultural. The greatest field for economic development and advancement lies in our agricluture where about 80 per cent of the population are directly engaged. Such a development however cannot be brought about unless and until the question of improvement of our cattle is effectively tackled.

Though we have the largest cattle population of the world and though our cattle have been exported previously to other countries, milk production in our country and the present condition of our cattle is far from satisfactory. There is room for great improvement in the efficiency of the work bullock and greater need for increased efficiency in milk production. How to improve the quality of our cattle with regard to increased milk production and efficiency of the work bullock is the problem with which the Government, animal husbandry experts and scientific workers are all vitally concerned.

The initial problem of improving cattle is better feeding and controlled breeding. These two factors should always go hand in hand, as otherwise it is difficult to achieve the desired results. The ideal and effective method of improving rural cattle (non-descript stock) is to grade them according to the desired type by the introduction of pedigree bulls of descript type. It is very essential to improve the quality of stock by planned breeding with the available descript breeds of cattle with due consideration for economic utility of the animals in different regions under different environmental conditions.

Development Under Plans

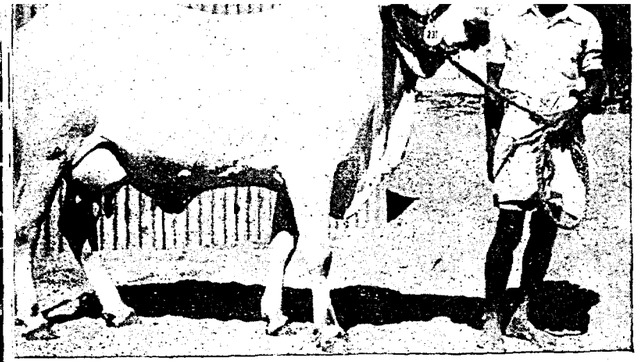
Since India became independent thirteen years ago, development of the country's cattle wealth has been receiving increasing attention and encouragement. Greater attention to various cattle development problems has been evinced both at the Centre and the States leading to formulation of a number of useful schemes for cattle development.

The First Five-Year Plan was introduced at a time when the State suffered much in the food-front due to war and partition. Adequate emphasis was not laid in the First Plan for production of food of animal origin. Proper attention for the improvement of cattle could not be paid and there was great depletion of cattle on account of slaughter with no reference to quality to meet army requirements of beef. The livestock population as per the cattle census of 1951 for the entire composite State of Madras comprising of 26 districts was 51·2 million. At the beginning f the First Plan, there were in the State (Composite State) 144 veterinary institutions and 119 minor veterinary dispensaries, six livestock farms and a salvage farm for dry cows in Madras City. The veterinary facilities thus afforded and the pedigree seeds of bulls that could be obtained from these few State farms could scarcely meet the real demand. The animal husbandry schemes totalling 22 which were included for this State under the First Plan and costing Rs. 56·28 lakhs laid emphasis mainly on arrangements for the production and use of an adequate number of superior bulls.

The schemes under the Second Five-Year Plan were drawn up taking into consideration all problems connected with animals in health and disease and also with the experience gained during the First Plan period so as to cover all aspects relating to the development and preservation of livestock. A sum of Rs. 217·48 lakhs was provided for animal husbandry schemes during the Second Plan.

Breed champion and Suprome champion Hallikar Bull of the Livestock Research Station, Hosur Cattle Farm, aged 8 years has achieved so far the proud tally of 60 calves, 36 males and 24 females.





Thaparkar cow aged six years, a winner in its class, gives three lactations and yields 20 lb. milk per day.

The problem was, hence, one of grading the vast number of non-descript cattle in this State with pure breeds of Sindhi and Murrah buffaloes for milch type and with pure breed of Kangayam for the draught type. For this purpose a large number of pure-bred Sindhi, Kangayam and Murrah buffaloes were necessary. Livestock improvement schemes under this plan had mainly in view arrangements for the production and use of an adequate number of superior bulls of known percentage of productivity and the elimination of inferior and unapproved bulls of non-descript type.

Livestock Farms

In Madras State, prior to the intoduction of the First Plan, in the year 1950-51, there were six Livestock Farms situated at Hosur, Guntur, Vizag, Bellary, South Kanara and Malabar. After the separation of Andhra and the reorganisation of States, the only farm belonging to Madras State was the Livestock Research Station, Hosur. This farm is being maintained by the State Government from 1924–25. Since 1938–39 this farm is under the control of the Animal Husbandry Department. The main object of maintaining this farm is to raise pure-bred herds of Sindhi and Kangayam and production of good pedigree bulls for distribution in the districts. This Livestock Research Station has, since its inception, contributed much towards grading up of village cattle. The main breeds of cattle maintained at this station are Sindhi, Gir and Kangayam. By selective breeding with proven sires, it has been possible to build up a Sindhi herd at this farm which compares very favourably with the Sindhi herds in Pakistan. Valuable research work has been undertaken to improve the breed characters of Sindhi and it has been possible to produce Sindhi cows here which are capable of yielding 11,000 lbs· of milk in a single normal lactation. A Sindhi cow (No. 823) yielding 9,112 lb. milk yield in the first lactation itself was recorded for the first time at this farm recently. This cow's second lactation yield was 10,430 lbs. The strength of the Sindhi herd has been steadily built up from 10 Sindhi animals at the inception to 485 at present. This increase was achieved by increasing the rearing proportion and the average reproductive life and keeping down mortality rates. Repeatability and Heritablity studies in the production statistics for this Sindhi herd indicate that sufficient variability existed in regard to most of the characters affecting milk production to warrant the possibility of quick improvement in production in future years. The building up of this Sindhi herd was made possible by attending to genotypical and phenotypical characters by selective breeding. Due consideration being given for environmental practices prevailing at the farm. The Gir breed, noted for its milk potentialites, was introduced at this farm during 1949–50 with nucleus stock of 52 animals purchased from Kathiawar State and Bhavanagar Dairy, the home tract of this breed. This breed till now has shown good potentialities for milk yield at the farm and the average yield in a single lactation has been 3,812 lbs. The present strength at the farm is 158.

Hosure Farm

After the reorganisation of States the Bellary Farm where the draught type of Hallikar breed of cattle was reared was no long in Madras State. It became necessary to have this breed also reared for the benefit of the areas in this State, adjoining the State of Mysore. Accordingly 51 Hallikar animals were purchased from the breeding tract and reared at Livestock Research Station, Hosur, from February 1958 onwards. The breed was developed well and the present strength of Hallikar is 155 at this farm. Sindhi, Gir and Hallikar breeds are reared at this farm at present.

With the merger of Pudukottai State with the Indian Union, the Agricultural Research Farm at Pudukottai was taken over on 5th June 1961 and developed as a district livestock farm. The object of taking over this farm was to breed livestock and run a small dairy. At the time of taking dover 103 animals comprising Sindhi, Murrah, Kangayam Cross-breed and non-descript breeds were kept at the farm. Most of the stock had to be disposed off as they did not conform to any recognized breed characteristic and the pure-bred stock of known pedigree had to be transferred from other farms to serve as a nucleus for further expansion. The area of the farm was only 9·26 acres and situated as it was inside the limits of Pudukottai town, there was no scope for further expansion. An area of 900 acres in the Machuvadi forest situated at the junction of Pudukottai, Thanjavur and Andakulam Roads, was acquired in January 1957. Since then an area of 864 acres of scrub jungle has been cleared of which 410 acres have been brought under cultivation. Soil conseration work, contour bunding, raising pasture and fodder crops are in progress. When the work is completed, this livestock farm is bound to produce

uitful results. At present there are 370 animals comprising ıdhi, Kangayam and Graded Sindhis reared at this ·m.

rthanad Farm

The District Livestock Farm, Orthanad was taken over the Animal Husbandry department on 12th June 54. The farm originally belonged to Chattram depart-ent and was used by the now defunct Agricultural Train-g school, Orthanad. The original extent taken posses-n of was 280 acres. The main objects of the farm (1) the breeding of Sindhi, Umblachery and Murrah ıffaloes and supply of pedigree bulls in those breeds and the improvement of the local breeds of cattle. Accord-gly this farm opened with an initial stock of 10 Sindhi ws with 10 calves, one Sindhi breeding-bull and 12 ngayam work cattle, the total strength being 33 inclu-g work animals. The required number of stock in the nblachery and Murrah breeds were purchased and some eding stock in the Sindhi breed were also obtained by nsfer from other farms. Thus during the end of the ar 1954–55, the breeding stock of Sindhi, Umblachery d Murrah was 31, 67 and 49 respectively making total of 147. This strength has been slowly built up ring the last six years and there are at present 662 ligree cattle comprising 179 Sindhi, 259 Umblachery d 224 Murrah Buffaloes. An extent of 1,345 acres s acquired last year at the village of Eachankottai for expansion of the farm and the area is being reclaimed d the lay-out has already been prepared. It has en found advisable to develop Umblachery at its breed-tract itself and an area of about 494 acres has been uired at the village of Korukkai, where the area is ng reclaimed and fodder grasses are grown. It is pected that when proper accommodation is available this farm, the breed of Umblachery will be tranferred re. A pasture plot of 100 acres has been developed the farm to provide fresh nutritious fodder for farm mals.

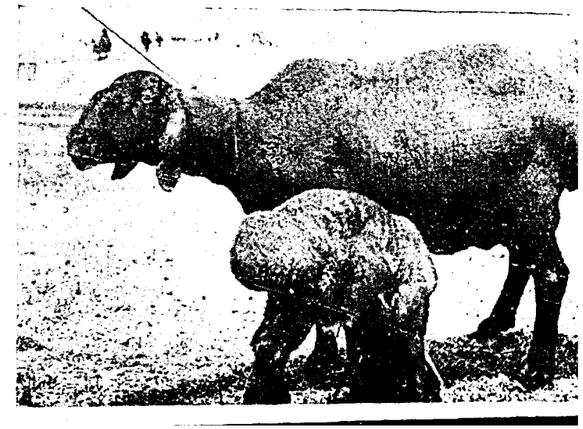
The District Livestock Farm, Chettinad, opened on 9th vember 1956, is situated on the Karaikudi-Tiruchy in road at a distance of about 9 miles from Karaikudy, ering an area of 1,771 acres. In June 1958, all the ngayam animals numbering 223 were transferred from estock Research Station, Hosur, to this farm. In lition 30 Tharparker animals (milch breed) were pur-sed from the National Dairy Research Institute, Karnal, l stationed at this farm. This was the first time this ch breed was being introduced in the State. In addi-ı Murrah Buffaloes and 140 Hariana breed of cattle. lual-purpose animal, were received from Punjab and ioned at this farm for breeding purposes. Again in tember 1960 the Thari breed of cattle which is also ual purpose animal was purchased from Rajasthan. Forty-five Thari cows were also received. At present this is a full-fledged livestock farm with 691 pure descript breeds of cattle consisting of 325 Kangayam, Tharparker and Thari 129, Murrah 58 and Hariana 166.

In all the livestock farms of the State, on an average 200 breeding bulls of descript type are produced for livestock improvement work.

Key Village Scheme

The All-India Key Village Scheme for cattle development and for increasing their productive efficiency was initiated in 1952. This scheme envisaged the planned utilization and multiplication of the limited superior germplasm available in the country and their organized distribution. The primary idea was to produce sufficient number of superior bulls to meet the acute shortage of such bulls. The scheme was initiated in Madras State as a pilot measure during the year 1951 by starting seven Key Farm Centres in the seven Government Livestock Farms of the composite State of Madras. As most of these livestock farms were not located in recognized cattle breeding tracts and as it was found necessary to locate the Key Village Centres in breeding tracts, all these centres except the centre at the Hosur farm were subsequently shifted to breeding areas of Ongole, Hallikar, Kangayam, and Sindhi breeds of cattle, when these centres merged with the All-India Key Village Scheme sanctioned in August 1952. The technical programme of the scheme aims at intensive livestock improvement in a compact area,where all aspects of animal husbandry are covered, namely controlled breeding, proper feeding, rearing of young stock, cultivation of fodder crops, silege making, pasture management, dairying, marketing, record keeping and producing seed bulls. All the scrub bulls in the area are castrated and only pedigree bulls are allowed to propagate

The Geesargaya breed of sheep presented by the Soviet Union to Madras State now stationed at the Livestock Research Station, Hosur.



by natural service and artificial insemination. During 1952–53 there were seven Key Village Centres and six Key Farm Centres in private institutions. After the partition of the State in 1953, there were 5 Key Village Centres and 6 Key Farm Centres in private institutions in the residuary State. Two Key Village Centres in each of the years 1953–54 and 1954–55 were started. At the end of the First Plan 9 Key Village blocks and 6 Key Farm blocks with 60 key villages attached to them were functioning. At these Key Villages the record till the end of the First Plan was 63,095 Artificial Inseminations, 9,470 natural services, 1,02,731 inoculations and 7,656 constructions. Nine thousand Six hundred Forty-six calves were inspected and 346 calves were subsidised. The Key Villages were located only in the breeding tracts of the State to maintain the continuity of breeding.

Centres expanded

During the Second Plan, all the Key Villages and Key Farm Centres were expanded so that each block consisted of 6 Key Villages as against 4 in the First Plan and covered 5,000 cows and buffaloes of breedable age. It was proposed to have new additional Key Village Blocks with 6 Key Villages each during the course of the Second Plan. At the end of 1959–60, there were 32 Key Village blocks in the State. During 1960–61, seven more Key Village Blocks were opened, making a total of 39 Key Village Blocks with 234 Key Villages covering 1,95,000 cows and buffaloes of breedable age. These villages are located mostly in the breeding tracts and the area covered by each block is roughly about 5 to 10 miles radius. Approved bulls of Kangayam, Hallikar, Sindhi, Sahiwal and Murrah Buffalo breeds are used for breeding in these blocks. Both natural services and artificial inseminations are undertaken free in all the blocks and full breeding control is practised by systematic castration of all scrub bulls. Milk recording is also done. All the animals in the blocks are protected against contagious diseases and first aid centres are run for the treatment of non-contagious diseases. Since the inception of the Key Village Scheme in the State, 5,69,115 artificial inseminations and 63,187 natural services have been performed, 1,21,534, calves have been inspected and 42,390 castrations and 9,42,573 inoculations have been undertaken.

In order to encourage ryots to maintain calves born to approved bulls in the blocks in good condition, the bull calves in the area were subsidised at the rate of Rs. 5 per calf per month from the age of 6 months till they reached 3 years of age or maturity, whichever was earlier. During the First Plan period 400 bull calves of Kangayam, Halli kar, Sindhi and Murrah Buffaloes were subsided. During the Second Plan period the subsidy was increased to Rs. 10 per calf per month and both bull and heifer calves were subsided. A total of 6,422 calves were subsidised till 1959–60.

There are Key Village Extension Centres, in the areas which are not covered under the Key Village Scheme. The main object of these centres is to utilise systematically all the bulls produced in the blocks so as to maintain the continuity of breeding work. Under the Second Plan 46 Extension Centres were opened in this State covering 2,30,000 cows and buffaloes of breedable age. At these centres, 50 bulls of approved breeds were distributed for natural services free of cost. These bulls were distributed to selected custodians within a compact area and a sum of Rs. 30 per mensem per bull was paid as subsidy to each of them. Full breeding control was enforced at these centres by systematic elimination of scrub bulls. Most of the programmes envisaged in the Key Village areas are followed in these Extension Centres also.

Baby Elephant 'Olga Lakshmi' was gifted to the Corporation Zoo in the City recently by Marquis Woodland Kahler De St. Innocent, President of the International Vegetarian Union, on behalf of the Union and the Indian Vegetarian Congress. In the picture the Marquis, the Revenue Minister and the Mayor are watching the elephant with interest as it lifts up its trunk to receive a fruit from the wife of the Marquis.



Artificial Insemination Scheme

Livestock improvement schemes under the Plan included the opening of Artificial Insemination Centres also. The technique of Artificial Insemination was introduced in this State to overcome the acute shortage of approved bulls in April 1948, when a beginning was made by training the breeding bulls at the Madras Veterinary College, Madras, for artificial insemination work. To start with the work was confined to the city of Madras. The work turned out proved very successful and another centre at Coimbatore was opened on 7th February 1950 at the Veterinary Hospital. Both the centres at Coimbatore and Madras gained popularity resulting in the opening of 3 sub-centres for the city of Madras at Mylapore, Saidapet and Basin Bridge. These sub-centres were visited daily with the semen collected from the main centres and cows were inseminated. After the commencement of the First Plan in 1951, since the demand for artificial insemination was increasing, two more centres, one at Ootacamund and one at Valparai, were opened on 15th October 1951 and 1st December 1951 respectively. During 1952–53, the centre at Valparai was converted into a Key Village Centre and was shifted to Madurai. In 1954–55, the cross-breeding scheme was introduced at Ootacamund by the Indian Council of Agricultural Research and the Artificial Insemination Centre was transferred to Trichinoply. Two more centres were opened by the State during 1955–56 at Salem and Erode. At the end of the First Five Year Plan 56,232 inseminations had been performed in all the six centres functioning at this State. To overcome the shortage of the required number of breeding bulls and also to intensify livestock improvement by the utilization of better bulls for breeding milch cows it was proposed to increase the number of Artificial Insemination Centres during the Second Five Year Plan. Accordingly 19 urban artificial insemination centres were opened in the urban areas of the State, so as to develop the milk pockets by utilizing milch breeds such as Sindhi, Gir and Murrah for the purpose. In addition, in the rural areas under the community development programme 15 artificial insemination centres were also established. There are now 40 artificial insemination centres both in the rural and urban areas and 3,37,309 inseminations were effected during the plan period, and 56,286 calves were inspected by the staff.

Goshala Development

Other developmental schemes in the Plan period for improving milch breeds of cattle include the Goshala Development Scheme. The term "Goshala" is taken to mean any public charitable institution working for the welfare, protection and preservation of cattle. Though it is considered that the Goshala and Pinjrapoles are of North Indian concept, it is not alien to South India, since institutions like "Pasumadams" have been fostered in big temples of South India from time immemorial. Each selected goshala is supplied with ten cows and one bull of known breed while the institution is expected to maintain a similar number of cows of its own. A sum of Rs. 5,000 is given as grant for repair of sheds, etc. Rs. 2,000 is paid as annual maintenance grant. The calves found in the goshala are subsidised. Four Goshalas function in the State at present. They are located at the Gandhi Memorial Ghoshala, Alathambadi, Kasturba Gandhi Kanya Gurukulani, Vedaranyam, Mazhayankanni Goshala, Valivalam and Agneeswaraswamy Devasthanam Goshala,



Goverment bestows more than mere routine care or inmates of the Government Mental Hospital and organizes s meets and encourages natural aptitu 'es in an effort to effect sp return to normalcy of patients. Finance Minister Subrama presided over the Annual Sports at the Hospital recently. I picture he is seen inspecting beautiful handicrafts mad talented inmates of the hospital.

Tirupugalur. To the extent possible Sindhi breed maintained here. Six temple "pasumadams" in the S are also likely to be included under the scheme. "Cross Breeding Scheme" with the object of impro local non-descript cattle in hilly and heavy rainfall a in the State by using foreign jersey blood through artifi insemination also functions in this State with headq ters at Ootacamund. The scheme was sponsored by Indian Council of Agricultural Research, New Delhi January 1955.

Dry Stock Farm

Due to high cost of maintenance, a large number of co brought into the city annually from breeding areas purposes of milk supply are sold to butchers slaughter when they go dry or are kept in unhygie conditions or are subjected to malpractices that ren these animals sterile or otherwise unfit. T results in a steady depletion of potential cat wealth. The Government realised the situati and with the object of preventing indiscriminate slaught of valuable milch cattle, sanctioned a Salvage Far for dry cows in May 1944. This salvage farm was fir situated at the Kambakkam hills of Ponneri taluk in Chi gleput district about 54 miles from the city. Dry cows Madras city were provided a home here during the dr period at a nominal fee of Rs. 10 per mensem and returne after calving to the owners. The expenditure ov and above the salvage fees on the scheme is borne by th Government. Kambakkam was later found not suitabl for further improvement and the farm was shifted t Alamadi Reserve Forest area at a distance of about 18 mile

from Madras. This Farm started functioning at its new site of 1,028 acres from April 1958. Dry animals are accommodated here and the place is found more suitable for salvage purposes. Since the inception of the scheme till 1959-60, 3,612 milch cows have been admitted into the farm. The public have come to realise the advantage of sending their dry cows to the farm, where every care of their animals is taken and facilities for stud provided. The scheme has been greatly appreciated by all those who have availed themselves of its benefits.

Sheep Development

In Madras State at present about 35 per cent sheep are hairy mutton variety and 15 per cent wooly variety. The wooly variety is found in Nilgiris and Coimbatore districts. The wool obtained from Nilgiris is of fine fabric type and Coimbatore wool is somewhat inferior to that of Nilgiris. The black wooly variety is found in Perambalur and Musiri taluks of Tiruchirappalli district. This wool in coarse, short and of inferior quality and is used for making blankets only. The wool industry in Madras State is more or less confined to an illiterate and poor community called " Kurumbas ". The Mecheri variety of sheep are found in the Omalur taluk of Salem district and adjoining areas of Bhavani taluk in Coimbatore district. The Kilakaranji variety is seen mostly in Tirunelveli district.

Although the population of sheep in Madras is about 18·1 per cent of that in India, yet the production of wool is only 6.1 per cent. The average annual yield per sheep in Madras State is 0.9 lb. whereas in Punjab it is 4 lb. This indicates that systematic breeding and proper attention of sheep are necessary to improve the quality and quantity of wool produced in this State. It is also necessary to improve the mutton variety of sheep by increasing the body weight of the sheep by systematic breeding with superior rams of good mutton variety. Prior to the introduction of the Second Plan, the development activities of sheep were carried out through the Sheep Farm, Ootacamund, Sheep Section of the Livestock Research Station, Hosur and Sheep Shearing Units in the districts.

The part of the teacher in education in the State is being increasingly recognized and awards for meritorius service have been instituted. At a Special function arranged in the Rajaji Hall, the Governor presented State Awards to 47 teachers. In the picture he is seen giving away the present to one of the teachers.



The Sheep Farm, Ootacamund, located at the sixth mile on the Ootacamund-Mysore Road, and extends over an area of 600 acres. This farm was run under the State Scheme from its inception in the year 1950 and subsequently merged with the scheme under which, part of the expenditure for the scheme is borne by the Indian Council of Agricultural Research from 1st April 1956. The main object of this farm is to standardise the present wooly sheep in Nilgiris for its wool qualities, to improve the carcass weight to supply good rams to the public, to grade up the local sheep and also to study the disease problems under farm conditions. This farm has also undertaken investigation to establish suitable grasses that will stand the weather conditions of the area. For the purpose of improving the wool of local stock, both in quality and quantity, by cross-breeding, ten Romney Marsh Rams obtained from Australia are stationed. This farm has been selected as a sub-centre in the Southern Region by the Indian Council of Agricultural Research for conducting experiments with foreign rams to improve the wool yield and carcass weight. The flock of sheep at present maintained at this farm contains breeds of Nilgiris sheep, Romney Marsh Sheep and Cross-bred sheep.

Breeding Objects

Sheep breeding at Livestock Research Station, Hosur has had the following objects; (1) evolving white wooly sheep for dual purposes with the foundation stock of Bellary sheep, (2) to make available Bikanir rams for introduction among the flock of wooly sheep in the stock in order to improve wool quality and (3) to make available Mandya rams for introduction among the flocks of hairy sheep in Madras State in order to improve mutton quality. The breeds of sheep maintained at this farm numbering 400 at present consist of Bellary, Bikanir, Mandya and Mecheri. Shearing, experiments on body-weight and control of diseases in the flock are being carried out systematically at this farm.

Another Sheep Farm at Chinnaselam on Cuddalore-Salem Road, covering a portion of Salem and South Arcot districts with an area of 1,591 acres was opened on 31st March 1957. The main object of this farm is to improve the quality and quantity of wool yield of the local sheep, to evolve white woolly sheep, to carry out breeding experiments with local black woolly sheep with Bikanir rams and to supply pedigree rams to the public to grade up the local stock. Accordingly during 1957–58 a nucleus stock of 255 local ewes was purchased and 4 Bikanir rams were transferred from the Livestock Research Station, Hosur, with the object of carrying out breeding experiments. During the course of about three years the strength has steadily increased.

At this farm Alambadi cattle are also reared. This breed is considered a good dual-purpose breed, bred in the hilly region of Hosur and Dharmapuri taluks of Salem district.

Another Sheep Farm at Kattupakkam Reserve Forest area in Chingleput district in an area of 515 acres was opened on 5th October 1958 with the object of improving the mutton type of sheep by scientific breeding, better feeding, management and disease control. The programme of work envisaged at this farm is to conduct research to examine the possibilities of increasing the body weight of sheep by systematic breeding with the use of superior rams of good breed. The flock of sheep maintained at this farm are Mecheri, Mandya and local varieties.

Wool Extension Centres.

In addition to the two Sheep Farms during the Plan period, 16 Sheep and Wool Extension Centres and one Wool Utilisation Centre have been established in various places in the State. The main object of these centres is to improve the quality and quantity of woolly sheep in the State by grading up the local sheep by cross-breeding with Bikanir rams. Eradication of Ecto and Endo parasites of sheep is also attended to. Propaganda and demonstrations on improved sheep husbandry, use of modern methods of shearing, control of diseases, castration of scrub rams are also undertaken at these centres. These centres started functioning in this State from 11th January 1958 and continue to do systematic work on the grading of local sheep.

A Wool Utilisation Centre at Sulur in Coimbatore district was opened on 19th March 1958 with a view to conduct experiments to find out how best and in what ways the different qualities of wool that are produced in the State could be used. Wool from different centres comprising Black, Bellary and Bikanir are received and woollen products such as cumblies and mufflers are manufactured. In addition, there are 7 sheep shearing units at various places in the districts, where intensive propaganda and visual demonstration on better production and clean harvesting of wool, using improved shears, grading of wool, deworming and deticking of sheep and goats are undertaken periodically.



Ministers were among the first to welcome vaccination when recently the Small-pox Eradication Scheme was inaugurated in the City. In the picture the Finance Minister is being vaccinated in his Chambers in the Secretariat while the Minister of Public Works who also got vaccinated looks on.

Madras State possesses 10·4 million poultry. There has not been a substantial change in the poultry population since ten years. This is about one-ninth of India's total poultry population. The number of eggs produced has been estimated as too small to meet the nutritional requirements of 30 million human population. This is mainly due to failure to pay attention to poultry farming in India and also due to the inadequately appreciated importance of egg and poultry in human nutrition. It was only during World War II that any genuine interest was evinced in the development of poultry eggs in India. The factors that were responsible for the neglect of poultry in India were poor stock, prevalence of diseases, low purchasing power of individuals and above all prejudice against the consumption of eggs by a large proportion of the public. The bulk of the poultry population consists of non-descript varieties and the number of pure-bred fowls is only about one per cent of the total fowl population. Due to the large number of non-descript poultry population the total number of eggs produced is small, since the average annual estimated egg production of a village hen is 53, as compared with the average annual egg production of 150 for an exotic breed, such as white Leghorn and Rhode Island Red. Apart from the above, there has been no scientific method of breeding in the villages. In addition there has also been no proper method of feeding the birds in the villages and they are left to themselves to go about and get their food. For improving the poultry industry attention has to be paid to proper breeding, feeding and management, so that more number of eggs and birds of improved type may be made available.



Tuticorin pearls are famous and the annual pearl fishery operations there are a big draw. Governor Bishnuram Medhi who inaugurated this year's operations there recently was garlanded by the oldest member of the diving community. In the picture, the old man has just garlanded the Governor. The Minister for Local Administration is also in the picture.

The Governor and the Minister for local Administration inspecting pearls and pearl jewels at the pearl Bazaar in the Tuticorin Pearl Fishery Camp.



The Governor visited the Ice-*cum*-Storage Plant during his recent Tuticorin visit. In the picture he is seen witnessing the tank in which the fish is stored.



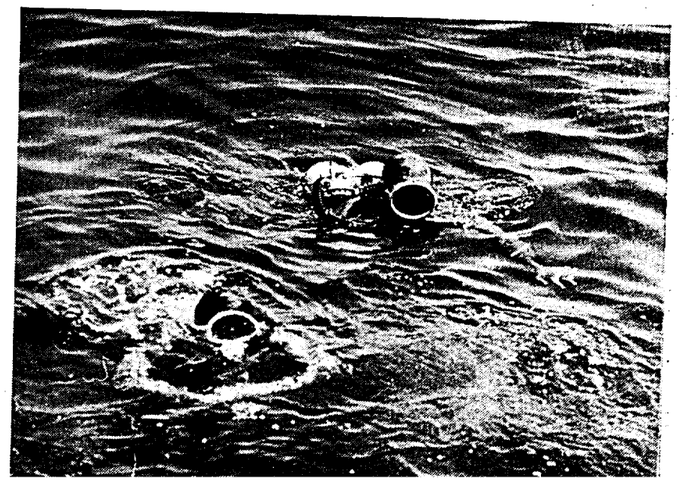


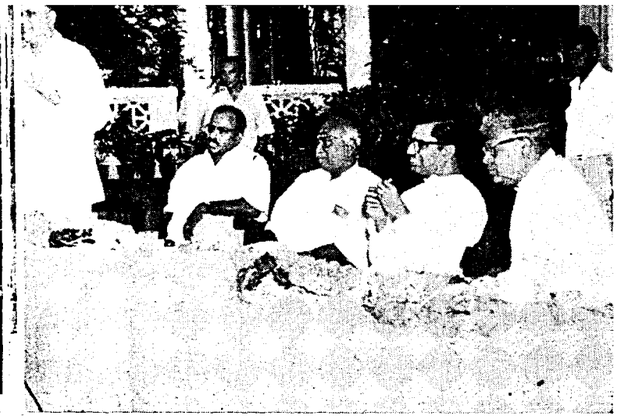
Divers at sea.



The Governor witnessing the ice-block with the fish in the middle.

Divers in one of the canoes that has gone out to sea during the pearl fishery operations. One of them has just dived and his feet can be seen aloft.





The Chief Minister gave a party recently at the Rajaji Hall to felicitate the Finance Minister, the Industries Minister and the M.L.As. who accompanied the Finance Minister on their successful tours abroad. In the picture, one of the M.L.As. is seen addressing the party.

In Madras State, prior to the introduction of the Second Plan, poultry development work was undertaken through the Poultry Research Station, Madras, the Poultry Section of the Livestock Research Station, Hosur, and the poultry demonstration units at the various veterinary institutions where exotic breeds of poultry such as White Leghorn, Rhode Island Red and Black Minorca are reared. These Farms and Units not only catered for the needs of the local area for meeting the demands of breeding stock and hatching eggs, but also served as demonstration centres for poultry production on modern scientific lines. Under the Second Plan, poultry development work has concentrated on the scientific production of poultry and education of the ryots in modern methods of breeding, rearing, feeding, management and disease control. The breeding aspect is the pure breeding of the exotic variety and the improvement of local breeds of poultry by grading with superior strains of exotic breeds. Pure breeding of exotic varieties is done at the poultry farms at Madras, Hosur and Orthanad, where the breeds of White Leghorn and Rhode Island Red are bred in large numbers so that apart from increasing the initial stock at these farms, surplus cockerels of the above exotic breeds could be distributed in rural areas for grading up the local non-descript varieties. Under the All-India Poultry Development Scheme as per the Second Plan, 28 Poultry Extension Centres have been established in this State till now. These centres are developed mostly in the community development areas. In each centre either White Leghorn or Rhode Island Red with a nucleus breeding stock of 100 birds are placed initially with the object of supplying breeding stock of exotic breeds and also to supply eggs for hatching purposes in the Community Development areas.

Another important feature of the All-India Poultry Development Scheme is to give subsidy for the provision of wire-netting to selected agriculturists for poultry development work, so as to protect their birds from wild animals. Till now 138 ryots have been subsidised at the rate of Rs. 50 per head. Training of farmers in practical poultry keeping for a period of six weeks with a stipend of Rs. 30 per mensem per farmer was given as per the All-India Poultry Development Scheme and so far 253 persons have been trained.

Another scheme under the Second Plan is the payment of subsidy of Rs. 850 each to poultry breeders towards the purchase of wire-netting and incubator and also for the sale of birds and eggs produced at private poultry farms maintained by them with exotic varieties. The intention of the scheme is to provide incentive to poultry breeders to take up poultry breeding on a large scale. Fifty-six poultry breeders were subsidised under the scheme till 1959–60.

Indigenous Variety.

The indigenous non-descript variety of poultry is of poor quality and it may not be possible to eliminate them completely by replacing them with exotic varieties. It has become necessary to grade up the local variety with the exotic breeds. Accordingly poultry improvement in selected key village areas is undertaken by removing all the indigenous cocks in that area and replacing them with exotic ones, so that the upgrading of village poultry may be done up to the seventh generation. During the Second Plan period, 20 such poultry centres have been estalished in the key village areas and are progressing well.

In addition, private poultry breeders who are having large-scale production of exotic birds and eggs are also given subsidy up to Rs. 3,300, provided that the breeder distributes 200 pure-bred cockerels and 1,000 hatching eggs in the area in a year and also supplies free of cost 10 cocks and 200 hatching eggs to Government National Extension Service areas. This scheme has been put into operation during the Plan period with a view to overcoming the paucity of exotic birds at the Government Poultry Farms and that private poultry breeders may be encouraged to rear poultry of exotic breeds on a large-scale. As per the scheme, three private poultry breeders in this State have been given subsidy to the maximum of Rs. 10,300 so far each year. The Indian Council of Agricultural Research has also sponsored poultry development schemes in this State to be run at Agricultural Institute, Katpadi, and Y.M.C.A., Marthandam. Under these schemes each institution should supply the State 20,000 White Leghorn chicken. These schemes are sponsored to supplement the requirements of exotic breeds in this State.

The Third Five-Year Plan provides a sum of Rs. 352·25 lakhs for Animal Husbandry Development work in this State. The progress achieved in the sphere of livestock development work during the First and Second Plan periods will be consolidated and the work further accelerated during the Third Plan period.

Higher Education—A Progress Report

The expansion of higher educational facilities has been remarkable in India in the years since Independence. The number of universities has gone up to 40 as against 18 in undivided India before the War (two of which are now in Pakistan).

There are, besides, the Indian Institute of Science, Bangalore, and the Indian Agricultural Research Institute, New Delhi, which have the status of universities. Degrees and diplomas awarded by institutions like the Jamia Millia Islamia, New Delhi, the Kashi Vidyapeeth, Varanasi and the Gurukal institution near Hardwar are recognized by the Union Government as equivalent to the corresponding degrees and diplomas of a university.

The number of colleges is over 1,000 and the strength of students is in the neighbourhood of 9 lakhs. Among the Commonwealth countries, India has the largest number of universities as well as the largest number of students on their rolls.

The rapid growth of higher educational institutions and the number of students is illustrated by the fact that the proportion of university students to the total population in India is about the same as in the United Kingdom.

The proportion of students taking science subjects to the total number of students, which is now about 30 per cent, is proposed to be raised to 40 per cent in the Third Plan by provision of additional facilities.

More money spent

The expenditure on university education (as on education at other levels) has been rising. From Rs. 15 crores in the First Plan the outlay increased to Rs. 44 crores in the Second Plan and will go up to Rs. 75 crores in the Third out of a total provision of Rs. 500 crores on educational development plans.

A large majority of the Indian universities are of the affiliating and teaching type. There are a few residential and teaching universities as well as some specialized universities for subjects like engineering, Sanskrit and music.

India is among the few countries with a women's university—the S.N.D.T. University, Bombay—which lays emphasis on the teaching of subjects like home making, and child dance.

In 1958–59, nearly 1·2 lakh women were enrolled different universities, about 15 per cent of the to number, of students.

While the number of those seeking university educati is growing and facilities have been expanded, increasi emphasis is being laid on the maintenance of high acaden standards.

This problem has been kept under constant study Government, educationists and the Universitiy Grar Commission, set up under an Act of Parliament.

The Commission, besides distributing assistance universities and colleges from funds placed at its dispo by the Central Government, initiates measures and propos to improve the quality of education.

More facilities

Among the measures introduced are :

The three-year degree course which provides a unbroken period of university instruction and a compa and integrated course for the graduate's degree, increase

The healthy spirit of competition that prevails among tl blocks in Chingleput district was very much in evidence duri the Inter-block Sports held recently at St. Thomas Moun The meet was well contested. In the picture, Sri D. Krishna Superintendent of Police who distributed prizes, is seen givir away a farm implement to the lender of one of the winnir teams.





An incident in the Pole vault events during the Inter-block Sports of Chingleput district.

facilities for libraries and laboratories, increased salaries for teachers, provision of more students' hostels and housing facilities for teachers, institution of merit and research scholarships and holding of seminars and discussions for improvement in standards of teaching.

Subsidies are given to State Government and educational institutions for raising teachers' pay scales up to the standards prescribed by the University Grants Commission. The Commission also provides funds to universities for development purposes.

It is now being increasingly felt that minimum standards should be laid down for admission of students to institutions of higher learning while incentives and assistance are provided to the talented for pursuit of their studies. More provision is being made in the Third Plan for merit scholarships and research fellowships.

During the Third Plan, it is proposed to start evening colleges and institute correspondence courses for the convenience of those who cannot attend day classes or keep regular terms. It is proposed to provide facilities for 60,000 students during the Plan period.

March 22 marked the commencement of the year—Saka 1883—according to the uniform National Calendar introduced four years ago.

This calendar, called the Rashtriya Panchang, is based on sound scientific calculations and adopts the tropical year (the year of seasons) as the length of the year.

There is a great deal of diversity in the traditional Panchangs in India which differ from each other in many respects like the beginning of the year, the first day of the month, names of the months and sometimes the time of the occurrence of the same astronomical phenomena.

There are over 30 traditional Panchangs which are followed in different parts of the country.

The traditional Panchang year is 23·8 minutes longer than the time taken by the sun in its successive passages through the same equinox, which should really constitute the correct length of the year.

In 1952, the Government of India set up a Calendar Reforms Committee to bring about a scientific and uniform system of calendar calculations throughout the country.

Acting on the recommendations of the Committee, on which were responsible leading scientists, the Rashtriya Panchang was introduced on March 22, 1957, corresponding to the 1st of Chaitra, 1879 of the Saka era.

The year according to the National Calendar begins on the day following the vernal equinox, i.e., March 22 in a normal year and March 21 in a leap year.

The number of days in different months is fixed except that in the leap year the duration of the first month Chaitra, goes up from 30 to 31.

The National Calendar is being brought into increasing use, simultaneously with the Gregorian calendar, for a number of official purposes.

Motor Cycles and Scooters

The question of licensing some more units for the manufacture of motor cycles and scooters is at present under the Union Government's consideration. As against the target of 11,000 scooters and motor cycles to be manufactured during the Second Plan, more than 17,000 had actually been produced. It was estimated that demand for these would increase to about 60,000 by the end of the Third Plan.

Employment Market Research

Soon this State will be undertaking a State-wide programme to analyse and explain forms of work in Labour Market operations. Labour marketing is a complex process. It is a process by which supplies of a particular type of labour and the demand therefore are balanced or seek to attain a balance; it is a process whereby buyers of and sellers of specific services bargain and gain satisfaction; it is a process that may take place in a small town, in a large city, in a whole region, perhaps in a wider area. The area in which the process takes place is described as the Employment Market for that particular type of labour.

Employment Market Research, as a scientific study is of recent origin. It has changed attitudes and skills, introduced new techniques and technology. Till recently supply and demand in the field of labour were caused by economic and industrial drifts rather than predetermined and planned action. It is now recognized that employment planning can be reasonably foreseen as the offering and hiring of labour in a given area at a given time follow certain known patterns of movement.

Labour Functions

Little is known of "Labour Functions" such as "finding jobs, creating jobs, changing jobs and doing a good job." The totality of these functions constitute the employment market an understanding of which is necessary for successful manpower planning and "placement". The demand for and supply of labour cause buying and selling of labour in local labour markets. The regional or national markets are but the aggregates of these innumerable local markets all over the country and the aggregative summaries of these may not be typical of any of the local markets. The reason for budgeting manpower at local levels is that most of the labour marketing, of supply and demand, is localised. Local supplies and demands, shortages and surpluses, growth or decline of the labour force, the changing rate of labour participation, local customs, conventions, rules, educational programmes and other functions in the movement of the labour force and employment are significant factors that make the local market. There is thus, a need for a thorough understanding of local markets, without which national generalizations will be vague and pointless.

For sometime such a programme has been in force in the State under the auspices of the National Employment Service. Designed to help the best possible utilization of the available manpower resources within the scale of social and economic values of the Nation, the enquiry covers the entire public sector establishments and the private establishments with 5 or more employees in the State at quarterly intervals. On the basis of an employers' register, which should be maintained up-to-date from time to time, the employers will be asked to report on a simple form the employment under them. These data are analysed by industries and by occupations. The analysis would help in the correct appreciation of the local employment market, their problems and their promise.

The Employment Market Information Scheme was launched in March 1958 and at its inception, it covered the entire public sector of the State and in Coimbatore district alone, the private sector as well. The scheme was extended in June 1960 to cover the private sector in five additional districts, viz., North Arcot, Salem, Tiruchirappalli, Thanjavur and Madurai. The public and private sectors in the entire State will be covered under this programme shortly.

Extent of employment

The extent of employment in the public sector increased from 4·37 lakhs as reported by 2,002 establishments in June 1958 to 5·73 lakhs in 2,523 establishments in June 1960, registering an increase of 1·36 lakhs. The total volume of employment in the private sector in Coimbatore district stood at 1·34 lakhs at the end of June 1960 as against the total of 1·19 lakhs at the end of June 1958. In the five districts which came under the scope of the scheme in June 1960, 8,027 establishments in the private sector reported a nominal increase of 2,000 persons—the level of employment at the end of June 1960 being 1·90 lakhs as against 1·88 lakhs in March 1960.

The National Labour Market is the product of all the innumerable local employment markets all over the entire country. These markets, are the economic focal points of the country. The programme of labour market research is to conduct these baseline studies—to seek answers to its riddles. The range of use to which these studies can be put is varied. To mention a few, this information is of use to authorities connected with the Industries (Regulation and Control) Act, vocational preparation of youth guidance and counselling programmes, labour and wage administration and social welfare measures. In this techno-economic study of the labour market, employers are invited now to participate for better work-plans and a better economy.

The Problem of Soil Conservation

The fury of the forces of nature—torrential rains, floods, winds and the waves of the sea combine with man's short-sighted cutting of trees, over-grazing of grass lands, insufficient drainage or improper land use and pose a continuous threat to the very base of cultivation and the source of food, the top soil of agricultural land. Cultivable soil is constantly encroached upon by one or the other of these forces which render hundreds of thousands of acres every year out of use.

An estimated 25 per cent of the total area in India is in urgent need of soil conservation, or in other words, the adoption of measures which will protect the soil against the action of such destructive forces. Experts say that some 200 million acres are exposed to the hazards of wind or water erosion. As the rain comes pouring down on exposed areas, the run-off damages cultivated lands. As a result, an appreciable portion of good land is becoming sub-marginal and a portion of the sub-marginal land is going out of production. The sea waves dashing against the sandy shores also nibble away precious land along the coast. The Kerala seashore is particularly vulnerable, as the high cliffs of the Western Ghats lie about 10 to 20 miles away from the coast, leaving a strip of 4,500 square miles—most of it endowed with loamy top-soil that renders it extremely fertile—to the mercy of the waves Stabilization of drifting sand from desert areas is another big problem.

The State's interest in the welfare of the Scheduled Castes has been uniformly notable. Recently also the Chief Minister distributed tools and appliances to Scheduled Caste members at a special function organized in the Rajaji Hall. In the picture the Chief Minister is seen giving away a present to a lady member.



War against erosion

A constant struggle is being waged against such onslaughts of Nature. Steady efforts are being made to protect and reclaim the soil which may otherwise be irrecoverably lost. Use of land according to its capacity, constant protection and enrichment of soil and a war against erosion are the cardinal features of soil conservation plans in India. From a modest start in the first Five-Year Plan, with a provision for Rs. 3·25 crores for soil conservation programmes (mainly spent on contour bunding on agricultural land), the expenditure on different soil conservation schemes is expected to rise to over Rs. 70 crores during the next five years. Besides, contour bunding, afforestation, research training and soil survey, emphasis will also be laid on improvement of dry farming practices, pasture development, ravine reclamation and reclamation of saline and alkaline soil. An area of 21·6 million acres is expected to be covered under the programme during the Third Plan. Beside 28·16 million acres will be surveyed and training provided to 300 officers and agricultural extension workers.

While actual soil conservation work is the responsibility of the State Governments, the Central Soil Conservation Board, under the Union Ministry of Food and Agriculture, carries out all-India soil and land use surveys, research and demonstration and training of technical officers. By the end of the Second Plan period, standard soil surveys would be completed on 12·5 million acres. For carrying out research and demonstration in soil conservation methods, centres have been set up at Dehra Dun, Ootacamund, Kotah, Agra, Chandigarh, Vasad, Bellary and Chatra, besides the Central Arid Zone Research Institute, at Jodhpur. During the Second Plan, about 2·27 million acres have been reclaimed by soil conservation treatment in different States. In the desert areas, stabilization of drifting sand is being tackled through a programme of afforestation and development of grass land.

Third Plan schemes

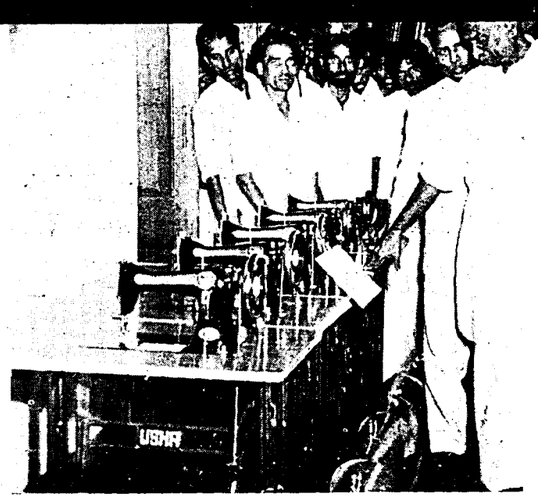
During the Third Plan, 7·5 and 10 million acres would be covered by contour bunding. The cost may be about Rs. 4 crores. Nearly 7 lakh acres are proposed for afforestation and pasture development. It is proposed to introduce dry farming techniques over some 22 million acres. To control ravines which eat into productive lands along the river banks and create other problems of maldistribution of water and soil resources, a big programme of pasture development and afforestation has been planned.

Another source for increasing food production is reclamation of lands that have gone out of cultivation due to salinity and alkalinity. About 4·30 lakh acres are proposed to be reclaimed at a cost of about Rs. 7 crores. It is expected that by the end of 1966, a complete inventory of lands would be made and varied types of soil mapped out on the basis of a comprehensive integrated programme of survey and research.

Catchment Areas

The Government have also launched a drive for soil conservation in catchment areas of river valley projects throughout the country. Soil conservation in these areas is particularly important, because it will reduce to the minimum the movement of silt into the reservoir created by the dams, thus greatly lengthening their useful life. This will also lead to a significant increase in the total benefits of irrigation, power and flood control, conferred by these costly dams. In the Third Plan, Rs. 11 crores will be spent for soil conservation measures in the river valley project as a Centrally sponsored programme.

The Arabian sea becomes destructive in June and July when the monsoon breaks out. Incessant sea waves, choppy and high, dash against the sandy shores and knock away precious land in Kerala. The sea also makes inroads into the interior waterways of the State, formed by the inte connection of lakes and lagoons. Spilling into the lc lands, about 2 to 7 feet below the main sea level, the s water creates salinity in the backwater, which damag crops and plantations. For stemming the onslaught the sea, a comprehensive programme of anti-erosion wor has been undertaken including the building of sea wa and groynes on the Kerala coastline. The enthusias and speed with which these works are being construct hold out a fair promise that ere long the Kerala coast a its rich land would be safeguarded against onslaught fr the mighty Arabian sea. The fight against the onslaug of Nature has to be continuous if soil is to be sav effectively from erosion.



The Chief Minister inspecting sewing machines intended as gifts for Scheduled Caste members.

Indo-Swiss Centre for Training Precision Mechanics

An agreement was signed in New Delhi recently for the establishment and operation of an Indo-Swiss Centre for training precision mechanics in the fields of instrumentation. The centre will be part of the Central Scientific Instruments Organisations and will offer a three-year course to apprentices recruited from all over India. Under the agreement the Swiss Foundation of Technical Assistance will provide at a total cost of over six million Swiss francs equipment and service of experts to the Council of Scientific and Industrial Research. The training centre will also provide consultative and advisory service to Indian instruments industry and may undertake production of selected instruments to help in its training programme.

State Transport in 1960-61

Sri R. THIRUMALAI, *Additional Secretary to Government.*

The nationalised passenger bus service in the State of Madras entered the fourteenth year in 1960. Briefly, the results of the working of the department are as follows :—

Year.	Capital at Charge. Opening Balance.	Addition during the year.	Closing Balance.	Gross Revenue.
(1)	(2)	(3)	(4)	(5)
		(Rs. in lakhs.)		
1959—60	301.84	66.24	442.83	266.53
1960—61 (Estimated)	368.08	74.75	368.08	326.93

Year.	Gross Expenditure.	Net Revenue.	Appropriation towards passenger Amenities Fund Depreciation Reserve Fund and Development Fund.	Net Profit.
	(6)	(7)	(8)	(9)
		(Rs. in lakhs.)		
1959—60	201.70	64.83	37.73	27.10
1960—61 (Estimated)	232.90	94.03	74.59	19.44

Reserve of the undertaking.—(*a*) The Depreciation Reserve Fund provides a reserve sufficient to meet the cost of renewals and replacements of all wasting assets of the department or part thereof, necessitated by normal wear and tear. The estimated balance at credit of the Fund on 31st March 1961 was Rs. 180·39 lakhs. (*b*) With a view to provide amenities to the passengers, such as provision of canteen, rest sheds, fans, water coolers, etc., the Government have constituted during the year a "Passenger Amenities Fund" with an initial contribution of Rs. 3 lakhs and the annual contribution will be at the rate of 5 per cent of the net revenues. It will be administered in consultation with an Advisory Committee of which the Director, Madras State Transport Department, will be the Chairman. (*c*) The Government have created Development Fund with an initial investment of Rs. 21 lakhs in order to meet the capital expenditure of the department without having the need to depend on the general revenues of the State. The contribution to the Fund will be annually at one-third of the net revenue of the undertaking.

There has been an overall improvement in the working of the State Transport undertaking as can be seen from the statements below :—

I

Year.	Total number of vehicles at the beginning of the year.	Additions during the year. Replaced.	New.	Total at the end of the year.
(1)	(2)	(3)	(4)	(5)
1959-60	553	114	10	563
1960-61	563	24	133	696

Year.	Number of passengers carried.	Mileage.	Collection.
	(6)	(7)	(8)
1959-60	157,556,011	17.286,150	2,26,94,590
1960-61	146,401,024*	16,879,843*	2,18,79,833*

* up to 31st January 1961.

II

Year.	Number of bodies constructed at the departmental workshop.	Bodies constructed by private firms.	Total.
(1)	(2)	(3)	(4)
1959—60	82	..	82
1960—61	97	65* (includes 22 luxury coaches)	162

The capacity of the departmental workshop at Chromepet with its increased staff was utilized to the full and as the entire number of new vehicles were to be built in the year itself, orders were placed with private firms. One hundred and fifty chassis have been ordered to be purchased for 1961-62.

III

Strength of the workers in the department:—

(a) Technical staff	1,780
(b) Traffic staff (inclusive of supervisory staff).	3,117

There was an increase of 510 in technical staff and 423 Traffic staff during the year.

ditional services and routes

)uring the year 1960-61, the following suburban routes 'e nationalized :—

(1) Route No. 58—Mint to Sholavaram.
(2) ,, No. 61—Broadway to Avadi R.S.
(3) ,, No. 62—Perambur to Ambattur.
(4) ,, No. 64—Broadway to Meppur.

he number of uneconomic routes run in the City and ırban services is 42, and the policy of the Government continue to run these routes for the convenience of the lic. Six relief services run during specified peak hours ' been converted to all day services. In addition the wing new routes were opened in the City :—

(1) Route No. 11-D—Mount Road to T. Nagar.
(2) ,, No. 15-A—Tayler's Road to Parrys.
(3) ,, No. 15-E—Central to Aminjikarai.
(4) ,, No. 7-G—Pattalam to Parrys.
(5) ,, No. 23-B—Egmore to Mylapore.
(6) ,, No. 25-A—Mount Road to Kodambakkam Railway Station.

The following long distance routes were operated in addition to the Madras-Bangalore Express Services :—

(1) Route No. 103—Madras to Tiruchirappalli.
(2) ,, No. 105—Madras to Salem via Ulundurpet.
(3) ,, No. 105—Madras to Salem via Tirukoilur.
(4) ,, No. 113—Madras to Thanjavur.

(5) Nagercoil to Tiruchirappalli via Tiruchirappalli, Koilpatti and Madurai.

(6) Nagercoil to Tiruchirappalli via Tirunelveli, Tuticorin and Madurai.

(7) Nagercoil to Coimbatore via Tirunelveli, Koilpatti, Madurai, Dindigul and Palni.

The coaches of long distance routes are of luxury type, specially designed and constructed in the departmental workshop at Chromepet to provide greater comfort to passengers. The long distance services are much appreciated by the public, especially the comforts in the luxury coaches. The present policy of the Government is not to take over new short distance routes, but long distance routes of over 120 miles, for which there are adequate traffic prospects, will be operated increasingly.

Reconditioning Unit

A separate Reconditioning Unit was set up in the departmental workshop at Chromepet to reclaim worn-out spare parts. The depot at Tondiarpet is under construction. Steps are being taken to locate another depot in South Madras. With the opening of these depots, it will be possible to constitute viable units for maintenance and operation and the dead mileage will be reduced.

The construction of the Ranithottam workshop in the Kanyakumari Branch has been completed and it will be commissioned after it is electrified and all the machinery is installed.



The Chief Minister recently opened a colony constructed by the Corporation at Tondiarpet for the use of fishermen. In the picture he is seen with inmates of the colony inside one of the houses.

The Government have been paying keen attention to the welfare of the workers employed in the Madras State Transport system. The Government have passed orders on the recommendation of the Pay Commission rationalizing the pay structure of the different units in the Transport Department.

The traffic staff working in long distance routes are given batta based on mileage and also night halt allowance at the rate of Re. 1 per head for each night spent outside headquarters. Drivers working in Express Services are also paid extra batta of 25 per cent.

Award of gold and silver medals and certificates of merit to the best conductors and drivers in appreciation of their work and recognition of their good conduct was sanctioned.

Housing Colony

An extent of 17·67 acres of poramboke lands in Nemillicherry village in Saidapet taluk has been selected for starting a Housing Colony for the Madras State Transport workers at Chromepet. Lands in Tondiarpet are also under acquisition for construction of a Housing Colony for about 600 workers and 50 supervisory personnel in North Madras. In addition 800 houses in West and North Madras (Vyasarpadi) are proposed to be constructed for the Transport workers during the Third Plan period.

The Government have empowered the Director of Transport to sanction the payment of claims under the Workmen's Compensation Act in respect of the Madras State Transport workers up to a limit of Rs. 1,000 in each case.

An Attendance Bonus Scheme was introduced with effect from 1st October 1960 both for the Madras and the Kanyakumari branches. The workers at Government Central Workshop have however, preferred to continue under the Incentive Bonus Scheme.

The payment of ex-gratia allowance to workers on extraordinary leave undergoing treatment for leprosy and tuberculosis, night duty allowance to technical workers on night shift, and educational and medical concessions were all continued.

Delhi's ' Bal Bhavan'

Delhi's ' Bal Bhavan ', the new buildings of which were recently opened by the Vice-President is a live centre for children who come in their hundreds every evening after their school hours.

The ' hobby rooms ' of the Bal Bhavan are alive with the ecstasy of children—some learning to paint, some engaged seriously in drawing, some making toys, others concentrating on learning music and dance, while the rest make merry on the playground.

The Bal Bhavan is a project of the Union Ministry of Education, managed by a Board consisting of officials and non-officials with Shrimathi Indira Gandhi as Chairman.

"Agmark" Grading of Produce

Sri D. SHANMUGASUNDARAM, *State Marketing Officer.*

Grading of produce is one of the fundamental principles of better marketing. It creates the necessary confidence for the purchaser to buy the quality he wants and the seller to have a large turn-over, besides better returns. The Government of India, in order to provide recognised grade specifications for the Agricultural and Animal Husbandry Products, passed the Agricultural Produce (Grading and Marking) Act, 1937, and authorised the Agricultural Marketing Adviser to prescribe grade standards for different types and varieties. The grade specifications are prescribed on the basis of analytical results of representative samples of important commercial types from distributing, assembling and consuming markets and in consultation with the trade interests. These specifications are subject to revision to keep pace with the changing trends in trade. Commodities graded under such specifications are called " Agmark" products, connoting that they are graded under " Agricultural Marketing " standards fixed.

Purity Guaranteed

" Agmark " products stand guaranteed for purity, freshness and standard quality. They enable quotations being given for the different standard grades. Being an All-India standard fixed under statutory powers, the commodities graded under " Agmark " label command better sales throughout India and abroad. It is for the producers to make use of this institution of " Agmark " labelling of produce and derive all the benefits for themselves.

" Agmark " specifications are already fixed for more than 115 agricultural products. The important commodities graded at present under " Agmark " standards, in Madras State for internal consumption are : Rice (Parboiled and Raw) ; Ghee ; Butter ; Gingelly oil ; Groundnut oil ; Hen Eggs ; Sugarcane Jaggery ; Potatoes and Sathukudi Oranges. Arrangements are being made to grade more commodities like Coconut oil, Castor oil, Duck Eggs, Kamala Oranges, Mangoes, Atta, Cotton and Honey. The commodities Agmarked for export are : Tobacco, Sunnhemp, Essential Oils (Sandalwood and Lemongrass oils), Wool and Pig Bristles. More commodities like Pepper, Ginger, Cardamom, hides and skins, tanned leather, Kapok, handpicked groundnuts, vegetable oils and myrobalams, which are exported can be graded and sent.

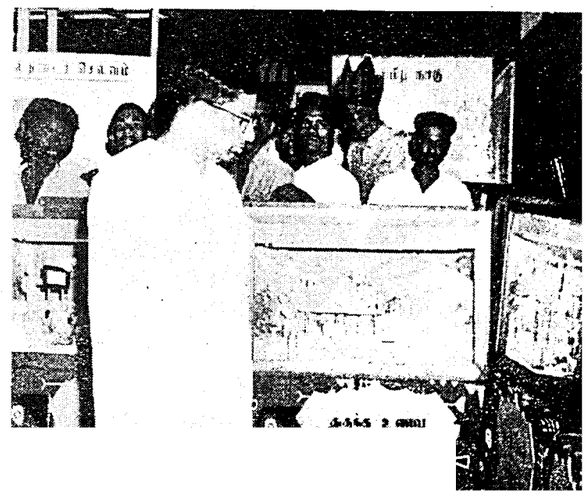
Grading is voluntary in the case of commodities consumed within our country. Compulsory grading in respect of foreign exported articles is enforced, by the issue of notification under section 19 of the Sea Customs Act, 1878.

Grading Basis

Rice is graded according to the refractions like foreign matter (stones, mud balls) brokens and admixture with other varieties. Potatoes and Sathukudi Oranges are graded according to size. Eggs and mangoes are graded according to weight. Jaggery is graded according to colour. Ghee and edible oils are graded according to their physical and chemical constants. Thus the various articles are graded according to weight, size, refractions and purity.

Traders desirous of grading their produce under Agmark specifications should apply in the prescribed form to the Agricultural Marketing Adviser through the Regional Assistant Marketing Officer and the State Marketing

The Plan Publicity Week is celebrated by the Government annually to explain to the people Plan achievements and a house Plan consciousness among them. This year's celebrations were inaugurated by the Finance Minister recently at a special function arranged inside the compound of the Sir Theagaraja College in the City. In the picture, the Minister is seen witnessing exhibits inside the Exhibition arranged in connection with the week.





A scene from the Tamil drama 'Mangalathin Manbu' arranged in connection with Plan Publicity Week.

Officer. Based on favourable enquiries, the applicant would be recommended to the Agricultural Marketing Adviser for the issue of the certificate of authorisation. The Agricultural Marketing Adviser issues a certificate of authorisation normally for a period of one year and gives detailed instructions to the packers regarding the equipment necessary for grading, the accounts to be kept and furnished periodically and supplies the Agmark labels, punch and load seals necessary. Only on the receipt of authorisation can a trader start grading under "Agmark" specifications. The certificate of authorisation has to be renewed every year, by sending it through the State Marketing Officer to the Agricultural Marketing Adviser with an application for the same in the prescribed form.

The officers of the Marketing Section of the Agricultural Department whose addresses are given below, can be contacted for further information and guidance regarding "Agmark" grading of produce.

State Marketing Officer, 12-A, Ritchie street, Mount Road, Madras.

Assistant Marketing Officer (Grading), 12-A, Ritchie street, Mount Road, Madras-2.

Assistant Marketing Officer, 9, Pudur Maidan, Puthur Post, Tiruchirappalli.

Assistant Marketing Officer (Madurai) No. 20, Jawahar 4th street, Gandhinagar, Thallakulam P.O., Madurai-2.

Marketing Assistant (Chingleput), c/o The District Agricultural Officer, Chingleput.

Marketing Assistant (Vellore), 18-A, Chokia Vaithiyar street, Vellore, North Arcot district.

Marketing Assistant (Thanjavur) (for Thanjavur and South Arcot districts), 7/50, Chinnaiyan Palayam Road, Manambuchavadi, Thanjavur district.

Marketing Assistant (Salem), c/o the District Agricultural Demonstrator, Salem.

Marketing Assistant (Coimbatore) (for Coimbatore and the Nilgiris district), 23/142, Thyagi Kumaran street, Coimbatore.

Marketing Assistant (Virudhunagar) (for Ramanathapuram District), 7/15, Devasthanam Godown street, Virudhunagar.

Marketing Assistant (Tirunelveli), c/o The District Agricultural Officer, Tirunelveli at Palayamcottai.

Marketing Assistant (Nagercoil) (for Kanyakumari district), 20, White House street, Nagercoil, Kanyakumari district.

Laboratories

The grading of edible oils and ghee requires a well equipped laboratory at a cost of about Rs. 12,000 and a recognised chemist for analysis. As this would involve much expenditure beyond the reach of ordinary merchants the Madras Government have started six ghee and oil grading laboratories at Madras, Madurai, Virudhunagar, Coimbatore, Erode and Karur, where the ghee or oil would be tested and graded under "Agmark" specifications on payment of the prescribed fees. A grading laboratory for jaggery grading and other articles like rice, etc., is being fitted up at Vellore. With such facilities, the ghee and oil merchants are enabled to grade their produce, and derive better values for their produce besides assuring themselves that they do not infringe the Prevention of Food Adulteration Act.

The laboratories are situated in the following places :—

(1) State Ghee and Oil Grading Laboratory, 12-A, Ritchie street, Mount Road, Madras-2.

(2) State Ghee and Oil Grading Laboratory, 23/142, Thyagi Kumaran street, Coimbatore.

(3) State Ghee and Oil Grading Laboratory, 72, Senniappa Gounder street, Erode.

(4) State Ghee and Oil Grading Laboratory, 3-A, North Pratakshnam Road, Karur, Tiruchirappalli district.

(5) State Ghee and Oil Grading Laboratory, 20, Jawahar 4th street, Gandhinagar, Tallakulam P.O., Madurai-2.

(6) State Ghee and Oil Grading Laboratory, 7/15, Devasthanam Godown street, Virudhunagar, Ramanathapuram district.

(7) Agmark Grading Laboratory, 12-A, Chokia Vaithyar street, Vellore, North Arcot district.

Milk production and progress in Madras

MD. ABDUL HAFEEZ, *Joint Registrar of Co-operative Societies.*

Madras State has a bovine population of 145·6 lakhs as per the last census, of which 43·3 lakhs are milch animals, both cows and buffaloes. Milch animals are owned and maintained not only by the agriculturists who follow dairying as a side occupation but also by professional milkmen and individual dairies. The milk output through these sources cannot be said to be handled in a scientific manner. It is with a view to organising milk production in the proper way through institutional channels that milk supply co-operatives have been formed, into which both agriculturists as well as milkmen are drawn as members. These organisations are essentially producers' societies intended to assist producers of milk in the best manner possible so as to enable them to earn a decent margin of income and at the same time provide pure and unadulterated milk to the consumers.

In Madras State, milk co-operatives have made marked advance. Almost all municipal areas and major panchayats in the State have been covered by milk co-operatives and at least a fifth of the milk requirements of the consumers is being met by these co-operatives. We have at present 878 milk supply societies and 21 milk supply unions working in the State serving both producers as well as consumers. There is growing demand for the formation of these co-operatives in more areas and efforts are being continued to establish more such societies and also expand the activities of existing ones. Milk production through these societies which stood at the level of 38,800 Madras measures (155,200 lb.) per day in 1956 increased to 62,513 Madras measures (250,052 lb.) per day in March 1961. There is vast scope for tapping more milk pockets for augmenting milk production and with effective planning and organisation, it should be possible to achieve this.

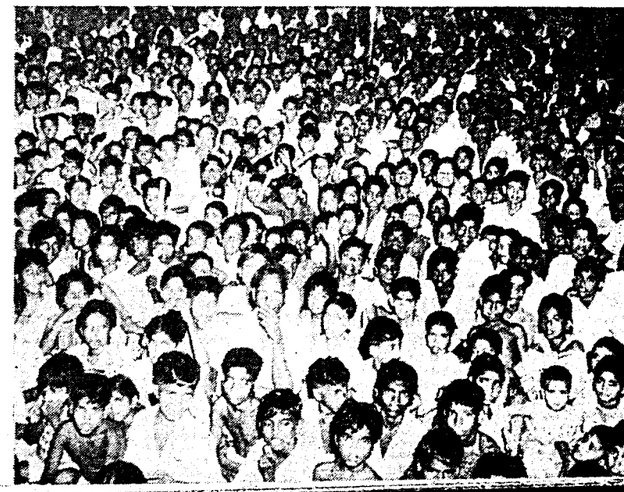
Common Milking

The most remarkable feature of co-operative dairying is "Common Milking.' This system of milking the animals of the members of the societies at a common yard under the supervision of the Directors of the societies has a distinct advantage and ensures the production and supply of pure and unadulterated milk. At present every society owns or rents a site and puts up a milking shed to facilitate "Common Milking". With sufficient financial aid, by way of loan and subsidy, the societies could purchase suitable sites straightaway and put up pucca milking sheds. This would also improve the hygienic handling of the milk produced. The milk collected by the societies from their members is tested and distributed to consumers in sealed cans or bottles or sent to the Urban Milk Supply Unions for distribution.

Increasing Production

With a view to help increased production, members of co-operatives are provided with needed credit accommodation either through Government loans or Reserve Bank loans or District Central Bank loans for the purchase of milch animals. The ordinary loan limit of Rs. 250 per individual is also relaxed up to Rs. 1,000 to enable members to go in for high-breed milch animals with high milk yielding capacity. Of late, special attention to improving the breed with greater milking capacity, is being given and with the supply of pure-breed female stock to members in selected areas in the neighbourhood of the Cattle Breeding Societies now working in the State, the future strain of milch animals would also be improved. Selective breeding, with greater attention to milking capacity, is being tried in the areas of the Cattle Breeding Societies. Besides improved breeding, improved feeding of the milch animals is being given equal attention. At seven centres

A view of the large audience that witnessed the Plan Publicity Drama.





The Finance Minister presenting a set of books to one of the winners in the Oratorical contests held in connection with Plan Publicity Week.

in the State, Cattle feed manufacturing units have been established for the manufacture and supply of computed cattle feed to the members at reasonable rates. More such centres are proposed to be started all over the State as the existing ones are getting very popular with the cattlemen. A green fodder farm was established under the Second Five-Year Plan for the supply of green grass to milkmen members. More such farms are proposed to be started under the Third Five-Year Plan. Again, the provision of salvage facilities to cattle owners during dry periods of the milch animals has encouraged them to preserve their animals instead of disposing them of soon after the initial lactation. There are five Salvage Farms now functioning in the State, one of them run by the Madras Co-operative Milk Supply Union at Vattambedu since 1950, while the other four at Thuvakudi, Abishekapatti, Veerapandi and Virudhunagar were started during the Second Five-Year Plan. Also, these farms now provide salvage facilities for about 525 dry animals every year at a reasonable cost. Under the Third Five-Year Plan, one more Farm at Thanjavur will be established and the existing Farms would be developed. With these measures, direct and indirect, to step up milk production, the co-operatives in the State have been steadily increasing their units.

Controlling quality

While "Common Milking" ensures production of pure milk at the production and milking centres, it is necessary to ensure its purity at all the subsequent stages of handling till the commodity reaches the door step of the consumer. Soon after the milk is pooled and before it is packed and made ready for despatch, samples of milk are taken and analysed to ensure quality. Again, at the stage of actual distribution, random samples are taken by surprise and analysed to control quality. The Co-operative Department is manned with a staff of 18 Dairy Assistants whose main duty is to ensure the quality of milk while augmenting production. The Co-operative Unions and Societies are also assisted by Government to some extent in maintaining milk testing apparatus to conduct their own tests to check the quality. Under the Co-operative Department, there is also a Central Milk Testing Laboratory working at Madras where milk samples gathered in the city are tested besides conducting confirmatory tests of samples sent from mofussil stations. About 1,095 sample tests are being done by the Departmental staff every month and cases of adulteration noticed are dealt with severely. On the whole, Co-operative Milk has gained a name and popularity throughout the State.

Facilities Needed

While the daily output of milk through the Co-operatives in the State is growing, the facilities available for scientific handling and processing are quite inadequate. Without such facilities, expansion on the production side alone is risky and inadvisable. Hence, the provision of facilities for processing should go hand in hand with increased production. In the field of processing milk, the Madras Co-operative Milk Supply Union was the first to install a pasteurisation plant in 1937. For want of financial aid, the other co-operatives did not take to processing early enough. With the aid and impetus given under the Second Five-Year Plan, the Kodaikanal Co-operative Milk Supply Union was the first to put up a batch pasteuriser of 60 gallons per hour capacity and the Coimbatore Co-operative Milk Supply Union has recently installed a 440 gallons per hour capacity pasteurisation plant together with a chilling station attached to it. The Madras Co-operative Milk Supply Union has also been provided with a chilling station as a feeder to its plant at Madras. Under the Third Five-Year Plan the target set for increased production is 90,000 Madras Measures (360,000 lb.) per day and it is therefore necessary that more towns in the State should be provided with milk processing plants to handle the milk satisfactorily and make it available to the consumers in its perfect form. The Third Five-Year Plan therefore provides for three pasteurisation plants at Madurai, Tiruchirappalli and Thanjavur; the first with 1,000 gallons per hour capacity and the other two with 440 gallons per hour capacity, with a total financial outlay of about Rs. 65 lakhs. With the provision of more funds, it should be possible to establish more such plants in two more important towns like Salem and Vellore.

Milk by-products

It would be ideal if the entire milk produced is marketed in its fluid form. But taking into account, the milk consumption habits of the local people, their standard of living, their purchasing power, etc., as they obtain at esent, it may not be possible always to market the tire production in the fluid form. Surpluses are a normal ture of any Dairy and these will have to be converted o profitable by-products to avert loss to the institutions. is with this end in view that provision has been made the Third Five-Year Plan for the establishment of Butter-*cum*-Milk Powder Factory at a central place ere the milk surpluses of all the co-operative dairies ght be pooled and converted into butter and skimmed lk powder. These have a good market in the country. e production of skimmed milk powder would also help production of toned or low fat milk which could be de available to low income groups at a lower price than ole milk.

uble object

The Dairying Schemes have always before them the double object of improving the income earning capacity of the milkmen producer as well as improving the consumption standards of the common consumer. It is often said that the present low per capita consumption of about 2 to 4 oz. is due to the want of adequate supply of milk in the market. This position is being tackled and with increased milk production in appreciable quantities as indicated above, more milk would be available for consumption and it should be possible to step up the per capita consumption to 6 oz., if not to 8 oz. according to the health standards. Toning of milk would also help the increased consumption of milk by the lower groups in society. It is expected that with adequate provision of funds under the plan, associated with an element of subsidy on an approved pattern, the primary objectives of the Co-operative Dairying Schemes as indicated above would be fulfilled.

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Extension of Tamil to more Government Offices

As a first step towards the change-over from English to Tamil in Government Offices, Tamil was introduced on and from January 14, 1958 in all Government Offices below the level of the District Heads of Offices, which had not been supplied with typewriters. The further implementation of the scheme in the offices up to the level of the District Heads of Offices was held over, till sufficient number of Tamil typewriters with the standardised key-board became available and an adequate number of Government typists were trained to operate these machines with proficiency. After a sufficient number of Tamil typewriters had been acquired and a large number of typists (about 750) had been trained in Tamil typewriting at the Central Training Institute, Madras, the Government introduced Tamil with effect from May 2, 1960, for use in official communications in selected offices in the Revenue Rural Development and Local Administration; Agriculture and Public Works (Irrigation) Departments up to the District level, viz., Offices of the Collectors, Revenue Divisional Offices, Tahsildars, Block Development Offices, the Agricultural Offices, Superintending Engineers a Executive Engineers.

The scheme was introduced in offices up to t District level of certain other departments, viz., t Animal Husbandry, Co-operative, Education, Hin Religious and Charitable Endowments (Administratic Department and Local Administration Departments wi effect from 26th January 1961.

Further extension

The scheme was introduced in some of the other offic up to the District level in Commercial Taxes Departmer Harijan Welfare Department, Fisheries Departmer Registration Department, Police Department, etc., wi effect from the 13th April 1961. In the Offices located the Kanyakumari district and in the Shencottah taluk the Tirunelveli district and in the Gudalur taluk of tl Nilgiris district, Malayalam, could however be used respect of notices published for the information of publi

The centres and offices where the scheme has been introduced with effect from January 26, 1961 are given below :-

Name of Department.	*Name of office.*	
Animal Husbandry Department.	Office of the District Veterinary Officer,	Chingleput.
	Do.	North Arcot.
	Do.	South Arcot.
	Do.	Thanjavur.
	Do.	Nagapattinam.
	Do.	Ariyalur.
	Do.	Tiruchirappalli.
	Do.	Dindigul.
	Do.	Madurai.
	Do.	Ramanathapuram.
	Do.	Tirunelveli.
	Do.	Coimbatore.
	Do.	Salem.
	Do.	Krishnagiri.
	Do.	Erode.
Co-operative Department ..	Office of the Deputy Registrar of Co-operative Societies,	Madras.
	Do.	Chingleput.
	Do.	Cuddalore.
	Do.	Tiruvellur.
	Do.	Vellore (North).
	Do.	Vellore (South).
	Do.	Tirukoilur.
	Do.	Thanjavur
	Do.	Kumbakonam.
	Do.	Madurai.
	Do.	Erode.
c of Department.	*Name of Office.*	
e Department—*cont.*	Office of the Deputy Register of co-operative Societies,	Dindigul.
	Do.	Tiruchirappalli (North).
	Do.	Tiruchirappalli (South).
	Do.	Coimbatore.
	Do.	The Nilgiris.
	Do.	Ramanathapuram.
	Do.	Salem.
	Do.	Tirunelveli.
	Do.	Sivaganga.
	Do.	Dharmapuri.
	Do.	Kanyakumari.
	Do.	Tuticorin.
	Office of the Special Deputy Registrar for Credit and Marketing,	Kancheepuram.
	Do.	Vellore.
	Do.	Cuddalore.
	Do.	Thanjavur.
	Do.	Tirupur.
	Do.	Salem.
	Do.	Madurai.
	Do.	Ootacamund.
	Do.	Tiruchirappalli.
	Do.	Tirunelveli.
	Do.	Srivilliputhur.
	Do.	Tiruvarur.
	Office of the Deputy Registrar for Land Mortgage,	Madurai.
	Do.	Madras.
Department ..	Office of the District Educational Officer,	Madras (South).
	Do.	Madras (North).
	Do.	Chingleput.
	Do.	Thanjavur (East).
	Do.	Thanjavur (West).
	Do.	Dindigul.
	Do.	Madurai.
	Do.	Ramanathapuram.
	Do.	Virudhunagar.
	Do.	Tirunelveli (South).
	Do.	Tirunelveli (Central).
	Do.	Tirunelveli (North).
	Do.	Nagercoil.
	Do.	Villupuram.
	Do.	South Arcot at Cuddalore.
	Do.	Tiruvannamalai.
	Do.	North Arcot at Vellore.
	Do.	Tiruchirappalli.
	Do.	Pudukkottai.
	Do.	Dharmapuri.
	Do.	Salem.
	Do.	Erode.
	Do.	Coimbatore.
	Do.	The Nilgiris.
igious and Charitable ents (Administration) ent.	Office of the Deputy Commissioner for Hindu Religious and Charitable Endowments,	Madras.
	Do.	Madurai.
	Do.	Thanjavur.

Name of Department.	*Name of Office.*	
Hindu Religious and Charitable Endowments(Administation) Department)—*cont.*	Office of the Assistant Commissioner for Hindu Religious and Charitable Endowments,	Madras.
	Do.	Kancheepuram.
	Do.	Cuddalore.
	Do.	Thanjavur.
	Do.	Nagapattinam.
	Do.	Tiruchirappalli.
	Do.	Madurai.
	Do.	Ramanathapuram.
	Do.	Tirunelveli.
	Do.	Coimbatore.
	Do.	Suchindrum.
	Do.	Salem.
Local Administration Department.	Office of the Divisional Panchayat Officer,	Chingleput.
	Do.	Tiruvellur.
	Do.	Saidapet.
	Do.	Tirupattur.
	Do.	Ranipet at Vellore.
	Do.	Arni at Tiruvettipuram.
	Do.	Tiruvannamalai.
	Do.	Tirukoilur.
	Do.	Virudachalam.
	Do.	Chidambaram at Cuddalore.
	Do.	Tindivanam.
	Do.	Kumbakonam.
	Do.	Mayuram.
	Do.	Nagapattinam.
	Do.	Thanjavur.
	Do.	Mannargudi.
	Do.	Pattukkottai.
	Do.	Tiruchirappalli.
	Do.	Karur.
	Do.	Ariyalur.
	Do.	Musiri.
	Do.	Pudukkottai.
	Do.	Dindigul.
	Do.	Usilampatti.
	Do.	Madurai.
	Do.	Sivakasi.
	Do.	Ramanathapuram at Madurai.
	Do.	Devakottai.
	Do.	Tirunelveli.
	Do.	Tuticorin.
	Do.	Koilpatti.
	Do.	Cheranmahadevi.
	Do.	Hosur.
	Do.	Salem.
	Do.	Namakkal.
	Do.	Dharmapuri.
	Do.	Pollachi.
	Do.	Erode.
	Do.	Gobichettipalayam.
	Do.	Coimbatore.
	Do.	Padmanabhapuram at Nagercoil.
	Office of the Personal Assistant to the Collector (Local Administration) and Ex-officio Regional Inspector of Local Boards and Municipal Councils,	Chingleput.
	Do.	North Arcot.

Name of Department.	*Name of Office.*	
Local Administration Department—*cont.*	Office of the Personal Assistant to the Collector (Local Administration) and Ex-officio Regional Inspector of Local Boards and Municipal Councils.	South Arcot.
	Do.	Thanjavur.
	Do.	Tiruchirappalli.
	Do.	Madurai.
	Do.	Salem.
	Do.	Coimbatore.
	Do.	Ramanathapuram.
	Do.	Tirunelveli.

English could be used in the Government offices aforesaid in the preparation of pay bills, contingent bills, stipend bills and other communications addressed to the treasuries and the Accountant-General, Madras, and in all correspondence addressed to the Heads of Departments, State Government and Central Government offices.

Malayalam also could be used in the Government offices aforesaid in the Kanyakumari district and in the Shencottah taluk of the Tirunelveli district and in the Gudalur taluk of the Nilgiris district in respect of any notice published for the information of the public.

Travelling 'Blind' Exhibition

A travelling exhibition demonstrating how Britain cares for her blind population is to be seen in India later this year. It is one of 12 identical exhibitions being sent to more than 50 countries throughout the world during the next two years.

The exhibitions, prepared by the British Council with the help of the blind welfare organizations, each consists of more than 100 photographs showing how blind people in Britain are helped and taught to help themselves.

With the exhibitions will go periodicals in Braille and Moon type and the publications of official and voluntary organizations for the blind.

The exhibitions are intended primarily to show welfare and social workers what can be done for people with no sight, but there is also material of wide general interest.

Why Married Women go out to Work

[With more and more married women both in the State and all over India preferring to work and working even when their families have grown, a study like the one outlined in this article of the reasons why British women go to work should be of interest.]

hat makes a busy housewife add to her work problems
king a job outside the home ? With one in every
of Britain's married women now in paid employment,
question is of more than academic interest. Recently a group of research workers from the social-science department of the London School of Economics conducted an on the spot survey among working wives in an attempt to answer this question.

Sponsored by the department of Scientific and Industrial Research, a Government organization, the survey aimed to examine various aspects of the life of working women in contemporary Britain—Why do women take up paid employment ? How does it affect their home life ? What sort of job do they perform at their place of employment ?

The women chosen for the quiz were not career girls. Two hundred working-class housewives from south-east London, they were all employed in routine factory work by a well-known firm of biscuit-makers. Their responses to the survey have been set out in a preliminary report under the title *Woman, Wife and Worker*.

Most of the working wives said that money was the main reason for their taking a job. But it was not to provide the sheer necessities of life, nor was it for personal pin-money. Most of the women were seeking extra cash to give their families a higher standard of living. Their ideas of a higher standard of living varied. The research workers discovered that a great deal of the extra money was spent on modern furnishing and decoration of the home, buying a television set, providing a more varied diet, and—in some cases—purchasing and running a small car. Clothing also featured on the spending list, but it was clothing for the whole family—not the woman alone. Children with working mothers had more toys and pocket money. Many of the families used Mum's wages to finance the annual holiday.

Family Comes First

Money was not the only reason the women gave for going out to work. Some said they did so for companionship—especially where the husband was away at work all day and the children out at school. As one woman told the research team : " Coming to work keeps me young. "

But in nearly every case, the factory job took second place to the family, and work hours had to fit in with domestic responsibilities. " Work was undertaken as a means of helping the family, not as an escape from it," comments the report. This attitude was recognized by the management of the biscuit firm, and the wives were helped to adjust themselves to their dual role by a labour policy deliberately constructed to attract married women. Part-time work and a choice of shifts enabled the women to cope with factory and



The Governor pinning medal awarded for meritorious service on Arumugham, a Police Head constable.

omestic work with a minimum of upset. Even with this lvantage, however, most of the women depended on odern, easy-to-manage homes and labour-saving devices. he research team also found that the husbands took a uch greater share of domestic responsibility. "In some ses he has been firmly incorporated into the weekly utine of washing and floor-polishing, as well as acting as sitter-in when his wife is on evening shifts," the report tes. But, despite labour-saving devises and help from the sbands, the main burden of coping with home and factory rk still fell upon the women. In most cases, they anaged well—but only because they had developed a ghly disciplined work time-table.

gh Output

At the factory, too, the women did a good job, although the early months of their employment labour turnover dded to be high—a common enough experience with all rkers. After this initial period of instability, the women ttled down into a group of workers with a record of high tput. Says the report : "In many cases the common nception of the part-time married worker as unreliable d a bird of passage was clearly refuted."

Absenteeism was a major problem for the management. tackled this by a careful policy of recruitment and job cation. Women were only employed when it appeared t they could cope with a dual job ; likely absentees were not placed in key positions where their absence would disrupt production patterns, and the choice of shifts was carefully planned to meet most individual needs.

Although based on only a small slice of Britain's Industry, the findings of the research team show that, with give-and-take in the home, a married woman can cope with two jobs, and that careful planning by management can help both the women and firm itself. As the report itself concludes : " What is important, however, is that the management did make a success of this scheme, and in doing so demonstrated the value to industry of the reserve of married women seeking employment."—B.I.S.



A view of the Fishermen's colony at Tondiarpet, constructed by the Corporation

Misuse of State Emblem

The State Emblem of the Indian Union, which consists of the Sarnath Lion Capital of Asoka showing the three lions standing on an abacus which has a Dharma Chakra in the centre, a bull on the right and a horse on the left, can only be used by officials of the Union authorised to do so by the Government of India.

Persons using the State Emblem without being duly authorised to do so by the Government of India render themselves liable to be proceeded against under the Trade Marks Act, 1940, and the Emblems and Names (Prevention of Improper Use) Act, 1950.

Madras Beckons . . . .

* * * *The temples of Madras, nestling against swaying palms, their tall towers standing as sentinels of an ancient civilisation which is very much alive and their huge halls and corridors proclaiming the deftness and dexterity of the sculptor, constitute the centre and source of a cultural and religious tradition which, though it has fitted itself into the changing pattern of modern life and living, yet remains picturesquely distinct.*

* * * *The hill stations of Ooty and Kodaikanal, with their invigorating climate and scenic splendours are ideal for rest and recreation. Their wooded slopes and majestic peaks, their grand waterfalls and picturesque lakes hold the visitors in thrall.*

* * * *Lovers of wild life may get endless thrills through a visit to Mudumalai situated in the Nilgiris. Here they can see elephants and bears, tigers and bisons, etc., in their natural home. Facilities for seeing wild animals are provided to visitors. Vedanthangal near Madras is a bird sanctuary where a visitor can see a variety of birds.*

* * * *Besides these, Madras provides the tourist a variegated fare. All the year round there are fairs and festivals which bring to life stories and traditions, arts and rituals of a long past age which have an allure all their own. They delight, educate and also entertain.*

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Plan Results Speak . . . .

The Village and the Farm are the country's life-lines. It is here that the two Five-Year Plans have produced the most striking results in Madras State.

More than 10,500 villages out of 18,000 villages have been electrified, over a lakh power pumpsets are used in farm operations, every village with over 300 population has a school, many good roads provide links with the outside world. Advice under the Community Development Programme has been availed of in cultivation methods with excellent results.

New industries and factories that have sprung up in neighbouring townships have provided gainful employment to village surplus population.

The peasant in Madras State to-day is happy. There is now a new confidence in his face and a new spring in his gait, thanks to the Plans.

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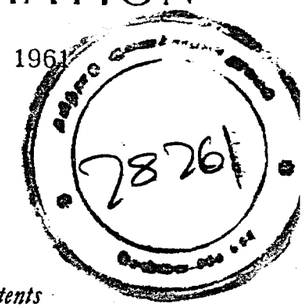
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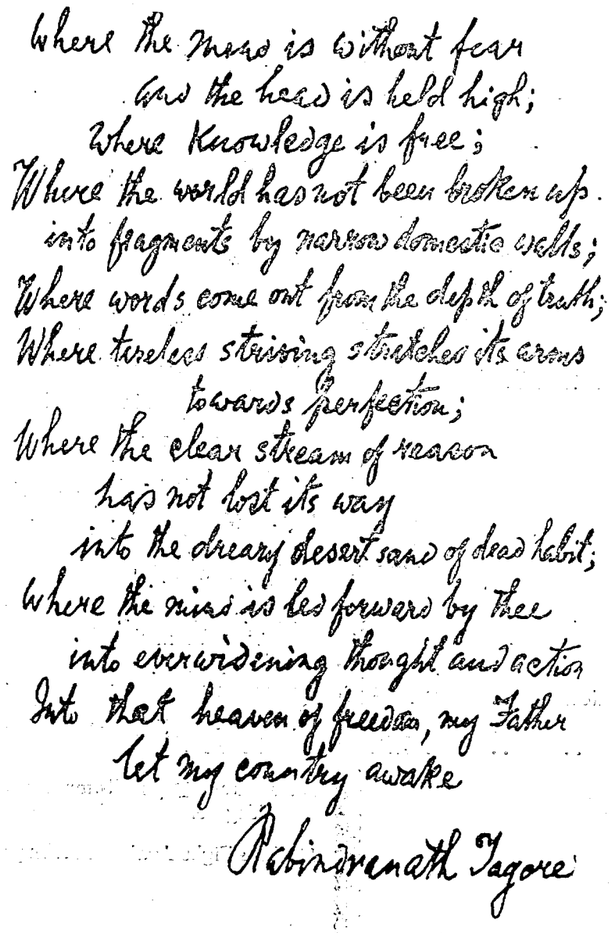


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This month's cover

This issue is dedicated to Rabindranath Tagore, the immortal Poet of India, whose Centenary last month has been celebrated all over India and throughout the world.


Where the mind is without fear
and the head is held high;
Where Knowledge is free;
Where the world has not been broken up
into fragments by narrow domestic walls;
Where words come out from the depth of truth;
Where tireless striving stretches its arms
towards perfection;
Where the clear stream of reason
has not lost its way
into the dreary desert sand of dead habit;
Where the mind is led forward by thee
into ever-widening thought and action
Into that heaven of freedom, my Father
let my country awake
Rabindranath Tagore

The Saga of Rabindranath Tagore

[*Poet, painter, author, dramatist, composer, musician, mystic, saint and seer, there was not a single aspect of the artistic life which the peerless genius of Rabindranath Tagore did not grace and embellish. The first, and so far, the only Asian to be awarded the Nobel Prize for literature, his Centenary in May this year was celebrated in India and all over the world with a wide range of programmes reflecting his many-sided creative personality. In this article, Sri Humayun Kabir, Union Minister for Cultural Affairs, pays a fitting tribute to the life and work of this great son of India*]

The year 1961 marks the centenary of the birth of four great Indians—Rabindranath Tagore, Motilal Nehru, Madan Mohan Malaviya and Profulla Chandra Ray. Each one of them made great contributions to India's national development and they all shared the noble qualities of patriotism, nationalism and humanism. They believed in the freedom and dignity of the individual and held that India's greatest contribution to the world lay in emphasising these human values. Even among these resplendent figures, Rabindranath Tagore stands out as a man of extraordinary genius whose contributions to India and the world are outstanding.

New awakening

Tagore was fortunate in both the time and the place of his birth. The advent of the West had disturbed the placid waters of Indian life and a new awakening was seeping throughout the land. Its initial impact had dazzled the Indian mind and so impressed some of the early reformers that they at times seemed to be blind imitators of the West. By the time Tagore was born, the first uncritical admiration for the West had worn off and there was a more balanced appraisal of the values of the West. Simultaneously, there was increased knowledge and regard for the values of the East. The place of his birth was equally opportune. Bengal had felt the impact of the West earlier and more vividly than perhaps any other part of India, and in Bengal the stirrings of new life were most marked in Calcutta. The meeting of East and West on India's shores was thus for Tagore both a fact and an ideal.

Family circumstances

The circumstances of his family also helped in the flowering of Tagore's genius. Originally from East Bengal, the family became rich and prosperous during the later Mughal days. The prosperity became even greater after the advent of the British. Co-operation with the ruling power brought it status, wealth and culture and also attracted the disapproval of the orthodox. Inter-dining with the Tagore family invited social disapproval, intermarriage, ostracism. Conscious of its wealth and talents (it had already produced three generations of exceptionally able men when Tagore was born) the family reacted with proud unconcern and ignored many of the social taboos of the day.

Moved by deeper values

The family had however for generations been moved by the deeper values of Indian life. Tagore's grandfather was one of the pioneers of Western education and a friend of Raja Rammohan Roy. His father, a deep student of Indian philosophy and Islamic mysticism, began his day with recitations from the Upanishads and Hafiz. Tagore was thus born in a family which was steeped in the traditions of ancient and medieval India and yet responsive to the currents of the modern West. A deeply religious atmosphere free from adherence to forms and rituals created an ideal background for the flowering of his universal mind.

Many-splendoured genius

We can only hint at his many splendoured genius in this account. The world rightly honours Rabindranath Tagore as one of the greatest literary figures in history. His writings include more than one thousand poems and two thousand songs in addition to a large number of short stories, novels, dramatic works and essays on diverse topics. As a writer of lyrics and songs, he has rarely been equalled and perhaps never surpassed. As a short story-writer, his rank is among the first three or four masters of the craft. As a novelist and playwright, he has achieved for himself an honoured place in the world of letters. As a literary critic, he has given evidence of rare insight and deep sympathy with the work of men who differed from him widely in tradition and temperament. It is thus not surprising that his works should be translated into all the major languages of the world and that they should bring joy, solace and strength to countless millions.

The diversity of his literary work is amazing; but literature in its widest sense could not exhaust his energies. He was a musician of the highest order and not only composed songs but set them to music. He started as a traditionalist but very soon the range of his musical composition expanded till it incorporated elements from western music and fused them with his eastern background. With more than two thousand songs that express every nuance of human feeling and every mood of nature in her infinite variety, he is undoubtedly one of the greatest composers and musicians that the world has known.

Creative Painter

Tagore took to painting when he was almost 70 and yet produced within ten years almost 3,000 pictures. They broke sharply from prevailing Indian styles and explored the unconscious and sub-conscious levels of the mind. Some regard his work as a complete breach with the Indian tradition and yet many competent critics have described his as one of the most significant and creative painters of modern India. His affiliation with primitive art on the one hand and with some of the *avant garde* on the other is only one indication of the sweep and range of his genius.

Educational Ideas

Tagore was an artist par excellence, and in addition he made notable contribution to religious and educational thought, to politics and social reform, to moral regeneration and economic reconstruction of India and the world. He not only thought deeply and creatively on all these topics but he also set his hand to realise in practice what he preached. The educational ideas which inspired his school at Santiniketan have deeply influenced all modern educational thought in India. His programmes of economic, social and political reconstruction of the village through the co-operation and self-help of villagers have set the pattern for programmes of reconstruction of national life in contemporary India. He travelled far and wide to restore India's contacts with the outside world and laid the foundation on which free India has based her policy of friendly relations with all peoples of the world.

Universal Man

Tagore's deep feeling for the unity of man made him realise that inter-dependence of peoples and countries rather than their independence must be the principle of life and progress today and tomorrow if the world is to survive the challenge of modern Science and Technology. He was one of the first to recognize and proclaim that the old divisions of nation and race had become outmoded in the modern age. Today the world is one and our sympathies and loyalties must be expanded to recognize this fact. Steeped in the age-old traditions of the East, an inheritor of the rich cultural heritage of ancient and medieval India, he was simultaneously a modernist who welcomed the values proclaimed by the West. In a word, Tagore lived and worked for the realisation of the ideal of Universal Man.

Indian Supersonic Aircraft

India is the first Asian Country and one among the few European countries to make the kind of supersonic fighter aircraft now being designed and developed at the Hindustan Ai[illegible] in Bangalore. The only other countries to develop similar aircraft are the United S[illegible], Soviet Union, the United Kingdom, France and Sweden.

According to a spokesman, the Hindustan Fighter HF-24 incorporates the latest thoughts and practices to enhance its performance according to the most modern standards. It has also the most up-to-date devices to insure maximum safety for a pilot. If something goes wrong with the aircraft when it has attained extreme altitude, a series of automatic operations will enable the pilot to land safely even though he may have become unconscious soon after ejection at a height of 40,000 to 50,000 feet.

HF-24 is a twin-engined aircraft powered with Bristol Orpheus engines. The manufactur of the engine itself will be undertaken at HAL which has already taken up the manufacture of Rolls Royce Dart air engine which will power the first Indian built transport aircraft now being developed at the Air Force Base at Kanpur.

Green Grasses in Cattle Feed

DR. D. PATTABHIRAMAN, *Director of Animal Husbandry*

Cattle management is concerned with the attempt to exploit inherent potentialities in the animals and the greatest factor in their management therefore is feeding. The purpose of maintaining these animals is to obtain from them animal products like meat, milk, etc., which are of considerable use to man. In order to achieve this, in addition to normal maintenance, sufficient quantity of food should be given to the animals.

Animals require optimum nutrition to yield their maximum capacity. It is stated that by better feeding alone, it is possible to increase milk yield by about 50 per cent. The rations fed to animals should be nutritive, palatable and easily assimilable. Apart from concentrates, the requirements of fodder as common feed to animals should be fully utilized. The feed and fodders selected should have nutritive value such as leguminous types. Grazing areas are most essential for improvement of cattle and every breeder should maintain grazing areas in his lands and they should be fenced all round. Instead of reducing grazing areas, they could be improved by proper bunding according to the slopes to conserve rain water, occasional ploughing and sowing of pasture grasses and periodical removing of weeds.

Fodder Development

Under the Key Village Scheme in the State, fodder development work has been undertaken since 1958–59. Six 100-acre improved pasture plots have been established in the livestock farms of this State, from where seeds and seed materials are supplied to the Key Village areas, since the pre-requisite for raising fodder crops is the supply of seeds and seed materials. From these pasture plots seeds like kolukattai, sunhemp, lucerne and grass slips of guinea grass and other nutritive grasses are procured and supplied to the agriculturists at 50 per cent of the cost. The ryots are also encouraged by suitable subsidies to grow fodder crops like sunhemp in compact areas.

Ten acre pasture demonstration plots have been established in 10 Key Village Blocks. These plots have been established in private holdings with proper fencing, bunding, seeding, dividing them into compartments for proper intercultivation. They are to be maintained for 5 years and 50 per cent of the total cost of establishing these demonstration plots, subject to certain conditions, is paid as subsidy.

These demonstration plots serve as models to the ryots in the area for proper maintenance of their pasture. Apart from various items of work already taken up, it is proposed to establish good pastures of 500 acres and to subsidize the cultivation of nutritious fodder crops and grasses like lucerne, berseem, guinea grass, etc., under irrigated conditions.

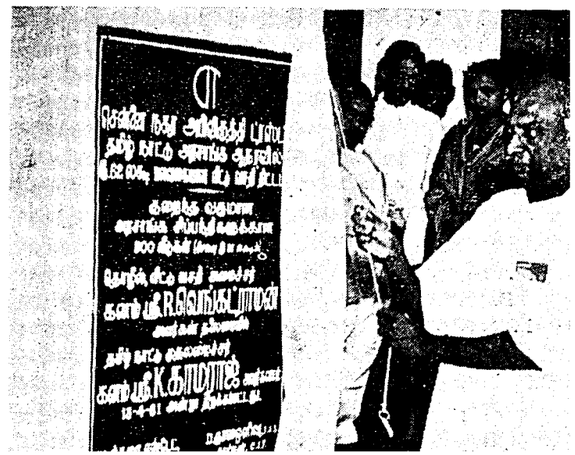
Green Grasses

Green grasses are the best available feed for cattle. They are relished and specially for cows in milk and for growing young stock it is most essential. The cost of feeding with concentrates can be considerably reduced if green grass is made available by a source of constant supply. As greens contain all essential vitamins, if fed to animals in the morning, one can get good quality milk in the evening, since the quality of milk depends upon the feed given to the animal..

For information and adoption cultivation methods of a few grasses are mentioned below :—

Guinea grass: This is a perennial fodder grass which is commonly and abundantly cultivated under irrigated conditions. This thrives well under our climatic conditions unlike other grasses and grows well even in shady parts of land. Coconut gardens, etc., can also be made use of

Chief Minister Kamaraj inaugurated recently the Foreshore colony of houses for Non-gazetted Government Officers at Santhome, opposite Hotel Oceanic.





A section of the large gathering that was present at the inauguration of the Foreshore colony at Santhome.

for cultivation. It grows in height up to 4' and even higher and is not deep rooted. It can be grown both by seeds and slips, but cultivation by slips is the best method.

The land for cultivation of guinea grass should be high level area which can be irrigated and drained easily. It should not be water-logged. Just as for cultivating any crop, the land should be well ploughed in dry condition, manured heavily, i.e., 40 cart-loads of farm yard manure per acre and divided into convenient plots for irrigation. Planting in line 2½' apart will be ideal. Moisture should be made available always by irrigating periodically once in 4 or 7 days. The first cutting will be available after 2½ months and then four more cuttings will be available in a year with an yield of 60,000 lb. to 100,000 lb. annually. When once planted, it can be continued for a number of years.

Periodical Weeding

Periodical weeding, hoeing and manuring of the grass-land is essential. Liquid manure, i.e., fresh cow dung should be diluted during irrigation after each cutting. Under good soil and well irrigated conditions the yield is heavy. Cutting should be close to the ground. Good silage and hay can be made of this grass. Cattle relish it. It is palatable and easily digested. Madurai Municipality has been cultivating this grass for the last 25 years and has been selling it to the public. Other municipalities also cultivate this grass but not on a large scale.

A scheme has been recently taken up by the Madras Corporation for cultivation of fodder grasses under Sewage Irrigation Scheme. Other grasses such as buffalo, manipier and khoden are also cultivated under simliar conditions.

Berseem Clover

Berseem is an annual white-flowered clover introduced into this country from Egypt. Though its native tract is Syria and Egypt, it has adapted admirably well and is now the chief commercial forage crop of Punjab and U.P. At present it is grown in South India at the Livestock Research Station, Hosur Cattle Farm, on a large scale. This crop is pre-eminently suited for irrigated tracts. It is a cold weather rotation crop and like other legumes enriches the soil. It is an annual crop of seven months' duration. The fodder is very rich in protein and is relished by all kinds of livestock. The early sowings of berseem can be carried out from the end of September and continued up to the middle of November. Large quantities of berseem green fodder can be had from the middle of November in four or five cuttings till May. It is good for milch cattle and is found to increase the milk yield.

Green berseem fodder contains up to 2·3 per cent of digestible protein and 10 per cent total digestible nutrient. Work bullocks can be maintained on berseem even when doing hard work and receiving no added concentrates. A small quantity of dry roughage however is advisable. Since it is a leguminous crop it enriches the soil by virtue of the nitrogen fixing bacteria present in the root nodules. It also forms a very good rotation crop with other fodder crops like cholam, maize and teosinte which are raised during the monsoon period.

The right soil

Berseem requires a well-drained loamy soil. It can come up well even in heavy soils, provided there is proper drainage facilities. The land is prepared giving 5 to 6 ploughings on application of 20 cart-loads of cattle manure and 100 lb. of super phosphate per acre. Beds and channels are formed. The seeds are mixed with sand and sown in the beds and covered with hand rake. Then the beds are flooded. The seeds will germinate in a day or two. The seed rate used is 15 to 20 lb. per acre. But in practice a higher seed rate of up to 30 lb. is found to give very good crop. Though the cost of the seed is high it is better to go in for a higher seed rate to secure a good crop return. The seeds are soaked in water for six hours and kept overnight. Then the spro[illegible] sown well in the puddled and levelled plots a[illegible] water and the crop is treated as a garden crop and irriga[illegible] once in six days.

Light irrigation needed

If the crop is to be raised in a new tract, it is necessary to inoculate the soil with berseem bacterial culture at the time of sowing. This culture is availabe from the Agricultural Chemist, Coimbatore. It may be enough to take some soil, say half a bag from plots where berseem is grown and apply it just before sowing in the plots where berseem is to be raised. To start with, it is better to raise the crop in small areas and once the crop is established the area can be increased in subsequent years.

The crop requires constant light irrigation once in five to six days. It does not stand water stagnation. If there is too much moisture, the crop turns yellow and stunted. It is ready for cutting in 60 days after sowing. Subsequent cuttings can be taken up every 25 to 30 days. It may be necessary to give one hand weeding after the first or second cutting. After taking one or two cuttings, application of well-rotted cattle manure in liquid form mixed with irrigation water is found to increase the yield. In all, the crop will give four to five cuttings in a season.

The last cutting

After the last cutting the crop will give as cut only shoots with flower buds and there may not be much of forage. At this stage, the crop should be allowed for setting seed. When the seeds mature, the vines will dry off. Care should be taken to collect the dried vines with flower heads then and there. If they get soaked in rain, the seeds will very easily get germinated. The vines are dried up well and thrashed by passing a roller or beating with sticks. The seeds are cleaned and stored for use in the next season. On an average this crop will give 60,000 lb. per acre in four to five cuttings. In small areas when the crop is raised with proper care, timely irrigation and weeding, it is found to yield as high as one lakh lb. in five cuttings in a season. The cost of cultivation of this crop per acre is about Rs. 200.

Sunhemp

Sunhemp is a leguminous plant, rich in albunicids. Light loamy soil to heavy clay soil with suitable moisture conditions, suits the growth of sunhemp. This is a quick growing plant with a growth phase of two months. Usually in paddy growing areas like Thanjavur district, the only available cattle fodder is paddy straw, which possesses low nutritive value. There is therefore a need to have other suitable supplementary fodder.

It has been found that growing of sunhemp in paddy growing areas after the paddy crop, has been useful. Just before the harvest of paddy, the sunhemp crop can be grown. The seeds are soaked in water overnight, the water is drained the next morning, kept moist till the evening, when they begin to sprout out. The sprouted seeds are sown among the standing crops of paddy, just few days before harvest. The sunhemp crop appears soon after the removal of the paddy crop. The crop comes to flower two months after sowing, when a characteristic aroma is developed which is very much relished by cattle.

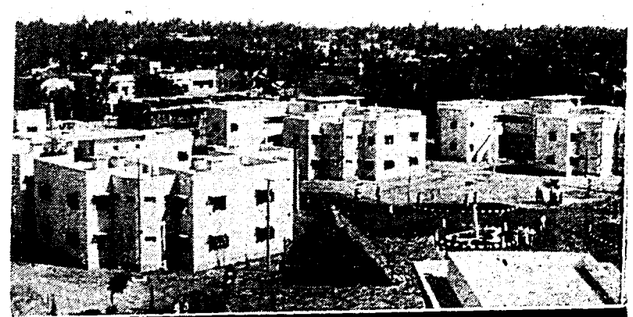
The crop is harvested just when it is in full bloom, before it pods after harvest and after drying, is bundled and stocked with paddy stocks, so that a mild fermentation takes place in the stock. The cattle are fed both sunhemp bundles and paddy straw together. The paddy straw provides the bulk and the sunhemp the nutrients deficient in the paddy straw. The milk yield of animals fed on this mixed feed is well over the yield of animals fed on paddy straw alone. Aroma and the tenderness of this crop feed, increase the palatability. The yield of sunhemp per acre is about 1,500 to 2,000 lb.

Lucerne

Lucerne is a perennial crop. Once cultivated, it continues to produce for a number of years. This crop is believed to be the native of South-Western Asia, where the climate is characterised by cold winters and hot summers. It is also grown successfully under a wide range of climatic conditions indicating a remarkable adaptation to various climates and soils. This has high nutritive value as it contains high percentage of digestible crude protein. This is a very important forage for livestock.

The crop is sown on a medium well-drained soil in the months of October to November in a well prepared fine seed bed in rows of 1 to 1¼ feet apart. As it is difficult to get a good stand it is very necessary that the seed bed is prepared well both before and after sowing. The weed growth should be reduced, as they constitute the enemy for the growth of lucerne. To get high yields, the crop should be allowed to grow and flower and then cut. The subsequent cuttings should also be taken up, when the crop is in the desired stage after about a month. Repeated cuttings at shorter intervals should be avoided. It may be possible to have 1,000 maunds of green forage per acre in 10 cuttings during the year.

A view of the Foreshore colony at Santhome.



Use of New Methods in Agriculture

C. R. SESHADRI, *Joint Director of Agriculture (Planning and Development).*

There is greater realisation now than ever before that the objectives of the Five-Year Development Plans drawn up for the country could be fulfilled only by increasing agricultural production. To ensure proper nutrition to the growing population, provide the raw materials needed for expanding industries and accumulate adequate surplus for export, the production of foodgrains and their essential commodities has to be considerably stepped up.

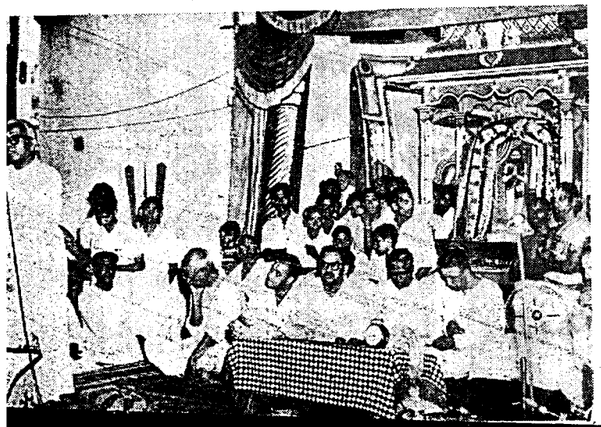
Agricultural production holds the key to the country's progress in all spheres. It is for this reason emphasis has been laid on agricultural development in the Third Plan. Realising that the present rate of increase in agricultural production would not help the country in reaching self-sufficiency within a reasonable time, the Planning Commission has considered it expedient to fix comparatively high targets of production for foodgrains and other important commodities like cotton, oilseeds, sugarcane, coconut, arecanut, cashewnut, etc.

Intensive Cultivation

In recent years, by the adoption of intensive cultivation methods, some of the progressive farmers of this State have practically demonstrated the potentiality for securing very high yields comparable to the best elsewhere. This clearly shows that the present level of yields for most of the important crops could be appreciably increased.

Cultivation, irrigation, manuring, seeds and plant protection play a vital role in increasing crop production and farmers can usefully follow recent research findings and experiences in regard to these aspects in their efforts to secure increased output of crops.

Kambar Vizha was observed recently with great enthusiasm at Therezhundur, birth place of the immortal poet of Tamilnad. In the picture, Home Minister Bhaktavatsalam is seen addressing the conference.



The preparatory and after-cultivation of the soil should be as thorough as possible. Where virgin lands and fallows are proposed to be put under crops, deep ploughing with tractors would be very essential. Soil conservation measures such as levelling, contour bunding and bench terracing should be carried out according to modern techniques. This would effectively check soil erosion and conserve rainfall to the best advantage of crops. Deep ploughing would be particularly beneficial to crops like sugarcane and cotton. Systematic inter-cultivation should also be carried out for all crops as this practice not only keeps down weed growth but also conserves soil moisture.

Irrigation

Since irrigated crops generally give high yields, every effort should be made by farmers to extend the area under irrigation. For this purpose, irrigation facilities provided under new projects should be properly utilised. Other incentives provided for tapping underground water resources by digging wells and bore-wells should also be taken full advantage of. In areas with water bearing sandy strata, filter point tube wells should be installed to provide necessary irrigation. Thus all possible means of augmenting water-supply to crops should be explored.

Right Manuring

Soils in most parts of the State are of low fertility due mainly to continued cropping without rotation and manuring and constant erosion by rain. Adoption of efficient crop rotations, application of optimum doses of manures and carrying out soil conservation measures would alone help in maintaining their fertility. The organic matter content of most of the soils is very poor. The farmers should endeavour to rectify this deficiency by the application of bulky organic manures like cattle manure, compost and green leaf. Not only should the cattle manure be properly preserved before application to the soil but all other wastes should be converted into compost. Night soil compost being very valuable, it should be increasingly used.

Crops and Shrubs

Since present resources cannot meet even a small fraction of actual needs, raising green manure crops and shrubs by utilising available waste lands and field bunds should be extensively taken up. This useful practice should be exploited to the utmost extent possible to achieve self-sufficiency in organic manures. Green manuring is of special value to crops like paddy, sugarcane and coconut. The paddy grower should utilise the off-season fallow and even take to border cropping with Sesbania to secure requisite quantity of green leaf manure.

Short duration Sunhemp should be grown between rows of sugarcane in the early stages of its development, to secure adequate quantity of organic matter. Similarly raising an inter-crop of Kolinji or planting of Glyricidia on the borders of coconut gardens would help in securing enough organic manures for the palms. An all-out effort to extend the practice of green manuring should be made by all farmers.

Use of Fertilisers

Application of ammonium sulphate and super phosphate in conjunction with green manures has been found to increase paddy yields. The phosphate is best applied through the preceding green manure crop. The nitrogenous fertilisers should be given in split doses, i.e., half-at planting and half before flowering. Application of nitrogenous fertilisers to dry millets under conditions of assured rainfall has been found to enhance yields considerably. This practice should therefore be extended to large areas. Use of 200 to 250 lb. nitrogen both in the organic and inorganic forms for sugarcane has been found very beneficial.

Groundnut crop gives good response to application of phosphate and potash. Cotton too responds well to application of nitrogenous fertilisers at 30–45 lb. per acre in two doses at sowing and end formation stage. Application of NPK fertiliser to coconuts besides increasing nut production, also helps in maintaining the health of the palms.

Improved Strains

Through intensive selection and breeding, improved strains of the important crops have been evolved to suit the varied conditions of cultivation in this State. To mention the blast resistant paddies, the fodder-cum-grain and drought resistant cholams, hybrid cumbu and long staple-fine quality Karunganni cotton. Other notable introductions are Anabe-Shahi grape, Ranchi papaya, Chinese Sweet potatoe and Valenca tapioca. Their extended use will greatly increase the acre yields.

Adoption of optimum seed rate or spacing is yet another important aspect requiring attention. Use of 15,000 three-budded setts and planting them in rows 5 links apart have been found to ensure high yields of sugarcane. Adoption of wider spacing (1½'-2') between rows and narrower spacing (3" to 6") in the rows for groundnut crop results in high production. In cotton, too, sowing to optimum spacing is found very essential.



The festive procession with caparisoned elephant and all that was taken out in the streets of Therezhundur in connection with the recent Kambar Vizha there.

Block planting of coconuts is best done allowing a spacing of 25' between the palms. However, for single row plantings, 20' spacing would be adequate. Coconuts can also be raised successfully in saline and submerged areas, by planting grown up seedlings in raised mounds or strips. In the same manner cashew plantations can be properly established even in arid regions by planting them in sunken mounds.

Another important measure that should receive the special care of the farmer is pre-treatment of seeds. This not only ensures proper germination but also prevents incidence of diseases on the crop later on. Such pre-treatment is of special value to paddy, cholam, sugarcane, cotton and groundnut.

Pest Control Measures

The border pests of paddy and sugarcane, the hairy caterpillar on groundnut, the boll-worm on cotton and the leaf-eating caterpillar on coconut usually take heavy tolls. Prophylactic spraying against the paddy borer and mechanical methods of control for the sugarcane borers have proved effective. The groundnut hairy caterpillar is best tackled with BHC. 10 per cent dust when they are four or five days old. Pests of cotton can also be effectively controlled by adopting a systematic schedule of spraying with Folidol and Endrin. For the coconut caterpillar, release of parasites bred at the five Parasite Breeding Stations in the State will prove successful.

Improved techniques when carried out over large areas would contribute substantially to increased agricultural production in this State. By this, the farmers would not only benefit themselves by the increased outturn per acre but also help the country to march forward. They should put forth greater effort at intensive cultivation of crops on the right lines and help the State to maintain its lead in agricultural development. The farmers of the State should wake up to this great responsibility.

Labour Welfare in Industry

R. SESHADRI, *Personal Assistant to the Commissioner of Labour*

ıe concept of Labour Welfare is familiar in its terms is not easy to define. An ordinary and straightard meaning of the term is "efforts to make life h living for employees". The Royal Commission abour stated that "it is a term which must necessarily lastic, bearing a somewhat different interpretation in country from another, according to the different ıl customs, the degree of industralization and the ation of the worker". It is clear that the question is ective and should be taken to mean as anything done worker to better his physical, intellectual and economic ls.

hatever be the terminology used and the scope of neaning, the importance of Industrial Welfare is fast ing ground as it creates a healthy and congenial osphere in the workplace and aims at keeping the ur force stable and contented.

ortant Factor

abour forms an important factor in production. In a developing economy where progress has necessarily e assessed in relation to production, Labour Welfare sures and schemes are important since they are designed et the best out of labour. In the First Five-Year Plan, as observed "in order to get the best out of a worker in matter of production, working conditions require to be roved to a large extent. The worker should at least e the means and facilities to keep himself in a state of lth and efficiency. This primarily depends on adequate rition and suitable housing conditions. The working ditions should be such as to safeguard his health and tect him against occupational hazards. The workplace uld provide reasonable amenities for his essential ds".

mentary benefits

n its early days, the Labour movement was not well anized and it took quite some time before elementary efits like weekly holidays, half-an-hour's rest interval, ment of wages after wage period, safety from machines, per ventilation and sanitation were provided. Anyıg done by an employer to the workers outside the e of statutory requirements, is a voluntary effort at Labour Welfare and has its own benefits. Statutory Welfare, by efflux of time, becomes a matter of right and is less appreciated than voluntary welfare services.

The working conditions of workers were improved gradually through various legislations. It would be interesting in this connection to trace the growth of industrial legislation in India. As in England, it was the miserable lot of working children that first drew the attention of the Government.

Ban on child labour

The first Factories Act was passed in 1881. This Act banned the employment of children under 7 years of age and also laid down that children between the ages of 7 and 12 could work up to a maximum of 9 hours a day. The Act did not regulate or specify the working hours for the working persons above the age of 12. As this Act applied only to Factories with 100 or more workers, there were only nine factories that came under the purview of this Act in the then Madras Presidency. The Deputy Commissioner of Police in the City of Madras and the District Magistrates in the districts were the Inspectors of Factories to enforce the Act.

The second Factories Act which came into force in 1891 gave increased protection to children and women labour as well. The working hours for children were reduced from 9 to 7 hours a day. It was the Factories Act of 1911 which marked a great step forward in the improvement of the lot of workers. It was in this Act that provisions governing health and safety were introduced. The Act also provided for periodical official inspection of factories to ensure the observance of the various safety measures.

Leave with wages

The first Factory Inspector in Madras was Mr. Henry Thomas Walters and was appointed in July 1912. The number of factories in 1912 had swelled to 268 and provided employment to 65,191 workers. Successively the Factories Acts of 1922, 1923 and 1926 were passed which limited the maximum working hours of a worker per week and also brought any workplace with 20 or more workers under their purview.

A comprehensive Act was passed in 1934 to implement the recommendations of the Royal Commission on Labour. This Act paid due attention to working hours, health and safety. By and by, various amendments and fresh legislation were enacted, and were made applicable even to small power factories with ten or more workers. For the first time in the history of Factory Legislation provision for leave with wages was made in the 1945 Factories Act.

I.L.O. Standards

The current factory legislation is the Act passed in 1948 and is based on the standards laid down by the International Labour Organization. Provisions for licensing of factories, approval of plans for construction of factories, good ventilation, sanitation, lighting, provision of drinking water and safety precautions of higher standards were introduced. On the welfare side, many additional facilities like rest sheds, canteens, first aid outfit, ambulance room, creches, etc., were introduced. Welfare Officers had to be appointed by factories employing 500 or more workers. Consequent on the introduction of the new Factories Act, the employment position considerably increased. The number of factories rose from 4,167 in 1945 to over ten thousand in 1950.

Workmen's Compensation

The earliest measure of social security is the Workmen's Compensation Act of 1923 which provides for payment of monetary compensation to disabled workmen, and the heirs or dependants of deceased workmen. This was followed by a number of important legislations designed to secure improved working conditions, the right of collective bargaining, security of employment, provident fund, insurance and maternity benefits and so on. The Minimum Wages Act, the Madras Shops and Establi ments Act and the Plantations Labour Act are among the more important of the measures passed in recent times for promoting the all-round being of workers.

ion of the International Labour ion, its conventions became the guiding factors in regulating the working conditions in industrial establishments.

E.S.I. Benefits

With the advent of the Employees' State Insurance Act, which is now extended to most of the districts in the Madras State, a worker is assured of free medical care and attention. Hospitals exclusively for workers with provision for specialist attention have been established. The Employees' State Insurance Corporation is acquiring sites and putting up buildings for hospitals in all centres. The medical benefits are also to be extended to the families of workers.

The Government of India, through the Central Boa Workers' Education, has opened a regionaloffice at Ma under the care of a Regional Administrative Of assisted by Teacher-Administrators to impart educa to workers drawn from various factories.

Housing facilities

One of the essential measures of welfare is the provi of adequate housing facilities for workers. This aspe Labour Welfare has been engaging the attention of Government of India and the State Government. A sch popularly known as the Subsidised Industrial Hou Scheme has been launched in Madras State with assistance of the Government of India in the shape loans and subsidies. Under this Scheme, State Governm and the Statutory Housing Boards are granted 50 per c of the approved ceiling cost of buildings as loan and remaining 50 per cent as subsidy. Private employers co-operative societies are also eligible for loans and subs under this Scheme. Under the ægis of this Scheme Madras Government have already constructed nearl thousand houses at Sembium and Errukkancherry at estimated cost of about Rs. 25 lakhs.

During the Second Five-Year Plan period, the Gov ment of India allocated a sum of about Rs. 55 lakhs undertaking the construction of houses for indust workers in Madras State. Out of the 1,700 ho sanctioned under this Scheme, 1,098 houses have alre been constructed, and the remaining houses are well on way to completion. Private employers have also sche for construction of houses for workers and 10 such sche for the construction of 552 houses at an estimated cost Rs. 9·21 lakhs have already been approved by Government.

Plantation Labour

The introduction of the Plantation Labour Act of 19 considerably improved the working conditions of workers in Plantations. As in the Factories A necessary provisions have been made for the supply wholesome drinking water, suitable medical aid, edu tional facilities, provision of canteens and adequate sanita convenience. The Plantation Labour Act also provi for phased programme of compulsory housing for work by the owners of Estates.

Welfare of Labour is really one aspect of the fulfilme of the directive principles of our Constitution, name establishment of a Welfare Society in which the right work and to enjoy the fruits thereof are assured to eve citizen. In the past decade, much effort has been ma in this direction. More remains to be done. But t measure of the success already achieved is proof of society sympathetic understanding of the needs of the worki classes and its responsibility.

Progress at Thanjavur School for Juniors

[The Government Junior Approved School at Thanjavur has registered encouraging results in its efforts to convert vagrant children and junior offenders into useful citizens. In the absence of the opportunity for reform that schools like the one at Thanjavur provide for the 'Junior' to correct himself, there is every danger of his remaining a chronic offender. The school report presented in this article gives an account of good results achieved in the school and should provide happy reading for those interested in the rehabilitation of society's unlucky children]

The year started with 484 boys on the rolls. 136 boys were by direct admissions from courts. Of them 32 boys were placed under offences, 9 boys as uncontrollables and 95 boys as orphans and destitutes. 101 were received by transfer from the Junior Approved School, Ranipet, 19 from the Senior Approved School, Tattaparai, and one from the Junior Approved School, Thiruchitrambalam. The year closed with 594 boys on the rolls. 119 pupils were discharged on expiry of their periods of detention.

Twelve boys were coached and presented for the E.S.L.C. Public Examination in March 1960 and six of them came out successful. 11 boys appeared for the same examination in March 1961. Two pupils sat for the Madhyama Examination in Hindi and passed in second class. Five pupils took the Hindi Prathamic Examination and all of them passed, one securing first class. Two boys appeared for the S.S.L.C. Public Examination in March 1961 through the Veeraraghava High School, Thanjavur and four attended High School classes at St. Antony's High School.

The Minister for Revenue and Health, Sri Manickavelu, presided over the School Day celebrations of the Government Junior approved School, Thanjavur, and distributed prizes recently In the picture the Superintendent of the School is seen reading the report.



Vocational training was imparted to pupils in carpentry weaving, tailoring, spinning, masonry, laundering, hai dressing, book-binding, brass band, gardening and poultr keeping taking into consideration the attitude, heriditar skill and environmental conditions of the pupils. Boy were coached and sent for various Government Technica Examinations every year. During the year under repor 15 boys appeared for such examinations. Out of the tw pupils sent for music (lower grade), one passed. Out o the seven sent for drawing (lower grade), four passed.

Compulsory physical training is imparted to all th pupils daily in the mornings for half an hour. In th evenings they play organized games like football, volle ball, hockey, etc.

Religious Instruction

The need for religion of the pupils was well understoo and every effort made to instil in their growing minds th idea of God and the need to account for every action t Him. Religious and Moral instruction classes wer conducted by teachers of different faiths. Thevaram an Thiruppugazh classes were conducted by Sri Manicka Chettiar. Rev. Father S. Arulayya imparted religiou instruction to Christian pupils. Swamy Sivananda Srinivа of the Divine Life Society conducted monthly Bhajans Hindu boys were taken to the Sri Brahadeeswarar Templ every Thursday regularly. Christian and Muslim pupil were taken to the Church and Mosque on Sundays an Fridays respectively.

Wholesome food

Nutritive and wholesome food was prepared in individua kitchens and given to the boys. Boys were served witl variety of dishes of their choice within prescribe rations. On festival days special dishes were served.

The health of the pupils was very good during the year mainly due to the care bestowed upon the boys by the Medical Officer of the institution Dr. J. D. Kanakaraj and his staff.

The school owns a silent film projector. Films of educative value were obtained from the Film Library, Madras, and screened periodically. The School's Scouts and Cubs took part in all the functions organized by the Bharat Scouts and Guides Local Association, Thanjavur and in the Annual Scout Camp held at the Thanjavur Water Works Compound recently, the School Auxiliary Cadet Corps functioned efficiently.

Study Circle

The boys were periodically subjected to study and analysis with special reference to their family history and environmental conditions. Each pupil was treated with appropriate measures or methods, discussed and decided on the lines suggested by Dr. G. D. Boaz, Honorary Adviser in Psychology to the Department of Approved Schools and Vigilance Service, Madras. Such meetings of the psychology study circle were held quarterly and dealt with difficult problems and effected possible treatment. Courts of Honour were regularly held by the Housemasters and the general discipline of the school was good. The boys were able to gain knowledge of the rudimentary principles of good citizenship through the Panchayat System. Sri M. Noorudin, the Psychologist, visited the school periodically and gave advice on problem of children.

Building Character

All the festivals, religious and national, were celebrated by the boys and staff. General Thirukkural classes were conducted every Monday for both pupils and staff. Verses from the works of great poets like Avvaiyar were recited by pupils class-wise. This general assembly class encouraged cultivation of memory, improved general knowledge and went a long way in building character besides imparting moral instruction.

The school participated in the All-India and Industrial and Commercial Exhibition, Madras, and articles manufactured by boys in Carpentry, Weaving, Tailoring and Binding sections were exhibited.

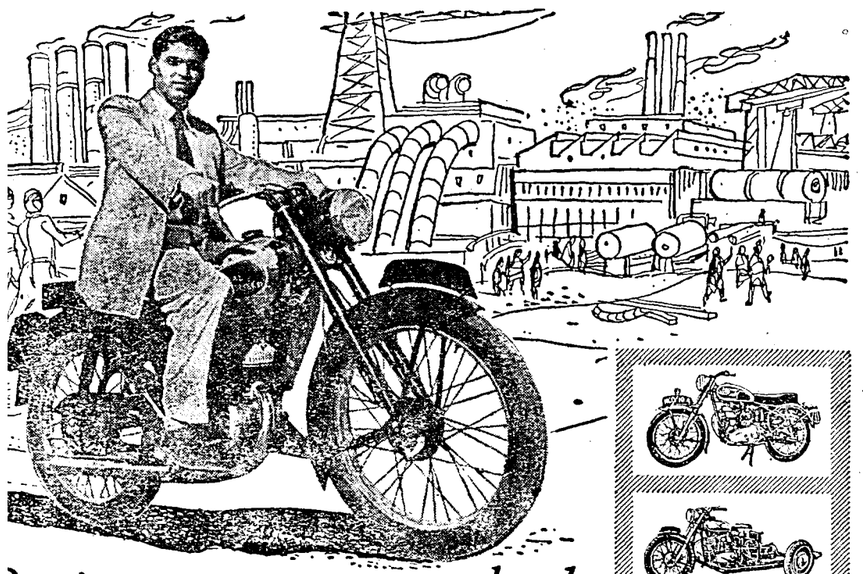
The total receipts in the manufactory branch amounted to Rs. 31,156–96 as against Rs. 18,261–32 last year. The school gardens produced 73,337 lb. vegetables costing Rs. 8,840–09 as against 55,827 lb. costing Rs. 4,868–91 last year. The receipt from the school poultry farm was Rs. 357–64 as against Rs. 310–22 last year, which was in addition to the supply of eggs to the school hospital whenever required. The receipt from the school brass band was Rs. 1,275 as against Rs. 740 last year.



Minister Manickavelu giving away a prize to one of the bright students of the Government Junior Approved School, Thanjavur.

Children lacking facilities, economic, etc., even in their most tender age, should be brought within the protective wings of the State and given the right type of education. This way, having to catch them after they become law-breakers and put them into reform institutions can be avoided. In a welfare State, there should be more institutions caring for the under-privileged, handicapped, neglected and abandoned children.

The aim of the school has been to re-educate, reform and rehabilitate the erring, destitute, orphan, vagrant, uncontrollable children and offenders and make them lead an honest and useful life serving themselves and the country. The results so far achieved by the school have been happy.



Business moves on wheels

THAT's why nearly 30% of Government of India's investments in the successive Five Year Plans are devoted to the development of nationwide transport.

The assembly and progressive manufacture of Royal Enfield motor cycles and three-wheelers fill a major gap in the transport needs of our economy. Motor cycles are an essential item of equipment of our Armed Forces, Police, Post & Telegraphs, and other Government Departments use motor cycles in increasing numbers. Motor cycle is the most economical form of automotive transport for our business executives, engineers, technicians, agriculturists, salesmen, insurance agents and others doing field work, who must go places to do their work efficiently and on time. For local deliveries in our steadily expanding cities and towns there's none so ideal as the Royal Enfield three wheelers for quick despatch of goods in easy, economical lots.

Planned and progressed in collaboration with the Enfield Cycle Company, Redditch, England and backed by the entrepreneurs with the experience of over a generation in the motor cycle and engineering lines in India, Enfield India factory and their business organisation are truly a model of achievement. A [illegible] plans are in hand to increase the pr[illegible] to serve the growing transport needs of our country.

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RE 109

Millets and Pulses for a Balanced Diet

V. SIVAGNANAM, K. MEENAKSHI AND M. S. THANGAM, *Agricultural College and Research Institute, Coimbatore.*

Rice is the staple food of the majority of the population in South India. Nutritional experts are of opinion that the South Indian diet is poor in nutrition values and is ill-balanced. The reasons for this will be obvious from a study of the figures of food values furnished in the following table :—

TABLE I.

Foodstuff.	Protein. PER CENT.	Mineral matter. PER CENT.	Calcium. PER CENT.	Phosphorus. PER CENT.	Iron. MGS.	Vitamin 'A' I.U. per 100 gms.	Vitamin 'B 1' I.U. per 100 gms.
Rice (raw) ..	6·9	0·5	0·01	0·11	1·0	0	20
Rice (parboiled).	6·4	0·8	0·01	0·15	2·2	0	70
Cholam ..	10·4	1·8	0·03	0·28	6·2	136	115
Cumbu ..	11·6	2·7	0·05	0·35	8·8	220	110
Ragi ..	7·1	2·2	0·33	0·27	5·4	70	140
Wheat ..	11·8	1·5	0·05	0·32	5·3	108	180
Redgram ..	22·3	3·6	0·14	0·26	8·8	220	150

(Copied from W. R. Aykroyd, M.D.)

It can be seen from the table that rice is poor in protein, [illegible]ineral matter, calcium, iron and vitamins 'A' and 'B'. [illegible] well balanced diet recommended by Aykroyd, M. D., as [illegible]onsumption unit per adult per day, should consist of [illegible]he following :—

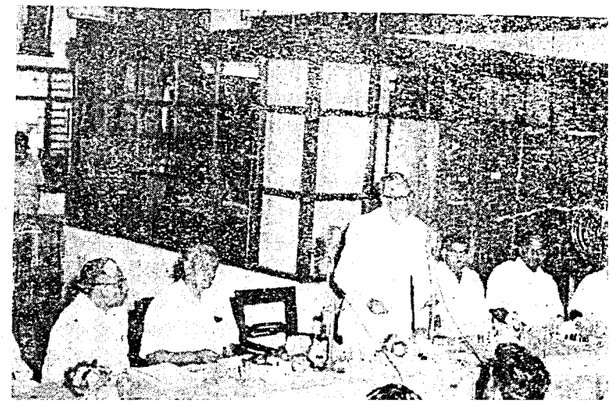
TABLE II.

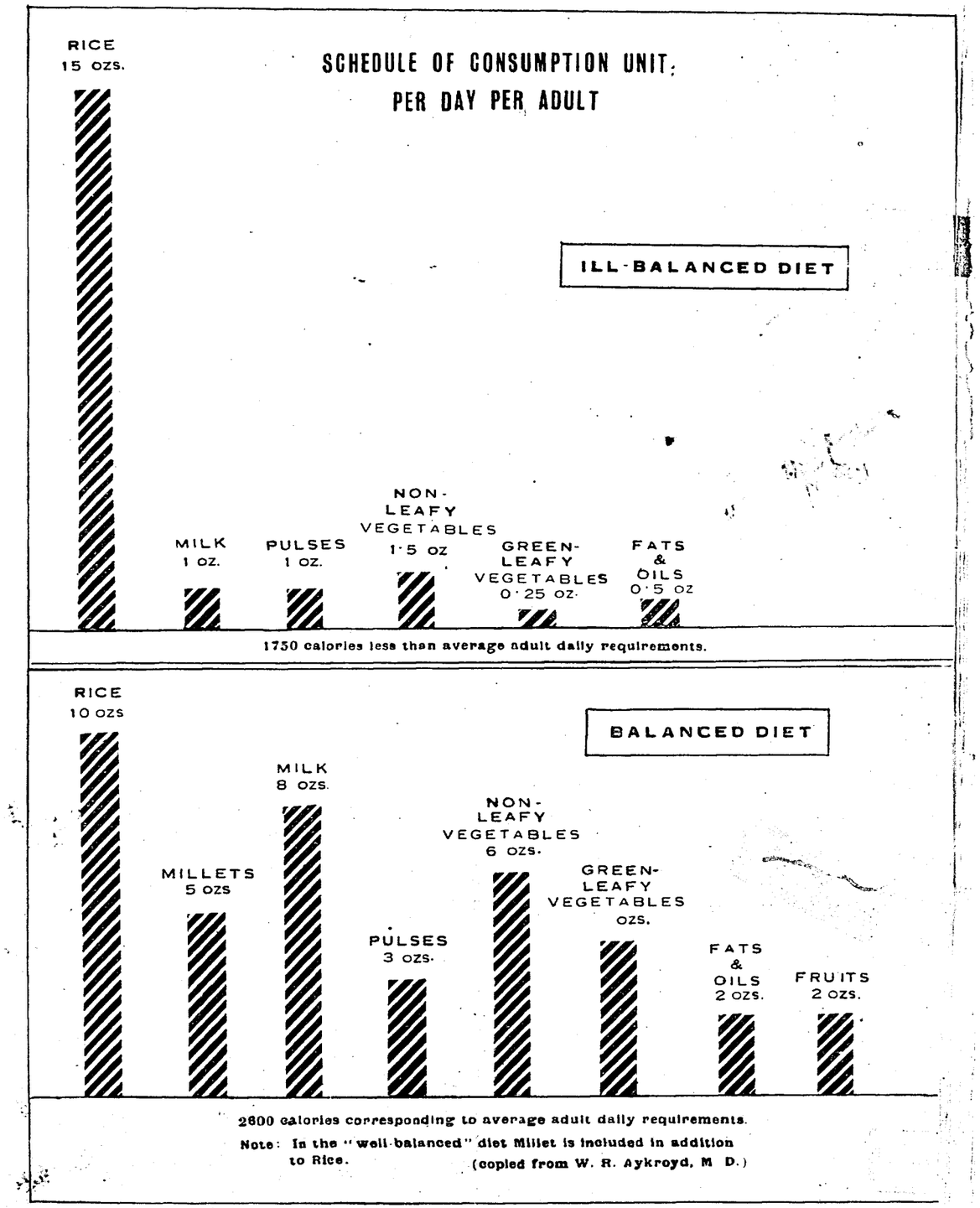
Serial number and foodstuff.	*Quantity required in ounces.*
1 [illegible]	10
2 Millets	5
3 Milk	8
4 Pulses	3
Non-leafy vegetables	6
Green-leafy vegetables	4
Fats and oils	2
Fruits	2

[illegible]eaper Foods

[illegible]he best and most economic way of making good the [illegible]iciency of a rice diet is by taking to other cheaper food [illegible]ich will be fairly nutritious and at the same time easily [illegible]ilable. Millets are known to be fairly rich in nutritive [illegible]ue. They can be secured at comparatively cheap prices. People who perform manual work find their staple food in millets, since they provide stamina for hard work: Of the millets, ragi ('Kepai') has a special appeal for both

Industries Minister Venkataraman inaugurated a Press Conference in the City recently in connection with the "Bleeding Madras" Relief Campaign. In the picture, he is seen addressing the conference.





the poor and the well-to-do and it is rich in calcium, phosphorus, protein and vitamins. Ragi malt is a good substitute for coffee and tea. For diabetic patients for whom rice is taboo, ragi like wheat is an important foodgrain. Babies in arms are fed with ragi gruel or ragi flour paste as it builds up healthy bones and teeth. In recent years ragi preparations like halwa, cake, biscuit, dosai, porridge, etc., have become popular. Since the predominant colour of the grain in ragi is dark brown, preparations made out of it are also brown in colour. Superior white grain ragi varieties, rich in protein and vitamins have recently been evolved at the Millet Breeding Station, Coimbatore.

Protein-rich Cholam

Cholam is also a millet high in protein, iron and vitamins. The grain of this millet can also be used for malt making. Cholam flour can be mixed with rice and blackgram in the preparation of dosai. The most popular way of making it specially edible is to convert the grain into 'pops' which are tasty to eat when mixed and taken with jaggery. This can be given even for children as it does not upset the stomach. An improved strain Co. 19, has specially been evolved for its high popping quality. Cumbu is another millet which is rich in protein, fat and iron. A mixture of rice and cumbu in 3 : 1 proportion in "iddli" preparations improves the nutritive value without changing the taste.

Pulses important

The importance of pulses in vegetarian diet needs no emphasis as they are known to everyone as the chief source of protein foods so essential for body building and repair of waste tissues. The different pulses cultivated in Madras State are redgram, blackgram, greengram, horsegram, lab-lab, cow-pea and cluster beans. The most important of these is redgram which as seen in the table has a high protein content and is used almost every day. According to the diet schedule recommended by Aykroyd, at least 3 ounces of pulses have to be included in the daily diet. Since Madras State is highly deficit in pulses, the Agricultural Department is taking all possible steps to step up the per acre yield of pulse crops. An improved strain S.A. 1 in redgram is a high yielder with good quality dhall and it suits the entire State. These improved strains have been specially evolved for high yield and quality. Seeds of the strains are being multiplied at the Millet Breeding Station, Coimbatore, and at the Regional Agricultural Research Stations to meet the growing demand for the seeds from the public.

Tobacco Production in India

More than 80 per cent of the tobacco produced in India is utilized internally in the manufacture of cigars, cigarettes and cheroots and in the preparation of chewing, *hookah* and snuff tobacco. Production of cigarettes in the country has been increasing at a fast rate. In 1959-60, 32,000 million cigarettes were produced as compared to 18,000 million in 1952–53.

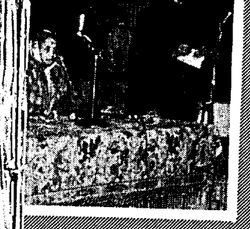
The production of tobacco brings in an income of Rs. 50 crores annually to the farmers in India. The Government earns every year Rs. 15 crores in foreign exchange by exports, and another Rs. 50 crores in the form of excise duty, agricultural cess and customs revenue.

India ranks fifth among the suppliers of unmanufactured tobacco to the world market. Indian tobacco is exported to nearly 50 countries. The total exports during 1959–60 amounted to 88 million pounds valued at Rs. 14 crores.

With an annual production of 700 million pounds from an average planted area of 900,000 acres, India is the third largest producer of tobacco in the world. The other two are the United States and China.





























THE POLICEMAN ARTISTE TOO

The recent All-India re and Cultural Meet at Ootacamund reveale talents in the police- man conventionally reg rigid enforcer of law alone. It revealed him artiste too. Pictures 4, 5, 7, 10, 11, 14 give he various dance art forms that have been policemen and their families all over Indi 13, 15, 16 represent pictures taken in con the inaugural, prize distribution and cor tions of the Meet. 9 and 6; A scene fron ' Lava-Kusa ' enacted by policemen's childre nesan with the child actors. 8 and 12 : Finar ubramaniam at exhi- bition stalls organized at : Governor Bishnuram Medhi with the delegate pated in the cultural events.



Preventing Accidents in Industrial Establishments

SRI C. V. SABNIS and Dr. M. N. RAO, *All-India Institute of Hygiene and Public Health, Calcutta.*

In the whole range of industrial hygiene and industrial welfare, there is perhaps no aspect of greater importance than prevention of accidents, when India is in a transitional stage from a primarily agricultural to a predominantly industrial one. Granting that necessary finance and the other requisites are forthcoming, one of the most important factors on which the success or failure of national efforts will depend is the worker himself. Considerable attention, therefore, is being directed to the health and welfare of the worker by governmental, quasi-governmental and a few private agencies.

Amongst the various influences that tend to lower morale and cause wastage of productive time, accidents take the pride of place. They are all too common in most industries. Fortunately for the workers, only a small proportion of them result in fatalities or serious disability. This may result in complacency. But it is imperative that both the worker and the administrator realise that whether the accident is fatal or trivial, it can have far-reaching effects and should be considered from a preventive angle.

Their Causes

There is always a direct cause for accidents. A heavy load falling on a person may result in a fatal accident. A slippery floor or a naked flame at workplace, for example nearly always lead to an accident. These direct causes may be obvious but the origin and causation need study. If one were to analyse the so-called direct causes there is always a human factor, though occasionally the human factor is to a large extent influenced by environmental factors.

There are important physiological aspects that contribute to the incidence of accidents. For example, women are known to have less accidents than men doing comparable jobs. In a study from the Physiological and Industrial Hygiene section of the India Institute of Hygiene and Public Health, Calcutta, the ratio was 5 : 24 reportable accidents in 1946 in Bengal. Younger and more inexperienced workers are also known to be involved in more accidents than the adult and more experienced groups. The very old again are more prone to accidents.

Again accidents are minimum at the beginning of the day or shift and, as fatigue gradually sets in, the number of accidents increases two-fold or more at the end of the day or shift. Similar increase in the accident frequency usually follows whenever the daily or weekly working hours are increased.

Mental Factors

There are many mental factors that might involve a person in accidents. Inattentiveness, carelessness in a given situation, foolhardiness due to overconfidence, slow cerebration are typical mental traits that may increase accident liability. Ignorance and lack of education of the hazards of occupation also contribute to increased exposure to risks of accidents.

Inexperience is also frequently a cause of accidents. Unaccustomed to the general factory conditions where people and objects move quicker than is usual outside, new workers are specially liable to accidents. The other type of inexperience is when the worker is transferred from one job to another and has not become skilled at it. Such workers though familiar with the general dangers of factory life may not have acquired the necessary mental and muscular habits to do their new work without faulty movements.

Inherent Traits

Even if all these conditions are satisfied, and the worker is mentally aware of the hazardous nature of the job, some have inherent traits which make them more liable to accidents than others. This is a common experience either in the home or in the factory. Some people just have a knack of breaking crockery at home or injuring themselves in factory accidents. This is an interesting field for an industrial psychologist.

Amongst the environmental factors that are known definitely to influence the incidence of accidents may be mentioned environmental temperature and lighting. It is a common experience in Indian industry that the accident rate is higher in summer than in winter. Similarly it is the experience in cold countries that more accidents occur while working at low environmental temperatures. An interesting study by the Medical Research Council of Great Britain (Bedford) has shown how in coal mines the accident rate was high at extremes of environmental temperatures and also that the very young and the very old were affected most.

Poor Illumination

Poor illumination leads to low visual acuity and this, in turn, is known to reduce human efficency as proved by many studies on precision jobs. Not only are accidents known to be inversely proportional to efficiency beyond a marginal limit but greater liability to accidents may be scientifically ascribed to poor perception. Based on such experiences are the physiological standards of illumination recommended for adoption for specific occupations or situations.

An illumination survey from the All-India Institute of Hygiene and Public Health in twelve factories has shown inadequate illumination below the recommended standards in 65 per cent of the test points even during the day.

Accidents always involve losses. Some of the losses are direct and apparent, others inherent and latent. The full cost of an accident is difficult to compute. The loss may involve the worker himself, the industry concerned and also indirectly the nation. The loss to the worker is the human suffering and the difference between the earning ability and the nominal compensation costs awarded for the disability. The industry loses by way of medical care and the compensation costs, lowered morale and lowered production, expenses on the train-machinery and goods, etc. Finally, the nation also loses by way of lost production through time-loss as well as lowered production through lowered productivity.

Trends in Factories

American statistics which take many of these factors into consideration estimate that nearly 10 million accidents in 1956 cost the nation some 10·8 billion, some 1,000 dollers per accident. The cost of industrial accidents alone is estimated by the National Safety Council of U.S.A. at 3·6 billion.

The paucity of comprehensive data-nay even basic data-makes the task of computing similar losses through accidents in India very difficult. But the excellent attempt by the Labour Bureau of Statistics does reveal certain important trends in industrial sickness and industrial accidents.

The trend of accident-rate in factories is significantly on the increase since independence; from a frequency rate of accidents of about 25·8 in the year 1947 to 43·2 in the year 1955. Though not so marked as in factories, the trend seems to be in the same direction in the mines also. In 1947 the annual severity rate of accidents in mines was 3·6 compared to a severity rate of 7·4 in 1955.

This trend or increased accidents is obvious not only in different States but also in different types of industries. Such an adverse trend of accidents in our industries can possibly be explained only by a combination of factors that may have their origin in the events since independence. These factors may be considered in relation to their source or responsibility as arising from (1) the worker, (2) the industrial management or (3) the State.

Recruitment Standards

The rapid industrialization of the country and the consequent high demand for industrial labour has led to lowering of recruitment standards. Recruited perhaps without recognized practices of recruitment, such as pre-employment examination, aptitude test or job analysis and introduced to industrial work without any job training programme, the worker, new to an environment, where both machines and men move faster, is a ready prey to casualities till he acquires the necessary training or safety consciousness at a personal price.

For some reason or other, the attitude of the average Indian industrialists towards the whole question of workers health and safety seems to be growing apathetic over the last decade. Such an inference seems only logical when we consider that the total number of prosecutions for violations of the Factories Act, which is intended to improve the conditions affecting the workers seems to be continuously on the increase, the number of such prosecutions being 2,743 in 1951 as against 5,620 in 1955. During these years, there was not much change in the number of inspections (28,437 in 1951 and 28,119 in 1955) to explain such an increase in prosecutions.

Finance Minister Subramaniam, opened the Sales Depot of the City Khadi Development Co-operative Society at Ayanavaram recently In the picture, the Minister is seen inspecting Khadi fabrics at the depot.



What the underlying causes of such a changed situation may be needs a serious study. It is felt, however, that some of the recent legislations may have an indirect, though perhaps a temporary bearing on the subject.

As at present, except a few enlightened managements, the majority perhaps are unaware of the indirect relation between the health or safety of the worker and his efficiency or productivity with its bearing on the industrialists' own profit. The obligation of the expenditure on the health or safety of the worker by an average Indian industrialist has therefore always been a grudging acceptance, sometimes due to charitable outlook, but more often due to compensation costs which are his direct responsibility. The lifting of such a direct financial pressure on the industrialist could be expected to result in an increase of the prosecutions for violation of the health and safety provisions, for example, of the Factories Act. This is borne out in practice by an actual increase of such prosecutions from 263 in 1951 to 960 in 1955.

Direct financial interest

The direct and visible financial interest in trying to minimise the sickness or accident disability in industry was perhaps, to a certain extent, affected by the Employees' State Insurance Act taking over the workman's compensatio . The progressive implementation of the Act increasingly absolves the employer of his financial interest in the matter, perhaps the only interest which he could understand. Having paid his fixed levy to the Employees' State Insurance Corporation, he is inclined to consider the question of workers' safety as no more a concern of his and would naturally be unwilling to spend anything more either on health maintenance or safety. These reflections on the working of an average Indian industrialist's mind are borne out when we realise the changing picture of factory safety or medical care programmes. Hitherto, wherever such a programme existed, a full-fledged factory medical department in close contact with the worker and his working environment, could act as a watch and ward over the health or safety of the worker. The Employees' State Insurance Act has now made its position unjustifiable in the eyes of the industrialist and despite recommendations of the Government to the contrary, the medical departments in industries are on the decline.

The problem in mines

The causes in the case of mines may be different. The large majority of mines are in the hands of private owners. The ever-increasing possibility of the State taking over or nationalising essential mines like gold, manganese and coal, which employ more than three-quarters of the total mining labour in India might have a damping effect on the interests of the employer in the current safety problems and future health programme.

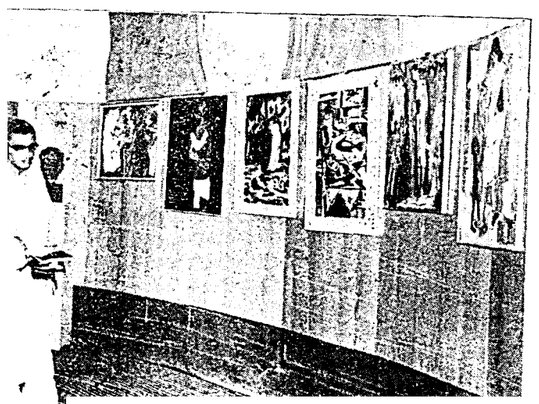
In the matter of both safety or health maintenance perhaps the most important step to be taken is inspection both at Governmental level as well as from within the industry, and the inspection services dovetailed into educational programmes. It is only by frequent inspections that conditions in industry jeopardizing the safety or health of the worker can be progressively eliminated. At present, barring a few exceptions, such programmes within industries in India are practically non-existent. At the State level, enforcement of specific legislation in various States continues to be inadequate. For example only some 85 per cent of the factories in India could be inspected in any one year during the decade since Independence. Not only are the number of inspectors inadequate, but perhaps their training for the specific jobs can be supplemented in the light of modern advances.

State Responsibility

Under the existing legislative procedure, the inspection of factories and mines is a State responsibility. It is incumbent on the management to report to the factory inspectorates, accidents either fatal or those causing disability for 48 hours or more. One of the drawbacks of the existing provision from the point of view of those interested in the worker's safety is that the management's obligation is restricted to maintaining a record of only such accidents as are called Reportable Accidents. Thus, in a large majority of instances, no records are available in Indian industry of accidents not resulting in injury to the worker, disabling him thereby for periods less than 48 hours.

But from the preventive angle, all accidents are of equal importance, whether reportable or not. In both

The Finance Minister inaugurated the National Exhibition of Art at the Centenary Hall, Egmore, recently. In the picture, he is seen inspecting a section of the exhibits.



the instances, the causes are the same, reportability or otherwise depending entirely on the chance factor.

Non-reportable accidents

For every one fatal accident in factories during 1955, there were accidents causing disability of 48 hours or more amounting to a total of 116,010. One can, on the U.S. experience, expect therefore that the number of accidents which resulted in minor injury and hence were non-reportable could not have been less than 3,364,290, while the number of such events in which fortunately no injury occurred was 11, 610,000. It has to be remembered, however, that every one of these is potentially capable of causing a lost time or disabling injury, though by chance the accident did not result in such an injury.

This brings home the importance of all accidents, trivial or minor, major or fatal, to be equally assessed in formulating a control programme.

Machine Vs. Human Factor

The cardinal fact to appreciate in planning accident prevention is that most of the accidents are man-made. Though accidents are erroneously attributed to machines, experience shows that barely 15–20 per cent of all the accidents are those where machines are concerned. Even in these cases, the accidents occurred though the machines were provided with protective guards.

To be able to prevent accidents successfully, one must understand why and how accidents occur. Most of the accidents, where men are injured, are the logical termination of a series of factors which follow one another in a chain reaction. These may be summarised briefly as—

(1) *Nature and nurture* : Temperamental defects and aberrations may be inherent in the worker as hereditary characteristics or may be temporarily acquired as a result of poor social environment. These may constitute the immediate reason for the ensuing unsafe act or for the existence of a hazardous condition in the environment.

(2) *The unsafe act* : The commission of an unsafe act by the person in an environment created by himself, co-workers or the management.

(3) *Accident* : The resultant of factors 1 and 2 ; an unsafe act in a temporarily susceptible person or due to unsafe environment resulting in an unexpected occurrence.

(4) *Injury* : The extent of the resulting injury ranging from nil to fatal—the extent depending largely on the chance factor.



An interesting scene from "Ship Ahoy" staged recently by the students of the St. Bede's High School, Madras, in connection with Parents' Day celebrations.

Since injury is thus the logical end of a chain of events, the essence of accident prevention is the interruption of this chain by elimination of any one of the factors that comprise it.

Unsafe Acts

The most important factor which can possibly be controlled is the unsafe act or the causes which may lead to the indulgence in such unsafe acts. The reasons for commission of such unsafe acts can be placed broadly under four groups, the unsuitability of the person, ignorance or improper attitude of the worker and specific factors in the environment.

Unsuitability may be psychological or physical. Almost 80 per cent of the industrial accidents are found to be committed by the same 15—20 per cent of the total workers. Careful weeding out of such accident repeaters or accident prone persons specially from dangerous occupations is very likely to result in elimination of many unsafe acts in industry and will be reflected in a significant reduction of accidents.

Again persons with defective vision working at machines or night shift duties, colour-blind engine-drivers, women workers on jobs beyond their physical capacity and such other cases obviously contribute to a fair percentage of industrial accidents and may need removal from such positions to safer jobs.

Pre-employment examination

Elimination of these factors naturally requires adequate pre-employment examination facilities. At present such facilities do not exist as a rule in India.

Where the worker has not been properly trained or initiated into the job, his very ignorance of the danger may result in the commission of an unsafe act. Adequate job-training, especially in safety practices may therefore be recommended.



The Minister for Industries and Co-operation, Sri Venkataraman, is seen addressing the Conference of Deputy Registrars of Co-operative Societies which he inaugurated at Rajaji Hall recently.

Even experienced workers are often found to be involved in accidents not because they are ignorant about safety practices, but will not practise them because of their spirit of bravado or over-confidence. Eye injuries despite provision of safety goggles and machine accidents due to removal of safety guards provided or serious accidents while lubricating moving machine parts are testimony to such an attitude on the part of woker towards his job.

Constant education programmes and adequate disciplinary measures can help in rectifying this attitude.

Specific Industries

Specific industries have specific environmental factors directly influencing the commission of unsafe acts and resulting in accidents. Periodic inspections of such factors with a view to their rectification and administrative machinery for constant intra-mural checking would always bring about a progressive improvement in the incidence of accidents.

For effective execution, safety work in industry must be an integrated programme, based on accurate knowledge through intensive investigation and effort. The investigation should bring out accurately the unsafe causes and efforts should be directed to the control of unsafe personal performances or unsafe conditions.

In an effective organization, a good safety department under a capable safety engineer is the first requisite. The second important step in organization is to secure the co-operation and interest of the various parties concerned, through representative safety committees. More than the details of administrative relationship, the active and sustained interest of the workers themselves and the management is of great importance.

Record maintenance and analysis

A skeleton organization comprising the safety engineer and the safety committee can plan up a safety campaign only through scientific accident surveys. To survey the why and wherefore of accident occurrence, adequate machinery for maintenance of records is essential. There must therefore be a systematic maintenance with all possible details, not only of reportable accidents but also of all accidental occurrences potentially capable of causing injuries. The common fault in Indian industry today is to base safety programmes on analysis of accidents recorded with a view to submitting the returns to the State Inspectorate of Factories. These recorded cases represent mostly those in which actual injury has occurred. The temporary chance factors which caused the injury are thus unduly emphasized instead of the real causes which bring about such accidents. This, therefore, results in an ultimate failure of the safety campaign due to wrong remedial measures being adopted instead of the correct ones.

Remedial measures

Finally, there should be adequate provision for quick and periodic analysis of the accident records. Mechanical tabulating systems, though initially expensive, are a great advantage in good record maintenance and analysis.

Once the analysis of facts of accident causation indicates the trends, the next step is to adopt the necessary measures to prevent recurrence of such accidents. The remedial action in accident prevention work may be grouped into two categories, (*a*) the engineering programme and (*b*) the educational programme.

The primary cause and the contributing causes in the environment should be removed as far as possible. Unsafe tools and machines should be guarded, replaced revised or made mechanically safe. A programme for the environmental control of factors like high temperatures, excess noise and poor illumination should be initiated and carried out.

Educational Programme

A well-planned and continuous health education programme in safety is essential. All the known health educational methods of communication may have to be resorted to, to make the worker safety-conscious. Medical and psychological procedures may have to be strengthened to help the physically and psychologically unsuited. Judicious use of safety competitions and incentives in various forms may be tried.

Above all, as in all scientifically planned health educational programmes, an authority of choice, voluntarily preferred by the workers themselves should be made use of more than the authority of consequences leading to disciplinary enforcement.

An analysis of the available published data shows that both the total number of accidents and the loss of time and production involved are on a steady increase. The possible influence of different factors, such as the changing attitude of the employer towards the worker's health and safety, the indirect influence of rapid industrialization, recent legislative policies and the present inadequacy of inspection systems have been discussed. Modern principles of accident prevention have been presented to show that the older view that accidents are unpredictable and hence inevitable is no longer tenable. It has been shown that by a scientifically planned and well-organized effort on a national scale, a large majority of accidents are preventable.

Need of the hour

Such an effort is the crying need of the hour in the national interest. It must be a joint effort by the Government and the employer, the two important forces, along with support from organized labour. At present, the Employees' State Insurance Corporation has confined itself primarily to the medical care and the compensation liability for the worker. The employer may therefore be tempted to shelve his responsibility for the reasons cited earlier. The field of industrial health maintenance or preventive medicine of which accident prevention is but an aspect has fallen in the doldrum after the post-war fillip. Perhaps the situation might possibly improve when the Employees State Insurance Corporation in no distant future undertakes the responsibility also for the preventive aspects of the worker's health, instead of confining itself to curative aspects only as at present.

Willing Participation

In the meantime, measures must be taken to shake the employer from any apathetic and disinterested attitude towards the health and safety of the worker. May be revision of the employer's contribution based on periodic appraisal of the health and accident reports and control programmes within the industry could bring about a healthy change in the attitude of the employer. A simultaneous drive to educate the employer into the economics of health maintenance and safety of the worker through suitable means may also gradually convert him into a self-convinced and willing participant. This the pressure of the State cannot achieve.

Finally, one must not forget the axiom that nothing can be achieved without the willing participation of the workers.

Production of malted milk powder

An improved process for the production of nutritive and palatable malted milk powder and allied products has been developed at the Central Food Technological Research Institute in Mysore.

The new process makes use of solid powder, such as malt extract and milk powder, as base material instead of fresh milk and malt liquor. Production is thus facilitated since the amount of water to be evaporated for preparing the product is reduced.

The base materials required in the new process are ragi, jawar, barley, wheat and milk which are easily available in the country.

The total capital outlay for a 300-ton annual capacity plant is estimated at about Rs. 6·85 lakhs.

In recent years a considerable market has been developed for malt products in India. The demand has been largely met from imports. In 1957 the total value of malted milk and malted milk powder imported was about Rs. 95 lakhs. Since then, imports have been drastically reduced to about 5 to 10 per cent.

What's New in Science

[Everyday that passes in this age of Science registers some important advance or other as a result of which new and improved techniques emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature aims to take note of such developments. This article contains notes on the Improved Pasteurizer, Malted Milk Powder, Emulsions and Resins from cashewnut shell liquid, Dispersion Resins, Prototype Hearing Aids, Dyeing of Wool, Silk and Nylon with Lac Dye, Moisture-proof linings for bagging urea and on Benzyle chloride.]

An improved pasteurizer has been evolved at the Central Food Technological Research Institute, Mysore. The pasteurizer, which has been patented, is stated to be an improvement over the equipment available in some of the industrially advanced countries.

The colour, flavour, texture and vitamin content of many canned foods are most effectively preserved by high-temperature, short-time cooking or pasteurization. Commercially, this is accomplished through flash-pasteurization and agitation. Flash-pasteurizers are, however, suitable only for liquid food products like fruit juices and have not been successful in processing semi-fluid or viscous food products like fruit juice concentrates, pulps, pastes, soups, etc., and of canned fruits on account of their high viscosity.

The Mysore Food Technological Research Institute has developed a batch-type agitating cooker in which hermetically sealed cans containing acid foods (fruits) rotate axially in steam at atmosphere pressure for some time (depending upon the nature of the product) enabling spin-cooking of the cans under water sprays within the cooker.

Salient Features

A variable speed drive giving wider range of axial rotation of cans thereby providing facilities for the processing of a greater range of canned acid foods of different viscosities is one of the important features of the design. The processing time of various fruit products ranges from 1 to 3 minutes only as compared to the 20 to 30 minutes required with the conventional stationary processing. Heat-sensitive fruit products can be destroyed without affecting the product. The cost is only about a fourth of similar imported equipment.

About 500 cans per day have been spin-processed over the last two years in a prototype spin pasteurizer. Products which have been spin-processed in this unit include anned fruits such as mango slices, pineapple, orange segments, banana chunks, papaya chunks and tomatoes; fruit pulps like mangola, mandarin orange juice, pineapple juice, tomato juice and mango pulp; fruit juice concentrates of mandarin orange, mosambi orange and pineapple and tomato soup. All these have stood storage tests for 6 to 12 months at 30° C.

Malted Milk Powder

A new process for producing malted milk powder has been developed at the Mysore Food Technological Institute. The process consists in mixing concentrated malt extract with milk powder, fats and carbohydrates followed by vacuum drying.

A notable advantage of the process is the use of milk powder in place of liquid milk and concentrated malt extract in place of mash liquor prepared from green or kilned malt, which eliminates the need for evaporation.

Fifty pound batches of the milk products have been successfully prepared and found to compare favourably with imported products, both in taste and flavour. The shelf life of the product is about one year at 37° C. Raw materials required for the process, namely, milk, ragi, jawar, barley and wheat are all available indigenously.

Total capital outlay on the plant having a capacity of 300 tons per annum is estimated at about Rs. 6·05 lakhs, and the equipment required includes vacuum shelf driers, powder filling unit, mixers, seamers and granulator.

New Emulsions, Resins

A new process has been worked out for making stable emulsions from cashewnut shell liquid, aldehyde condensate resins, their solutions and polymerized cashewnut shell liquid.

The emulsions obtained are rapid-drying and free from odour and fire hazard. They can be applied on wet as well as porous surfaces and the films obtained can withstand washing. These emulsions are suitable media for pr. and possess tolerance to addition of corrosion inhibitors. Sealing pastes based on these emulsions can stand hot reveting.

Another process which has been patented makes available isogel-stage cashewnut shell liquid resins either by condensing raw cashewnut shell liquid with aldehydes followed by heat processing at low temperatures or by condensing the heat-polymerized cashewnut shell liquid with aldehydes at room temperature under alkaline conditions. The resins so obtained are mechanically dispersed in suitable solvents.

These dispersion resins give fast drying finishes which adhere to metals and which can be recoated with lacquers without lifting. They can be used for making rich paints and primers which, when applied on steel surfaces, give cathodic protection.

Both the processes have been studied out in the laboratory and 2-2·5 gal. batches of the products have been prepared. Service trials of emulsions were carried out in connection with water-proofing of brick walls and reinforced concrete structures. Observations after two years on brick walls, six months on concrete structures and on wagons have shown that their performance is satisfactory.

Products based on the dispersion resins also have been tried on coaches, wagons, bridges and tracks. These were painted at different times during the past two years and have been found satisfactory so far.

Cashewnut shell liquid, the main raw material for both types of products is available in the country. Other raw materials like bentonite and tannins are also indigenously available. The cost of equipment required is estimated at Rs. 25,000.

Prototype Hearing Aids

Interesting details are available of the designs of cheap and efficient hearing aids developed at the National Physical Laboratory. The research work was undertaken at the instance of the Ministry of Education which asked the National Physical Laboratory to investigate the possibilities of manufacturing hearing aids which would be sufficiently cheap to be within the reach of the institutions for the deaf and dumb in the country.

Of the two personal hearing aids designed, one employs miniature valves and the other transistors. In these hearing aids, minimum number of imported components have been used and both the initial and maintenance costs of the units are lower than those of imported units.



A portrait of the eminent Tamil Scholar Dr. R. P. Sethu Pillai was recently unveiled at the Senate House by Vice-Chancellor Lakshmanaswami Mudaliar.

Based on laboratory estimates, the cost of the personal hearing aid using the transistors works out to Rs. 175 and that of the group hearing aid to Rs. 1,800. The group hearing aid designed consists of a unit to mix the output for several microphone channels followed by a properly shielded amplifier which has two outlets and six channels, each, thus providing listening facilities for 12 deaf students. Steps have been taken by the National Physical Laboratory to pass on the new invention to the industry for commercial manufacture.

Purified Lac Dye

Conditions for dyeing protein and polyamide fibres like wool, silk and nylon with purified lac dye have been standardized as a result of investigations undertaken in the Department of Chemical Technology, University of Bombay.



The Minister for Revenue and Health Sri Manickavelu giving away a merit certificate during the Anniversary celebrations of the City Youths Union, Choolai, over which he presided.

Dyeings of specific shades and fastness properties have been produced by employing suitable mordants. Procedures have been evolved for obtaining crimson, purple, orange, red and brown dyeings.

Although lac dye has been used in India for dyeing silk and wool, systematic studies with respect to the range of shades obtained and fastness characteristics have not been carried out so far.

Polythene Linings

Search for moisture-proof packaging of hygroscopic fertilizers at Sindri has indicated that polythene liner stitched to jute bag gives maximum protection against humidity. For protection of urea against caking, the thickness of the liner should be at least 0·002 inch.

Among the different linings tested at the Sindri's Technological Department for moisture impermeability and ability to withstand rough handling were: polythene liners, crepe paper pasted with bitumen to jute, two plies of bagging paper laminated and pasted with bitumen to jute and paper laminated and pasted with bitumen to jute and polyvinylidene chloride-coated jute bags.

The results showed that polythyene-line jute bags are superior to polyvinylidene cholride-coated or paper-lined jute bags. Polythene liners stitched to the jute bag are better than loosely inserted ones. The liner, larger in dimension, and the jute should be folded and doubly stitched so that there is less likelihood of moisture penetration.

Benzyl Chloride

A new process for the manufacture of benzyle chloride developed at the Regional Research Laboratory, Hyderabad, eliminates the drawbacks of decomposition and polymerization encountered in the conventional process of chlorinating toulene. High yields of pure benzyl chloride (90 per cent of the theoretical) have been obtained.

As indigenous production of benzyl chloride is meagre, it is at present imported. In addition, some chemicals, derived from benzyl chloride, namely, phenylacetic acid benzyl acetate, benzyl benzoate and benzyle alcohol valued at over Rs. 10 lakhs were imported during 1959.

The process has been studied in a pilot plant (15 kg. capacity) and technical and economic data for designing a commercial unit have been collected. The raw material toulene and chlorine are readily available.

Central Coal Workshop in Bihar

The National Coal Development Corporation's Central Workshop at Barkakana in Bihar was formally opened on April 30 by the Governor, Dr. Zakir Hussain. The workshop which has been built at a cost of Rs. 1·5 crores, will employ about a thousand workers and will carry out major repairs to heavy machinery and manufacture spare parts.

In Ranchi, on April 30, eighty-seven workers from different collieries under the National Coal Development Corporation were awarded certificates of merit at a special function organized to celebrate the fulfilment of the Second Plan target by the Corporation. Dr. Zakir Hussain, Governor of Bihar, gave away the certificates.

Certificates of courage and devotion to duty in recovery operations in the deep pit were also awarded to six workers from Giridih colliery.

Bringing Ayurveda in line with Modern Practice

Considerable work has been done in recent years for the levelopment of Ayurveda, the ancient Indian system of nedicine, and to bring its study and application in line vith modern knowledge and requirements.

Dating back well before the beginning of the Christian ra, Ayurveda (literally, the knowledge or science of life) vas among the first systems of medicine in the world to be leveloped and practised on scientific lines.

Treatises on medicine, anatomy, gynaecology and children's diseases, as well as other aspects and branches of he medical science, are part of the lore of Ayurveda. Its nfluence had spread well beyond the shores of India and mong its special feature was the study of dietetics.

Vestern Influence

With the passage of time and the advent of Western nfluence, the study and practice of Ayurveda became agnant. The system, however, continued and to a considerable extent, still continues to be the only treatment nown to large numbers of people, particularly in the rural reas.

In 1920, the Indian National Congress adopted a resolution urging the people to make an earnest effort towards the pplication of scientific methods for the investigation of the stem of indigenous medicine.

Since Independence, encouragement of the Ayurvedic s well as the Unani) system of medicine has been recogzed as part of State Policy.

oper Training

The effort has been to bring it in harmony with modern owledge, introduce uniformity into the system of educan in Ayurveda, provide the students of Ayurveda with a inimum basic knowledge of modern practices and the ntific system of investigation and to incorporate useful l valuable elements of Ayurveda in the general medical ctice for the benefit of humanity. Particular emphasis therefore, been laid on research and proper training lities.

With these guiding principles in view, a number of ching institutions have been set up and several States introduced combined courses so that students who rained in Ayurveda are also provided a minimum basic wledge of the modern system.

During the First Plan a provision of nearly Rs. 37 lakhs had been made for research and development of the indigenous system of medicine. In the Second Plan, this provision has been increased to Rs. 6 crores.

Research Council

The Central Government have set up a Central Council of Ayurvedic Research to advise them on the co-ordinated development and practice of Ayurveda and the promotion of research.

At Jamnagar, in Gujarat, research has been carried on for the last eight years at the Central Institute of Research in Indigenous System of Medicine set up by the Central Government. The Institute has taken up a number of diseases for investigation, apart from research on drugs, plants and herbs.

Attached to the Institute are a hospital, an out-patient department, a laboratory and a pharmacy. Apart from Ayurvedic physicians (including practitioners of the Siddha system of South India), practitioners of modern system are also attached to the Institute for purposes of comparative study. The Institute not only carries on research but provides facilities for training in methods of research.

Post-Graduate Course

A Post-Graduate Training Centre in Ayurveda has also been set up at Jamnagar where 25 students selected on an All-India basis are admitted every year for higher training. The students, after completing the course lasting two years,

A party of Malayan rural leaders who were on a study tour of South India photographed at the Secretariat with officials of the Rural Development and Local Administration Department. The Malayan team had discussions on Panchayat development in the State.





Governor Bishnuram Medhi presented the Madras State Sangeet Natak Sangham Awards for distinguished contribution to the stage and screen to veteran artistes at a special function in the City recently. In the picture, he is seen giving away the award to stage actress M. S. Drowpathi.

become teachers or research workers at Ayurveda institutions in different States. This Centre also has a hospital for clinical studies.

Financial assistance has been given to other institutions for research in Ayurveda and for the upgrading of training institutions.

Pharmacopoeia

Yet another step towards the harmonisation of Ayurveda with modern medicine will be taken soon with the introduction of Ayurveda as an optional subject of study in six medical colleges.

The compilation of a pharmacopoeia of Ayurvedic drugs has been taken in hand by a Committee appointed by the Central Government. It is also proposed to standardise these drugs.

The Central Council of Ayurvedic Research has recently recommended that a Central herbarium and regional herbaria be set up for study and identification of Ayurvedic herbs.

Leprosy Control

It is estimated that there are over two million leprosy patients in India, the incidence in some places being as high as 40 per thousand. About half a million of these are of the infectious type.

Until about 15 years ago Leprosy work was almost one of mercy and love to which dedicated people devoted themselves. Mahatma Gandhi, who himself nursed a leper in Sevagram, gave a lead in voluntary work for the betterment of the conditions of victims of this disease. Now, it is increasingly being recognized as a medical and scientific problem as well, to be tackled by medical and other research workers. The discovery of Diamino Diphenyl Sulphone (D.D.S.) has ushered in a new era in the treatment of leprosy.

Voluntary organization like the Mission to Lepers and the Hind Kusht Nivaran Sangh have been mainly responsible for the anti-leprosy work on a voluntary basis.

The problem has also been engaging increasing attention of the Union Government. The Government appointed a committee in 1954 to review the extent of leprosy in the country. The areas of high prevalence are mostly found in the eastern parts of the country (five or more per thousand) though there are some points of incidence in the central and southern parts. In these areas, there are whole districts with rates as high as 20 to 40 per thousand and in some individual villages or groups of villages even as high as a hundred per thousand.

National programme

The Government have launched a National Leprosy Control programme to give modern treatment to persons suffering from leprosy in selected areas. Each centre covers a population of 50,000 or more. Early cases are detected and mass treatment with sulphone carried out besides educating the public.

So far 113 centres have been established, covering a total population of about 13 million. A training centre has been set up at the Medical College Hospital, Nagpur, for giving reorientation course to the doctors who are required to man the leprosy control centres.

A Central Leprosy Teaching and Research Institute is functioning near Madras for training leprosy workers and for conducting research on problems relating to leprosy.

Advisory Committee

In collaboration with the Gandhi Memorial Leprosy Foundation, Government have also started a training centre at Chilkapalli in Andhra Pradesh for training doctors.

In 1958 the Government of India constituted a Leprosy Advisory Committee consisting of representatives of Government and leading voluntary organizations working in the field of leprosy to review the working of the various leprosy control schemes, to consider requests for grants for leprosy work and to make recommendations to Government.

An attempt has also been made to study the response of contacts to prophylactic treatment with D.D.S. The results of the study have been encouraging.

More Training Units

During the Third Plan period, Government propose to have more extensive coverage. Besides establishment of control units, [illegible] training units will be established for imparting training to medical [illegible]-medical workers. In addition, rehabilitation centres are also contemplated to look after the physical, psychological and social rehabilitation of leprosy patients.

It is also proposed to establish an all-India training centre for reconstructive surgery and physiotherapy.

For the Plan period an allocation of Rs. 7 crores has been made for anti-leprosy work. International agencies like WHO and UNESCO have also been actively participating in the various leprosy control schemes.

Recent advances in the knowledge and cure of leprosy give further ground for hope that the goal of eradication can be expected to be achieved within a measurable period of time.

Cancer Research

A significant breakthrough in cancer research which involves a new and rapid method of first producing and then extinguishing breast cancer in rats is reported from Chicago University.

The technique, outlined by Dr. Charles Huggins of Chicago University's Ben May Laboratory for Cancer Research, represents a number of "firsts"—

1. For the first time, a way has been found to induce cancer in all laboratory animals tested, something not previously possible.

2. For the first time, a way has been found to extinguish, not just suppress, cancer in laboratory animals.

3. Producing and eradicating the cancer takes just over three months. Previously in work with mice it took up to two years to demonstrate this.

4. Most important, it offers science a "ready-made" tool to evaluate drugs for their anti-cancer effect against breast tumours in human beings, where time is important.

The experiment

The report said a single feeding by mouth of 20 milligrams of the compound DMBA to a strain of albino rats produced mammary cancer in all 500 by the time they were 50 days old. Some of the rats developed the cancer within 15 days. At age 65 days, they were given the ovarian hormone progesterone, and by age 90 days the tumours had disappeared in two out of 10 and eventually in all the rats. Rats given injections of pituitary hormones at age 65 days, or made pregnant, experienced very rapid spreading of the breast cancer.

Huggins said the method is a "wonderful tool" to test both carcinogens (cancer causers) and drugs for their anti-cancer potency. He said screening of cancer drugs might be speeded several hundred-fold by the new method.

A method that may make it possible to predict a person's susceptibility to heart attacks, even when no symptoms of such a condition are evident, has been developed by an American physician who injects radioisotopes into the heart to test the rate at which the blood flows through it. In a diseased heart, the blood flow is decreased by as much as 50 per cent, it is claimed.

The need for a simple diagnostic device in this field has been very great. At present the determination of blood flow in a diseased heart involves a somewhat hazardous and expensive procedure which requires the installation of tubes or catheters into the heart. The American physician claims this method is simple, non-harmful, and no more difficult to do or to interpret than a simple X-ray examination.

Dissolving the blood clot

A doctor of the Cornell University Medical College, in the United States has succeeded after a seven-year study in isolating an enzyme which may be the long-needed substance that dissolves human blood clots that have formed and threaten death.

The enzyme, which is found in human blood, is called fibrinolysin. While the doctor and his associates have given injections of fibrinolysin to only 45 men and women suffering from critical heart ailments, 39 survived. The remaining six were in a state of shock or of a hopeless heart condition before appearing for treatment.

The doctor said recently that injections of fibrinolysin would usually be given only in an emergency and that, although the enzyme might save many lives, it would not always be successful.

Other State Natak Sangham Award Winners.



It is hoped that fibrinolysin will also be helpful in other ailments besides heart conditions that involve blood clots. Among these are phlebitis, an inflammation of vein, to which young mothers are sometimes subject.

New Hormone

Dr. Daniel Rudman of the Goldwater Memorial Hospital in New York City has discovered a new pituitary hormone, which tests have shown to be more powerful than the well-known ACTH in making fat move in or out of body tissues.

Further experimental work with the new hormone, which is as yet unnamed, may yield new facts concerning the cause of atherosclerosis, a widespread form of hardening of the arteries, which is now under intensive study in the United States.

For the time being the new hormone is being called "Fraction L.". It has the properties of a protein, made up of a long sequence of amino acids. It will not be finally named until more is known about its biologic actions.

Electric Anaesthesia

Electricity has been successfully used on two patients to produce anaesthesia during surgical operations, *The Journal of the American Medical Association* has reported.

It is believed that these two cases are the first in which controlled electric current has been used as an anaesthetic in any successful major surgery, according to the authors of the report. They say that two advantages of the use of electricity are the rapid recovery of the patients and the absence of after-effects from the anaesthesia. The method warrants further study, they believe.

The operations for which the electric method were used were performed at the University Hospital of the University of Mississippi Medical Centre at Jackson, Mississippi.

The Third Plan

The Second Five-Year Plan has ended and on April 1, the country stepped into the Third Plan after a decade of planned development. The draft outline of the Third Plan has already been approved by Parliament and it is likely to be published in its final form quite soon. Work on the Plan, however, has started from April 1.

In the course of the 10 years of planning, the country's national income has gone up by 40 per cent. In spite of the 2 per cent rise in the population per year, the income per capital has risen by 19 per cent. Industrial production is up by 70 per cent and agricultural output by more than 33 per cent. In the field of consumption also there have been substantial rises. The consumption of foodgrains, for example, has gone up from 13·9 ounces to 16.4 ounces per head and of cloth from about 13 yards to 16 yards. Sugar consumption has increased by 78 per cent per head and the consumption of soap by 80 per cent. The social services have made considerable progress. There are 50 per cent more hospitals in the country today than in 1950–51. Six out of every 10 children now go to school. Diseases like malaria which used to take a heavy toll are in the process of being completely eradicated. Expectation of life has gone up and the death rate has fallen. The great tempo of development that has been created is reflected in the size of the Third Plan with an outlay more than 50 per cent higher than that of the Second Plan. The Third Plan is designed to increase the national income by 5 per cent every year and it aims at creating an industrial base in the country which is essential for self-sustaining growth.

Madras Pays Homage to Rabindranath Tagore

M. KRISHNASWAMI, *Secretary, the Madras State Tagore Centenary Committee.*

Rabindranath Tagore has been universally recognized as one of the greatest lyric poets the world has seen. There is not a single mode of literary expression which he has not used with conspicuous success. Supreme as a poet, he is hardly less so in his novels, short stories, his plays, social and allegorical in prose and verse, in his essays on social, political, philosophical and religious subjects, in his exquisite letters, in his illuminating literary criticisms, in his delightful books for children, in his autobiographical memoirs, etc.

Lofty personality

Rabindranath's range and depth as a writer are but one manifestation of his rich and lofty personality and it is perfectly true to say of him that he is greater even than his own creations. It is a mistake to think any one manifestation of Tagore's creativeness as isolated. Through all that he did—his writings, his compositions, his great work for Visvabharathi and Santiniketan, his fight against injustice and oppression in any shape or form, his part in the national struggle for freedom, his many travels in the east and west carrying the message of India to the people of the world, his close association with men of the highest stature in every land—rang an unmistakeable note of unity and harmony.

Manifold gifts

It is, indeed, a rare phenomenon for a single person to be endowed with such manifold gifts. By the greatness of his achievements and the majesty of his personality, he dominated his age and influenced the people of his race in every sphere of their lives. The eminent German philosopher Count Hermann Keyserling paid his tribute to Tagore in the following words: "There has been no one like him on our globe for many and many centuries. He is the creator of a Nation. I admire my great friend Rabindranath as I admire no other living man, because he is the most universal, the most encompassing, the most complete human being I have known".

Centenary in City

Rabindranath Tagore visited Madras three times and Madras cherishes vivid memories of the poet's visit to the City. The Government of Madras constituted a very influential Committee with the Governor of Madras and the Chief Minister as Chairman and Vice-Chairman, respectively and organized centenary celebrations in May on a state-wide basis. Under the guidance of Smt. Rukmini Devi, well-known exponent of Bharatanatyam and the Director of Kalakshetra, a very ambitious and colourful programme was drawn up. The celebrations in Madras were inaugurated on May 12 by Dr. S. Radhakrishnan at Rajaji Hall. Sri C. Subramaniam, the Finance Minister presided over the function. Kalakshetra provided a dance-drama as part of the programme on the occasion. A short programme of Rabindra Sangeeth by the Bengali Association and Nagaswaram recital by a reputed Vidhwan were some of the highlights of the cultural programme on the day.

Play Production

The Committee has drawn up a programme to produce Tagore's plays in various languages. Leading institutions like Kalakshetra, Bengalee Association, Samskrita Ranga, Madras Natya Sangh, Madras Players, Andhra Maha Sabha, Kerala Samaj, Amateur Theatre Federation and Karnataka Sangh have agreed to produce Tagore's plays. It has been decided to conduct a course on Tagore's music in July with the help of a well-known exponent of Rabindra Sangeeth. Kalakshetra, described as the Shantiniketan of South India, is going ahead with the programme of production of a dance-drama. It is proposed to translate the Tagore Centenary volume into Tamil. Scholarships will be awarded to a few students for advanced courses in painting at Shantiniketan.

The Tagore Centenary Celebrations were arranged in every district of the State and varied cultural programmes were gone through at every centre. The festivals generated great rejoicing and enthusiasm among the public and the State seemed not to lag a whit behind any in its Homage to the National Poet.

Industries Minister Venkataraman presided and distributed prizes on the Hostel Day of the Central Polytechnic recently. In the picture he is seen giving away a trophy.



The Fight Against Rinderpest

[Conservation of cattle-wealth is of paramount importance in a country like India whose economy is predominantly agricultural. In this task, the fight against Rinderpest is of vital significance since this disease is the greatest single factor responsible for cattle loss in India. This article gives a brief account of the history of the disease and measures taken to eradicate it since 1954 when a pilot project for the purpose was inaugurated under the First Five-Year Plan]

Of the contagious diseases that affect cattle, rinderpest is the most serious. Its main characterestics are fever and inflammatory lesions of the mucous membranes and the gastro-intestinal tract. It is estimated that 200,000 animals die of this scourge every year. Those which survive after an attack are generally unfit for work, breeding or milk production. The annual financial loss in India is estimated at Rs. 30 to 35 crores.

The Union Minister for Community Development, Sri S K Dey, recently opened the Council Hall of the Panchayat Union at Uttiramerur



Commonly known as "cattle plague", rinderpest was introduced from China into western Asia early in the first century A.D. It then spread to Europe and Africa. It was eradicated from Europe by the end of the 19th century. It is endemic in the Soviet Union, India and other Asian countries and Africa and has been recognized as a contagious disease from the 18th century. It is transmitted by direct contact of diseased animals with healthy ones or indirectly through the medium of food, water, clothing, utensils and hides freshly contaminated with infectious discharge.

Immunisation methods

Research on rinderpest began over 55 years ago, and various methods for the immunisation of animals against the disease have been developed. Among these are the goat-virus methods of vaccination. Goat-adapted virus vaccine was developed at the Indian Veterinary Research Institute, Mukteswar, in 1927 and has been widely used against rinderpest in India and Africa.

While goat-virus vaccine is safe for immunising animals with some degree of natural resistance, it produces undesirable reactions in fully susceptible animals, such as European cross-bred and hill-cattle. Passage of the virus through other types of animals showed that the rabbit was the suitable animal for this purpose. This led to the production of lapinized virus vaccine which can be used satisfactorily on highly susceptible animals without ill-effects. For the control of rinderpest today, we have these highly efficient virus vaccines which are relatively easy to produce on a large scale.

Eradication scheme

The programme of rinderpest eradication in India is one of gigantic proportions because of our large livestock population. The cattle and buffalo population in 1956 was 158,863,000 and 44,766,000 respectively—1/5th of the world cattle population and 1/2 of the buffalo population.

The Rinderpest Eradication Scheme was begun as a pilot project in 1954 under the First Five-Year Plan. To begin with, the area south of the Krishna River, in the States of Kerala, Mysore, Madras, Andhra Pradesh and Bombay was brought under the campaign. During 18 months of the First Five-Year Plan, six million head of cattle and buffaloes were vaccinated. This encouraged the Government to extend the scheme to all other States in the country.

Vaccine production

At present there are six vaccine production centres—at Izatnagar (U.P.), Calcutta, Lucknow, Ranipet (Madras), Hissar (Punjab) and Mhow (Madhya Pradesh). They produce adequate quantities of vaccine for use in India. Supplies have also been made to neighbouring countries—Nepal, Pakistan and Afghanistan.

In the first five years of the Rinderpest Eradication Campaign, 132,554,000 doses of vaccine had been produced and over 68,000,000 head of cattle and buffaloes vaccinated. The States of Mysore, Andhra Pradesh, Maharashtra, Bihar, Delhi, Himachal Pradesh completed the work by March 31, 1961. The work of eradication in other States is likely to be completed by the end of the third year of the Third Five-Year Plan.



The Uttiramerur Panchayat Union Office

There is constant danger of the disease being brought in by animals from neighbouring countries. To prevent this, a number of land quarantine stations have been established, especially on the border with Nepal. All along the border, a 10-20 mile-deep 'immune belt' is being established by vaccinating all the animals in the area.

Projects to help landless labour

A sum of about Rs. 21 crores has been provided in the Third Plan for directly helping landless labour to settle on land. This was stated by Shri Shriman Narayan, member of the Planning Commission in New Delhi, while addressing the first meeting of the Central Advisory Committee on Agricultural Labour. He said it was proposed to distribute about 50 lakhs acres of land to seven lakh families of landless labourers in different States. As far as possible, lands proposed to be distributed would be unreclaimed, and the allottees would be given assistance for the purchase of bullocks and implements.

The Advisory Committee, among other things, recommended a programme for the provision of house-sites to 50 lakh families, free of cost, out of available Government lands or sites specially acquired for this purpose at a cost of Rs. 10 crores. Assistance was also recommended for the construction of houses.

The Committee laid great emphasis on augmenting special works programmes for providing employment to the unemployed and underemployed in the rural areas. In this connection, the Committee was apprised of the 34 Pilot projects, recently sanctioned by the Planning Commission, for the utilization of rural manpower on productive works and works of public utility.

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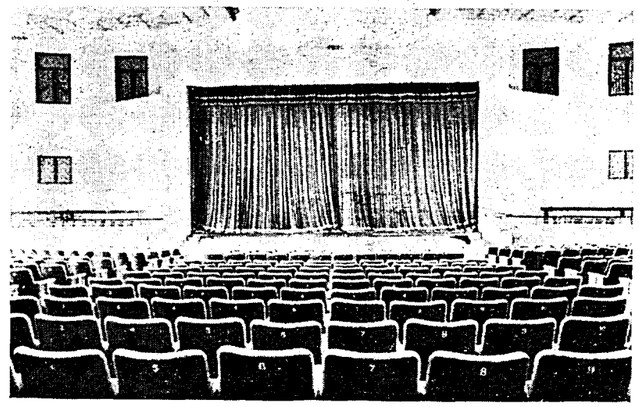
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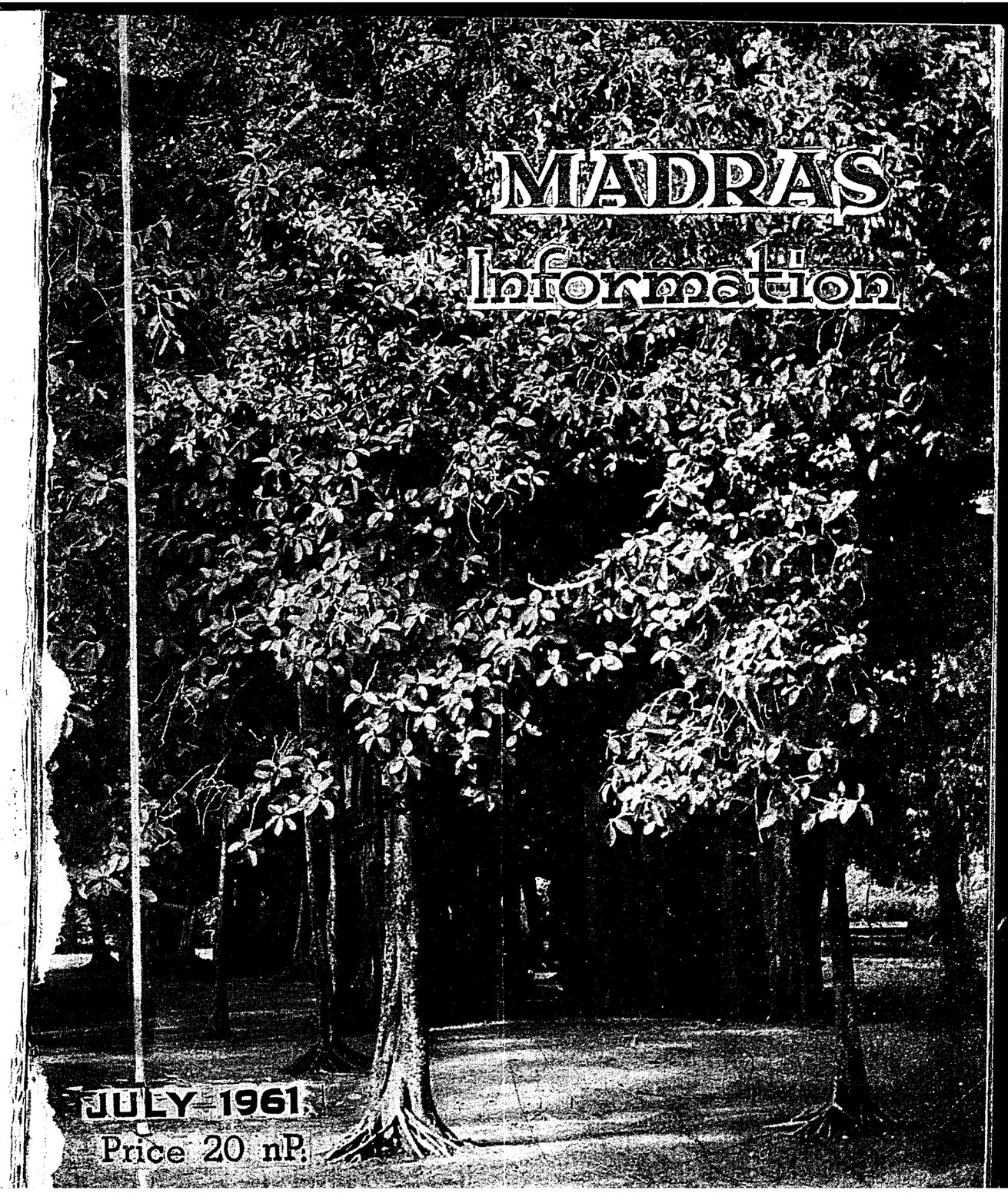
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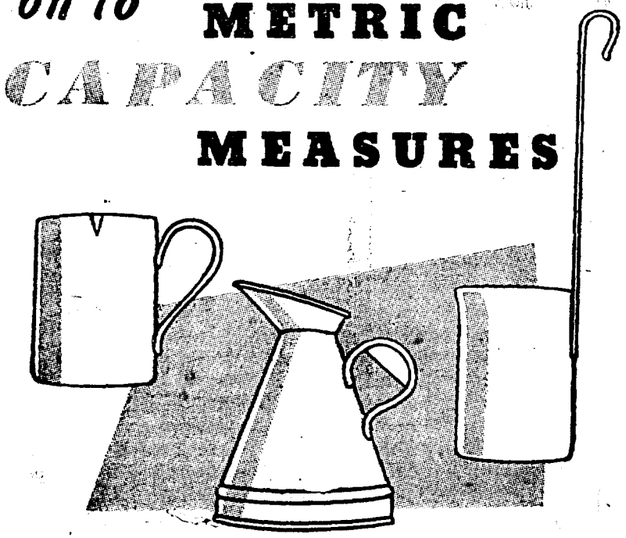
This month's cover

'Vanamahotsava' which is celebrated this month is an international festival and is observed all over the world as the 'Festival of the Forests', 'Festival of Trees', etc. The celebrations are designed to focus attention on the need to preserve and promote forest wealth and on the importance of forest wealth for survival. Our choice for the cover this month has been the banyan tree for it provides a fine symbol of solidity, strength, durability, shade and support.

on to **METRIC**

CAPACITY

MEASURES



From APRIL 1, 1961, the use of Metric Capacity Measures is compulsory in the Union Territory of Delhi.

In selected areas in the rest of the country, Metric Capacity Measures have been introduced with option to use old measures for one year.

The unit of capacity is LITRE

1 LITRE
=1.1 Seers approx.
=3 Nazhis approx. (Kerala)
=4.5 Ollocks approx. (Madras)

METRIC SYSTEM FOR *Simplicity & Uniformity*

DA 51/109

ISSUED BY THE GOVERNMENT OF INDIA



Festival of Trees

[The season of fallowness is over and July has ushered in the sowing season. The monsoon is near. And 'Vanamahotsava' is being celebrated. There is much appropriateness in the sowing season synchronising with the tree-planting festival for there is considerable common ground in the underlying philosophy and ideology of these efforts. This article released in connection with 'Vanamahotsava' is not only a call to conserve forest wealth, but also explains the role of trees in the scheme of life. Details of how this international festival of trees is celebrated in other countries are also given.]

Planting and maintenance of trees are universally recognized as fundamental and purposeful pursuits not merely for mankind's progress but for the very survival of human and animal life. Trees are sustained by land, water and air and reciprocally, they give back to Nature all that the elements contribute to their sustenance. The creation of vast forest assets is therefore regarded as essential to any country's progress, protection and prosperity.

In India the alarming rate of denudation of its forest and timber wealth was noticed soon after Independence and in 1950 "Vanamahotsava"—the annual tree-planting festival was inaugurated. In over a decade this festival has acquired a special significance in our national life. This year, again, Vanamahotsava is being celebrated throughout the country for a week from the 1st of July.

Perennial Source

This is as it should be for trees not only beautifythe land, provide shade, yield flowers and fruit and are a perennial source of fuel, timber, fodder and a host of other products, but also help control floods, preserve moisture in the soil, check the ravages of erosin and act as catalysers in inducing rainfall.

Expressing concern at the cutting down of trees in various parts of the country, the Prime Minister, Sri Jawaharlal Nehru, pointed out some time ago, "It is easy to cut down a tree; but it takes a generation to grow one. Not a single tree should, therefore be cut down unless absolutely necessary. On the other hand, every attempt should be made to plant and raise more trees. The need for after-care of trees planted is even greater."

Natural Wealth

Vanamahotsava, which literally means "Great Festival of Forests", is the tribute of the human race to its benefactor—the forest; it is also the nation's call to the people to conserve, improve and augment what has always been and will continue to remain one of the greatest sources of natural wealth.

In the words of Gautama, the Buddha: "The forest is a peculiar organism of unlimited kindness and benevolence that makes no demands for its sustenance and extends generously the products of its life activity; it affords protection to all beings, offering shade even to the axeman, who destroys it".

Festivals elsewhere

These festivals are celebrated all over the world under such names as "Arbor Day" or "Arbor Week", "Tree Holiday" and "Festival of the Trees". There is also the "Greening Week" in Japan, "The New Year's Day of the Trees" in Israel, "The Tree-Loving Week" in Korea, "The Reforestation Week" in Yugoslavia and "The Students' Afforestation Day" in Iceland. The annual celebration of Vanamahotsava, inspired by ancient Indian traditions, is India's festival and is of great significance.

Trees adorn our homes, our cities and villages. They provide shelter to our farms and to our wild life. They afford restful shade and peace from the worries and turmoil of daily toil when we seek their healing presence in recreational parks and national reserves. Trees provide fuel, fodder, timber and fruit. As windbreaks and shelter-belts they help to protect field crops. The abundance or absence of tree crops have a direct bearing on industrial development, social progress and national strength.

In the Soviet Union

The Sixth Session of the Conference of the Food and Agriculture Organization of the United Nations realising the need of arousing mass consciousness of the aesthetic physical and economic value of trees recommended that a World Festival of the Trees be celebrated annually in each member country on a date suited to local conditions.

In the Soviet Union specially-bred fruit and berry trees, which support bees and birds, apart from increasing food and wine supplies, are planted even in the shelter-belts These trees are attractive to bees at blossom time and prove of wider interest than with reference to bee-keeping only. Such bees visit other flowers also and help in the wider incidence of cross-pollination in agricultural and other crops, which in turn leads to improvements in the quality and quantity of those yields.

In the U.S. and New Zealand

In New Zealand emphasis is given on planting of shelter-belts and of new highways, " the creation or preservation of the native silva " and increased attention to " aspects of social forestry, such as planting and preservation of amenity trees and food-producing trees, particularly bee trees ". In the United States, two new elements have been introduced into the Arbor Day plan—the day has been made a school festival and the practice of planting memorial trees and groves has been started.

In Iceland there is a Students' Afforestation Day Act by which tree planting is made compulsory on one day a year during school term and at a time when afforestation conditions are favourable. In the United Kingdom the Forestry Commission apart from providing the seedlings for Arbor Day planting ceremonies, also allocates plots of existing forest in various stages of development to schools who "adopt" them and are responsible for their care and maintenance. In Italy prizes are awarded to children who have given particular attention to the care of trees, and tours are arranged to observe the results obtained in other areas and in previous years.

Vanamahotsava

In India the observation of Vanamahotsava is no longer considered a celebration or formality to be observed just for a day or a week but has been accepted as an act essential for present progress and as a symbol of faith in the future: Much more important than the mere act of planting trees, considerable emphasis is now being laid on the maintenance and after-care of planted stock. The Prime Minister has directed that no tree should be cut down unless there is no feasible alternative to it or it is inescapably necessary. Dr. Panjabrao S. Deshmukh, Union Minister for Agriculture, in a circular letter to the Chief Ministers of States two years ago stated that " one of the most satisfying things a man can do is to plant a tree. " He thus earns the goodwill of posterity. And when he rears, protects and helps the tree to grow into an asset in more ways than one. he ensures that good will in abundant measure.

Audio-Visual Aids for Schools

The National Advisory Board of Audio-Visual Education has recommended that the possibility of providing audio-visual aids to all schools in the country by collecting small contributions from students themselves be explored. The National Board, which met in New Delhi, set up a sub-committee consisting of eminent educationists, specialists and administrators, to advise the National Institute of Audio-Visual Education in the production of audio-visual aids including classroom instructional films. Members of the Board also suggested that educational films and film strips should be treated on par with text-books in so far as sales tax was concerned.



[This feature article by Dr. R. M. Marathey on the role of broadcasting in history is presented in connection with the Silver Jubilee of All-India Radio celebrated recently. The tape and disc recordings wherein the voices and personalities of the makers of the country's history and memorable national events in their authentic atmosphere are caught and preserved for the benefit of succeeding generations are described by the author as All-India Radio's historical archives. Future historians are likely to look for source material in these recordings in addition to the references that they may seek in other historical records and documents. Therefore, the author feels that these recordings provide history of a new type.]

Everybody is aware of the National Archives where invaluable records and documents of the nation's history are preserved. But few perhaps know of All-India Radio's archives consisting of equally invaluable material in the form of tape and disc-recordings which preserve for posterity the voices and personalities of those who made India's history.

There are voices of great men and great musicians and what is more, records of historic events cast in their authentic and original atmosphere, in which a whole nation has celebrated in joy her freedom or mourned in sorrow the loss of the greatest of her sons. This is history of a new type. History which needs no interpreter but which speaks for itself, speaks often through the mouth of those who shaped its events and moulded its course. A living, moving, inspiring history for future generations to hear and feel with the same warmth and spontanity with which those who made it lived and felt it.

Vivid Images

Here then they echo through the corridors of time these voices from the past, distant but not dim, bringing with them ideas and images as vivid and vital as did ever adorn the pages of history.

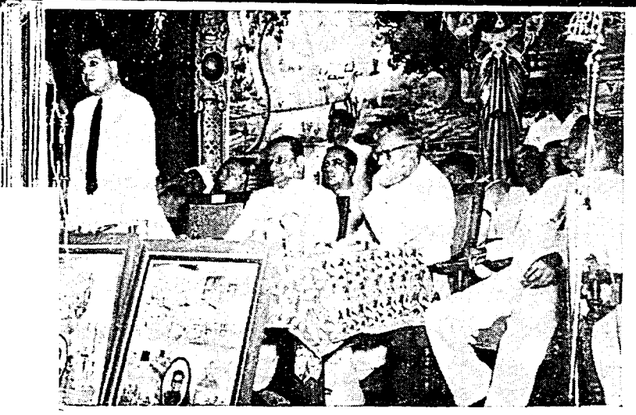
. . . . The historic session of the Constituent Assembly of India to which sovereign power was transferred on the midnight of August 14–15, 1947—'a day appointed by destiny' (Jawaharlal Nehru's words) with whom India 'had a trust'.

. . . . The slow and halting progress of the State-Funeral of Mahatma Gandhi described in a moving commentary to a mourning nation which followed him to his eternal rest. . . . . .

. . . . Pepsu and Greater Rajasthan have come into being and with it Sardar Patel's dream of integrating India—the first time in her chequered history—has gloriously come true. 'Today is a day in a century' said he. . . .

Birth of a Republic

. . . . A Constitution is formed and implemented. In General Elections based on universal adult franchise a hundred and seventy million voters have chosen their



Sri H. V. R. Iyengar, Governor of the Reserve Bank, who inaugurated the Tamilnad Co-operative Conference at Kumbakonam recently is seen addressing the conference delegates.

representative. A new President has also been elected, and is sworn in while, through the radio, the whole nation acclaims him as the head of their Sovereign Democratic Republic.....

....The sacred relics of two of Buddha's disciples, Sariputta and Mahamogallana, are brought to Sanchi and deposited in a Vihar specially constructed for containing so precious a treasure.....

....The First Asian Conference is held in the historic Purana Qula of Delhi. Sarojini Naidu presides. Gandhiji calls upon the delegates to visit as many villages as they can to see real India.....

Its Progress

....Also the Indonesian Conference—the first International Conference of its kind on the Indian soil. Herself free and independent, India extends a hand of friendship to other nations, still under the yoke of colonial powers....

....The President confers awards of merit on distinguished musicians from the North and the South.....

....The New State of Andhra is inaugurated by the Prime Minister amidst moving, memorable scenes.

....Water is let into the Nangal Canal; a new locomotive is put on the rails; there is a threat of famine or floods; a new ship is launched; a new national laboratory is opened; another national leader passes away; a new akademi' for arts or drama is inaugurated, andso it goes on. A new nation forges ahead, toiling, rejoicing, sorrowing. And All-India Radio close to the people, near to their hearts and souls, joins in their celebrations, condoles their calamities and all the while keeps a faithful record of the nation's activities-small or great, momentous or momentary of local, regional, national or international importance.

Thrilling Account

This is All-India Radio's contribution to the historian of the future. In the numerous recordings made and preserved of these great occasions, the historian of the future will find a thrilling account of great men and great events speaking aloud for him to hear and let others hear through him. All India Radio as a modern Herodotus recounting his epic adventures with the accuracy of a scientist and the art of a Homer. And often, stories retold by those who took prominent part in them; history in the first person singular.

Thus All-India Radio has nearly sixty hours of the recordings of the prayer addresses of Mahatma Gandhi which he delivered at Delhi day by day for five months before his death in January 1948. In this unique evidence posterity can feel and hear the momentous events in the first five months of a new nation's life, difficult months, crowded months, unforgettable months.

Tragic Trail

The celebrations in Delhi are hardly over when the tragic trail of millions of refugees starts moving into Delhi. Disturbances break out. Gandhiji, who is holding the Eastern front from a similar disaster, returns to Delhi from distant Noakhali in East Bengal. He finds Delhi 'a city of the dead'. He does not despair. Day in and day out he comforts the suffering, strengthens the weak and exhorts the strong to overcome this communal frenzy. At first his words fall on deaf ears. But he persists. Then slowly, imperceptibly he feels Delhi returning to sanity and normality. He rejoices. Undertakes his last fast. Talks of moving up to the frontier in the Punjab, now that his mission of peace in the capital has begun to bear fruit. There is a smile on the lips of the old, undaunted warrior. A light in his eyes. And then the terrible tragedy of his assasination falls like a bolt from the blue. Delhi is enveloped in darkness again. The light has gone out.

These and other events—India rushing to Kashmir's help (Gandhiji sees the planes flying overhead), the integration of States, Junagadh and Hyderabad—are preserved in these invaluable recordings of which the author is none other than the Father of this new stumbling, erring, recovering and marching Nation!

Tributes to Gandhiji

The moving tributes paid by a shocked and sorrowing world to this apostle of truth and non-violence are yet another precious possession of All-India Radio. 'Like a king' said Sarojini Naidu 'he died in the Capital'. The homage that was done to this man of the people, this saint, this yogi, would have been indeed the envy of any king or emperor. For it was not an empty crown that they honoured or lost. Rather they mourned the loss of one who was well and truely a father, friend and philosopher to them all.

The speeches of Sardar Patel are in these archives. No national monument could more fitly preserve the glory and greatness of this man of destiny than these full, frank and free utterances in which he has bequeathed a rich legacy, the wisdom of a century to his countrymen.

Sarojini Naidu's Speeches

Sarojini Naidu, poetess, patriot, orator, a devoted disciple of Gandhiji (one of her records is entitled 'Bapu, the Micky Mouse') also lives with her song and musical speech in a cosy corner of this house of fame.

Besides the past dead the living present also finds niches in the All India Radio archives. Thus are recorded and preserved almost all the important speeches of our Prime Minister. Important pronouncements like the decision to create Pakistan, messages from national and international leaders—Ramon de Valera, Chou En-lai, Tito, Eisenhover, Rajendra Prasad, Eleanor Roosevelt, Krushchev, Clement Attlee, Mohamed Ali Jinnah, Crown Prince of Japan.....to mention only a few, have also been recorded and are preserved.

Music of the Masters

Yet another section of the archives is reserved for the recordings of great musicians—past and present. Thus the music of Ustad Faiyaz Khan or of T. N. Rajaratnam Pillai will live for a hundred years for their pupils and admirers. So will be preserved through special recordings the beat that is in each of the current musical schools and traditions.

Just imagine if only the music of Tansen or Thyagaraja was thus preserved! If only the famous Gettysberg speech of Abraham Lincoln could be heard today: "Dedicated to the principle that all men are born equal".

Scholarships for Teachers' Children

The Government of India have decided to award 500 Post-Matric Merit Scholarships every year to the children of Primary and Secondary School teachers in the country. The first of these awards will be made during 1961 on the results of the School-leaving examination (High School/Matriculation/Higher Secondary/Senior Cambridge, or other School-leaving examination) held in March-April 1961, and only those who have appeared in these examinations in 1961 will be eligible (except in the case of Senior Cambridge, for which the examination held in December 1960, will be taken into account).

Only those candidates will be eligible to apply who have obtained at least first Class or where there is no Class or Division, at least 60 per cent marks in the aggregate in the school-leaving examination.

Intending candidates for these awards may obtain full information from the relevant authorities of the State Governments and the Union Territories, viz., Inspectors of Schools, Directors of Public Instruction/Directors of Education. Applications must be submitted direct to the State Governments within 30 days from the date of the announcement of the scheme by the State Governments

Parambikulam-Aliyar Project

SRI U. ANANDA RAO, *Special Chief Engineer, Parambikulam-Aliyar Project.*

[The Chief Minister, Sri Kamaraj, recently declared open the bridge below the Parambikulam Dam and inaugurated the masonry work on the Dam. The Special Chief Engineer, Parambikulam-Aliyar Project, welcoming the Chief Minister and others, referred to the keen interest taken by Government in the promotion and execution of irrigation and power projects and to Government's appreciation of the role of these projects in stepping up the tempo of food production and industrialisation in the State. He made use of the occasion to give an account of the project. This article carries the substance of his account.]

The Parambikulam-Aliyar Project is a mammoth multi-purpose project of Madras State included in the Second Five-Year Plan. It is designed to utilize the water and power potential of some of the west flowing rivers, such as Nirar, Sholiyar and river Parambikulam which have their sources in Anamalai Hills of Madras State, but flow through Kerala State and empty themselves into the Arabian Sea. Dams will be constructed across the rivers at suitable points and the reservoirs thus formed will be interconnected through tunnels. This water will be brought from the highest reservoir across Nirar to the lowest reservoirs across Aliyar and Palar, from which canals take off for irrigation.

Overview of the delegates who attended the Tamilnad Co-operative Conference at Kumbakonam.



The Project envisages construction of seven reservoirs one across each of the rivers Nirar, Sholiar, Parambikulam, Tunakadavuz, Thekkadi, Aliyar and Palar. The flows of the first river, Nirar, together with surplus of Sholiyar, after satisfying the power needs of Kerala, will be stored in Parambikulam reservoir. Masonry for this reservoir was inaugurated recently. This is a key reservoir in this scheme, receiving waters from several rivers above for diversion to the hungry and dry plains on the east.

Mutual Benefit

Parambikulan, Tunakadavu and Thekkady reservoirs are located in Kerala State. This is an inter-State Project, which is of mutual benefit to both the States of Kerala and Madras. The project not only stabilizes the existing irrigation in Chittoor area of Kerala but also guarantees sufficient water for successful generation of electricity in all years from the Sholiyar Reservoir. This inter-State Project has been taken up with the full consent and active co-operation of the Kerala Government.

Negotiation had gone on between the two Governments for some time and under the able guidance of the late Sri Govind Vallabh Pant, Home Minister of Government of India, an amicable settlement was reached. The project will irrigate an extent of 240,000 acres in the dry and arid regions of the Coimbatore district, and will produce power with an installed capacity of 180,000 K.W.

Dam Masonry

The Parambikulam Dam masonry will be straight gravity dam 180 ft. high from the river with a top width of 18 ft. and maximum base width of 160 ft. The length of the masonry dam is 1,000 ft. in the river and that of the earthen dam is 1,800 ft. at the left flank saddle. Surplus weir consisting of 3 spans of 42 ft. will be located at the centre of the masonry dam. Though the Reservoir has a gross capacity of 16,500 m.cft. live storage will be in the order of 9 .. cft. only.

The bridge across the Parambikulam river below the dam has been completed and besides giving access to the works on the left flank, it forms an important and useful link between Madras and Kerala. The bridge consists of 5 spans of 30 ft. The piers and abutments are of random rubble in cement mortar 1 : 5 with hammer-dressed stone facing. The cost of the bridge is Rs. 2·25 lakhs only.

The Second stage

Preliminaries connected with the Project were started in 1958. Constructing quarters for the staff and workers, laying of new roads, improving existing roads, erecting power lines, excavation of foundations for the dam, have all been completed and the first stage of the work is over and a start is being made in the second and important stage, viz., construction of masonry for the masonry dam.

The expenditure incurred on the project during the last two years is nearly Rs. 4 crores and almost an equal sum is proposed to be spent during the current year (1961–62) which is the first year of active construction. The annual expenditure from the next year onwards (1962–63) will be in the order of Rs. 5 crores and the project work will virtually be completed by the end of the Third Five-Year Plan. Work on the Aliyar Dam (one of the seven dams of the Project) is in full swing and will be completed by July 1962 when water will be let down for irrigating an extent of about 20,000 acres.



Sri R. Venkataraman, Minister for Industries, giving away an award to a representative of the Salem Co-operative Central Bank which was adjudged one of the best co-operatives in the State.

Phased Programme.

The programme for other works will be so phased that reservoirs and canals that give early benefit are taken up and completed first. All canals together with distributaries and field bothies will be completed along with the dam and diversion works and there will not be any time lag between the creation of water potential and actual utilization of it by the riots.

In view of the peculiar nature of the project in difficult terrain many day-to-day problems arise during execution. To tackle them with the least possible delay and to see to the speedy execution of the works, the Headquarters of the office of the Special Chief Engineer was shifted from Madras to Pollachi. This shifting of the office of the Special Chief Engineer from Madras and that of the Superintending Engineer, Parambikulam-Aliyar Project Circle, from Amaravathinagar to Pollachi was with a view to facilitate quicker inspection of the works by the Chief Engineer and the Superintending Engineer and speed up communications of instructions and decisions to the field officers, so that the execution of the Project works will be characterized by utmost speed and efficiency.

Tourists to India

Over one lakh twenty-three thousand tourists visited India last year. This was an all-time record and marked an increase of 12·5 per cent over the figure for 1959. Of these, those who came from Europe numbered 37,107 ; from South, East and South East Asia, 32,551; from U.S.A. and Canada, 28,678 ; from Africa, 14,389 ; from West Asia, 6,771 and, from other countries, 3,599. These statistics reveal a stror
U.S.A. constituted the bigge

TUBEWELLS AID Farm production

SRI. K. VARADACHARI, *Retired Joint Director of Agriculture.*

[*From the time that the happy idea of the tubewell originated in the South sometime in* 1951, *it has caught on and the filter-point tubewell has been increasingly commissioned for farm operations in the State during summer and fields that originally lay fallow during the time are used for the cultivation of cotton, vegetables, groundnuts and early paddy nurseries. This article reproduced from 'Yojana' gives an account of the history of the filter-point tubewell in the State.*]

In 1951 Mr. K. S. Vengu Chettiar, a farmer at Mayuram, adras State, was faced with a problem. Water was not t available from the river channels for his summer crops, paddy nursery and his vegetable gardens. He hit upon idea of installing a small tubewell. With the help of oil engine and pump he was able to go ahead. The ate's Director of Agriculture saw the tubewell, and, as esult the whole outlook for summer cultivation in the ate changed. Mr. Chettiar's example was taken up in ny localities in the then undivided Madras State, parti- arly in Andhra Pradesh and the West Coast. By abling summer cultivation, land and labour were put more intensive use and profit. The fields which were e fallow were now dotted over with one-room structures sing oil engines or electric motors for irrigation from er-point tubewells, helping the growing of cotton, vege- bles, groundnuts and early paddy nurseries.

e Experiment

n the Kaveri delta in Thanjavore district, the land lies ow from January-February to June—between the vest of the main paddy crop and the next season's first p of short-duration paddy. The stiff clay soil cracks he summer heat and moisture. The problem of growing reen-manure crop suitable for most of the delta area as ll as putting the land to maximum use appeared till recently to rest on the availability of water for irrigation. The solution was found in shallow tubewell irrigation.

The possibility of installing such tubewells—known as filter-points—all over the Thanjavore delta became clear at once. The Agricultural Engineer of Bapatla (now in the Andhra State) devised equipment that could be easily made and operated by the farm-hands after a mere three days' training. It consists mainly of a worm auger to bore holes in the soil, a sand shell or baler to take out the soil and another material from out of the bore hole and a tripod of casuarina posts, pulley and clamp, required for the rig. In December 1951, the Government sanctioned a scheme for the installation of 10 tubewells in the Thanjavore delta. The enthusiasm of the cultivators was so great that the target was easily exceeded.

At first the filter-points had to be procured from outside the State. But local production was soon encouraged and the Ex-Servicemen's Co-operative Metal Works Society, Kumbakonam, began manufacturing the filter points. Starting at a rate of manufacture of one per week, the Society gradually met the increasing demand from all over the State, making six to eight filter points per day.

The scheme was extended to other districts in the composite Madras State. The actual cost of the filter-points and sinking was recovered from the 'ryots' so that the whole project became self supporting. Loans up to

Rs. 2,500 were granted to each cultivator in the shape of pumping machinery for the filter-points on hire-purchase basis. Loans up to Rs. 400 were also granted for the actual cost of each installation, including working charges and cost of pipes and filter points. During the First Five-Year Plan, 2,671 filter points were installed at a cost of Rs. 58 lakhs. The provision made in the Second Five-Year Plan is for 600 filter-points each year.

Special Advantages

In the Southern States there are three sources of irrigation—rivers, tanks (or ponds) and wells. Generally wells are 25 to 30 feet deep, with a diameter of 15 to 30 feet, and provide a large area for percolation. In the soils which hold large quantities of water, there is a plentiful supply for pumping by oil engines or electric motor. In the deltaic areas the top soil is clayey and does not hold enough water for irrigation. But below this clayey level, in the sandy layers deeper down, there are perennial supplies of water at depths varying from 30 to 120 feet. Digging wells to such depths is difficult and expensive. The filter point is therefore an easy and cheap device for tapping such supplies. This had not been considered possible until the Director of Agriculture at that time, Mr. M. S. Sivaraman, in 1951 demonstrated its practicability.

The filter-points can now be installed down to any depth. When the water from below rises up the tube to a few feet from ground level, it is pumped out by an oil engine or electric motor. During the course of pumping, the water level in the pipe would go down but so long as this remains within a range of 25 to 28 feet from ground level, pumping with the ordinary centrifugal pumps becomes easy.

Improvements

The usual filter point is of the wire-mesh type. It consists of a six-foot-long pipe, three or four inches in diameter with holes of half to three-fourth inches wide, drilled one to one and a half inches apart for a five-foot length of the pipe, leaving half a foot at top and bottom. The holes in the consecutive layers are staggered for strength. The holes let in water into the tube-well, and to prevent sand particles coming in, the holes are covered with 60-guage-strong brass or copper wire-mesh. The mesh is protected by a perforated brass or galvanized iron sheeting of 27 guage soldered on to the mesh. A solid octagonal pyramid of cast iron shoe is fixed to the bottom of the pipe. A length of piping is used over the filter point until the ground surface is reached. The whole assembly consisting of filter-points and the pipe is called the filter-point tubewell.

Investigations have been made for lowering the cost of the filter-point. As a result of trials, a coir filter-point was evolved in 1954. The coir filter serves the same purpose as the wire-mesh filter in filtering water in a sandy stratum and letting in clean water into the tube. Iron pipes are not required : instead a cylindrical cage is made of iron flats and the coir is wound over this. This has the further advantage of having a larger pore area with the resultant increase in yield of water. This is also found useful in places which are not very sandy. The coir filter-point lasts longer and costs about a fifth of the wire-mesh filter-point. It can easily be made even by village blacksmiths. Yield trials have shown that the coir filter-points yield 15 to 25 per cent more water than wire-mesh filter-points.

Increased Production

At first three-inch filter-points were installed at depths ranging from 30 to 40 feet. By using an oil engine of five to seven horse-power or an electric motor of five horse-power with a three-inch pump, 8,000 to 10,000 gallons of water could be pumped out in an hour. In some parts of the Kaveri delta like Thanjavur, Tiruchirappalli and parts of South Arcot district, Kolinji (or wild indigo) is grown for green-manuring of paddy. Kolinji, being unsuitable for the heavy soils, would yield about 2,000 lb. (or two cart-loads) of green manure per acre. This quantity is not enough for a paddy crop that requires a minimum of 5,000 lb. of green manure. Thus, for an inadequate supply of green manure, the farmer had to utilise his entire paddy area for growing Kolinji in the offseason. But a farmer with a holding of ten acres and a filter-point can now completely change his system of cultivation.

After the harvest of paddy in January or February, up to the time of planting his first crop of paddy in July, he can grow eight acres of summer crops like irrigated cotton, groundnut, millets and vegetables. One acre can be set apart for raising paddy nurseries and in the other acres Sesbania Speciosa can be grown on a field scale by sowing in the field prior to the harvest of paddy. This crop of Sesbania Speciosa, when allowed to grow till June with the help of summer showers only, will grow tall and luxuriant and yield enough green leaf for manuring all the ten acres adequately at the rate of five cart-loads per acre. The farmer can thus get a plentiful supply of green manure for all his lands without having to use the entire area for only this purpose. At the same time he can raise early paddy nurseries with the help of irrigation from the filter-point.

Early Completion

The raising of early paddy nurseries in areas commanded by irrigation projects is of very great value to the paddy farmer since he can advance the cultivation by

about three weeks by having the seedlings ready for planting by the time water is received in the channels. The early-grown first crop of paddy (Kuruvai) always gives higher yield. It is likely to escape the insect pests that usually appear at the harvest time of the later planted crops. Again, the advance of the first crop results in the advancing of the second crop as well. Normally about a fifth of the paddy area in the Kaveri delta is under double-crop cultivation. If the first crop is delayed, the harvest of the second crop also is delayed, so that at the fag end of the season, in order to help the maturing of the crop in different stages of growth, one-fifth of the delta requires to be provided with water, much of which is necessarily wasted in the remaining four-fifths as well. Thus the reservoir gets unnecessarily depleted and such depletion after a poor rainfall, causes difficulty in summer for hydro-electric supplies and also puts off the opening of the reservoir for the next season till sufficient storage is received. Thus an early opening of the reservoir is a corollary to a uniform completion of the growing period of the second crop of paddy and early closure of the reservoir. Therefore, to the extent to which ' ryots ' advance cultivation of the first crop, the paddy cultivation is completed early and with good yields. Also the longer interval in summer is beneficial to crops like cotton.

In the Kaveri, Godavari and Krishna delta and the Palar basin, underneath the clay or loam surface, there are stretches of sandy subsoil, which like a great sponge holds up immense quantities of water. This supply is annually replenished from freshes in the river. By boring into these water-bearing strata and installing filter-points, it would be possible to tap the vast underground supplies to advantage. A filter-point can be installed in a couple of days at a cost of Rs. 500 much cheaper than a well.

New Appliance

The installation of filter-point does not require much technical skill. The equipment, as described earlier, is simple. The first layer of clay is screwed out by means of the auger, a bigger-size casing pipe is intr[illegible] lowered by degrees by removing the clay [illegible] is struck. From this depth the sand shell is used to deepen the bore until the water stratum is struck. Then the filter-point is let in with the necessary length of pipes and the casing pipe removed.

A cheap appliance by which the filter point can be worked by a pair of bullocks has also been evolved. This yields 25 per cent more water. Even a small farmer can instal a filter point in his holding and use his bullocks for working it without going in for an oil engine. A vast area of land can be cultivated in summer if only there is supply of water. The filter-points provide this supply in many places and it is up to the farmer to put his land to its maximum use.

Encouraging Handloom Co-operatives

The Union Government have decided to continue to encourage co-operatives in the handloom industry during the Third Plan as recommended by the Working Group on the Handloom Industry. At the same time, the centre has expressed the hope that State Governments will carefully consider the working group's recommendation to assist weavers outside the co-operative fold. Government have also accepted in principle the suggestion that the share capital of existing societies should be increased and that dormant societies should be revived. About the credit requirements of Weavers' Co-operative Societies, Government feel that it should be obtained through the Reserve Bank and other institutional agencies. These agencies will be requested to help the smooth flow of credit to co-operatives.



Small Scale Industries For Prosperity

S. MUTHIAN, *Deputy Director of Industries and Commerce (Small-scale Industries).*

[*In an industrially under-developed country with an economy that is predominantly rural, striking the right balance between large-scale and cottage industries assumes enormous importance since the twin objectives of effecting a wide dispersal of industry and creating large employment potential to provide jobs for the vast number of unemployed have to be achieved. A wide diffusion of small-scale industries has been recognized as an efficient means of bringing about the desired result. The development of small-scale industries in Madras State is traced in this article.*]

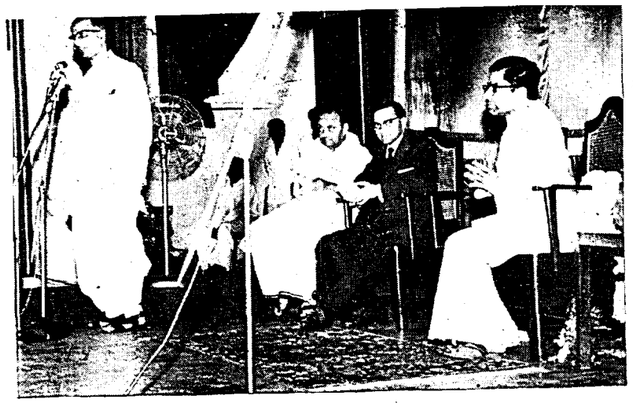
The bulk of the population in India lives in villages and in small towns and most of them depend on agriculture for their livelihood. The agricultural industry is the largest industry in this country. But agriculture however does not provide wholetime employment to the vast majority of people and large numbers migrate to urban areas, year after year, in search of employment during the period when they are free from agricultural pursuits. Therefore, the emphasis has rightly been shifted from agriculture to industry from the Second Five-year Plan period.

The need for well-planned industrialization as the most vital course of economic activity to stabilize not only the agricultural economy of the country but also other economic factors is being increasingly recognized on all sides. If the standard of living of the common people is to be raised and if the cherished objective of a socialistic pattern of society is to be achieved, the benefits of economic development should accrue more and more to the relatively less privileged classes of society. A well-balanced, integrated, decentralized industrialization offers the best solution to achieve this desired result.

Urban concentration

Industries in India are mostly concentrated in big cities. The periodical exodus of vast numbers from rural to urban areas gives rise to complicated problems in regard to housing and primary service facilities like water, sanitation, electricity in the urban areas. While the urban areas are faced with fresh problems, the progress of development in rural areas also suffers due to the exodus. Considering these problems, greater emphasis had to be laid on the establishment of small-scale industries. The development of small-scale industry is an important factor in the wider distribution of both economic activity and advantages. The Government have, therefore, adopted the policy of supporting these industries by restricting the volume of industrial production in the large-scale sector by differential taxation, by providing subsidies, etc.

By decentralizing production, artisans are enabled to work in their houses and produce articles at a cheaper cost and supply to established industries. There is also the complaint that on account of decentralized production, artisans have to work overtime without facilities and under unhygienic conditions. These are problems that require careful consideration and tackling. Since man is more important than the machine, it has to be ensured that the changeover from outmoded equipment to up-to-date machinery is phased in such a manner as not to aggravate the unemployment problem.



Dr. Keskar, Union Minister for Information and Broadcasting who inaugurated a programme of Children's films in the City recently is seen addressing the audience at the Children's Theatre.

The principal needs of small-scale industry are training and technical advice regarding the adoption of improved tools, machineries and new techniques, supply of raw materials and power at reasonable rates, supply of adequate finance on fair terms, facilities for importing or purchasing new machines, provision of factory space to enable small entrepreneurs to conserve their limited resources for working expenditure and of servicing facilities in operations involving the use of expensive machinery and assistance in the marketing of products. To fulfil these basic needs, several schemes sanctioned under the Second Five-Year Plan by Madras State are under implementation.

Five Tool Rooms at Guindy, Erode, Pettai, Virdhunagar and Tiruchirappalli were established at a cost of Rs. 35·27 lakhs. In the Tool Room Shop at Guindy, servicing work, in precision grinding, jig boring, etc., and in the supply of special tools, jigs, fixtures, dies, etc., for the benefit of 230 small-scale industries was undertaken during 1960–61. The Tool Room not only supplied some of the dies and special tools hitherto imported but also enabled private units to produce quality goods at cheaper cost and supply them to large-scale industrial establishments.

Designing Section

As there are no organizations in the Madras region, either in the private or the public sectors in designing dies, jigs, fixtures, specialized tools, etc., a designing section was also set up to work in conjunction with the Tool Room. In view of the popularity of these tool rooms, three more units were sanctioned during the end of 1959–60 in the Industrial Colonies at Pettai, Virdhunagar and Tiruchirappalli. Fifteen Common Service Facility Workshops at Madras, Dindigul, Tiruchirappalli, Kumbakonam, Palni, Madurai, Guindy, Perambur, Pallavaram, Vinnamangalam, Guindy, Pollachi, etc., were established at a total cost of Rs. 92·83 lakhs. All the fifteen Common Service Facility Workshops have gone into regular production work. During last year up to the end of 1960, servicing work to the value of Rs. 20·00 lakhs was turned out in the fifteen workshops which had started functioning for the benefit of about 800 small-scale industrialists.

Service Workshops

These Common Service Facility Workshops come under two categories—one for the benefit of organized private small-scale units and another for artisans. Two workshops under the former group such as the Service Centre at Wall Tax Road, Wood Working Unit at Guindy, etc., have made rapid progress and are already functioning on a self-supporting basis. In the case of the latter group such as the Lock Unit, Dindigul, Brassware Unit, Kumbakonam, etc., as the artisans are conservatives and do not take to improvements and new ideas quickly, the progress has been comparatively slow. Consequently, subsidized servicing rate, continue to be charged. Further, to obviate the difficulties involved for these service centres in their dealings with individual artisans, Industrial Co-operatives of artisans have also been organized.

Specialized machines

Apart from the normal types of service centre, a Common Lease Shop was also set up in the Industrial Estate, Guindy, with T.C.M. Aid. Here, specialized machines are hired out to industralists along with Government workmen. A committee consisting of both official and small industrialists has also been constituted for managing this shop and for leasing out the machines to the various industrialists.

Eighteen pilot production units at Mettur, Rajapalayam, Vellore, Thanjavur, Triplicane, Erode, Tiruvottiyur, Guindy, Vriddhachalam, Sivaganga, etc., at a total cost of Rs. 97·65 lakhs were established. All the 18 pilot production centres have gone into production.

Technical Aid

In the factories that have gone into production, articles to the value of Rs. 12·00 lakhs were produced till the end of 1960 and these included galvanized structurals, pressure die cast parts, ferrous castings, splints and veneers, centrifugal machines, hospital equipment, bolts and nuts, cycle parts, sheet metal articles, L.T. insulators, etc., required mostly for industrial establishments as also a few consumer goods such as footwear, sanitaryware, etc. Technical aid in the forms of technical experts and technical information was given under a scheme costing Rs. 48·50 lakhs. Six training and demonstration classes at Guindy, Pattamadai, Krishnagiri, Pettai, Cuddalore and Mannargudi at a cost of Rs. 19·00 lakhs were established. Five social welfare schemes at Perambur, St. Thomas Mount, Vellore, etc., were started at a cost of Rs. 11·00 lakhs. Besides establishment of sales depots for marketing at a cost of Rs. 2·65 lakhs, financial assistance to the tune of Rs. 127·00 lakhs was given.

The establishment of industrial estates and rural community workshops was one of the means adopted by the Government to meet the serious handicaps faced by small-scale industries. Even during the First Five-Year Plan period the need for establishing industrial estates in India with reference to the planned growth of small-scale industries was felt. It has been realized that establishment of industrial estates, particularly in rural areas, could be an effective method of fostering industrial development on a decentralized pattern. It could also help in relieving congestion in big cities and in clearing the slums.

Dispersal of Industry

In the United Kingdom, industrial estates were used in pursuance of the Government policy, of dispersal of industry to comparatively under-developed areas with a view to reducing unemployment and to bring under-developed areas on a par with developed areas. In India, the problem of unemployment has been far more acute. In rural areas, the position has been the worst. Dispersal of industries to the under-developed areas in the country by establishing industrial estates therefore became vitally important. The object in starting industrial estates in the country has been to foster actively the development of industry and to use the medium of industrial estates for dispersing industries to rural and under-developed areas in order to raise the levels of living.

Estates and Colonies

Commencing from last year, for the first five-years, eight industrial estates at a cost of Rs. 180 lakhs at Guindy, Madurai, Tiruchirappalli, Erode, Pettai, Thanjavur, Virudhunagar and Marthandam were established during the end of the Second Five-Year Plan. Under the scheme for industrial estates and colonies, which is intended to provide factory space at a reasonable rent to small entrepreneurs with a complete range of industrial services, 245 sheds were leased out on subsidized rent.

The attempts to support and stabilize existing small-scale industries and set up new small-scale industries have obtained encouraging results. Therefore Government have laid greater emphasis in the development of small-scale industries in the Third Five-Year Plan also. Madras State has an ambitious programme costing Rs. 1,120 lakhs for the development of small-scale industries in the Third Plan.

Different Schemes

Government have proposed to establish schemes of different nature and type like common service facility units, common lease shops, forge and heat treatment shops, saw mills and wood working units, expansion of existing tool rooms, establishment of five general purpose engineering workshops and setting up of new foundries, establishment of gigantic structural workshops, testing shops, and establishment of training units for die sinking, forging, machine shop, die designing, die making, ceramics, wood working, etc. It is also proposed to spend about 127 lakhs towards financial assistance in the form of State aid for individual cases and Rs. 170 lakhs through industrial co-operatives.

Synthetic Stones

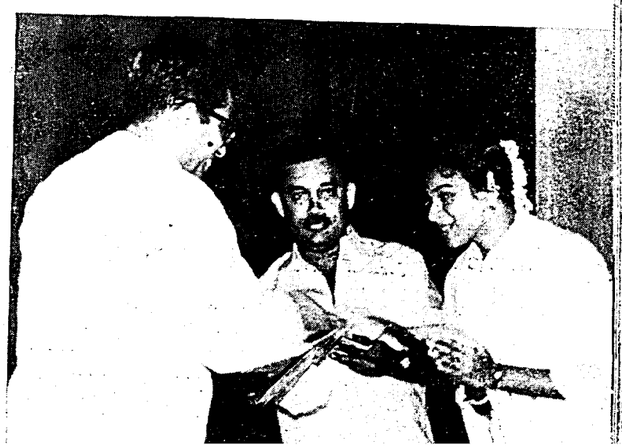
Besides construction of worksheds for synthetic stones in Tiruchirappalli district, for smithy and carpentry in Tirunelveli district and for fabricators at Madras, it is proposed to establish industrial estates at Theni, Koilpatti, Pudukkottai, Karaikudi, Arkonam, Tuticorin, Dindigul and Ambattur, etc. Functional industrial estates, one for leather at Perambur and another for ceramics at Vriddhachalam, are proposed to be established during the Third Plan period.

Although the above schemes are implemented departmentally, several small-scale industries newly started by several enterpreneurs have grown up due to the liberal assistance of the State Government by way of granting State-aid loans, machines on hire-purchase, providing indigenous raw materials, assisting them in import of raw materials and finding market for their product.

Numerous products

Both inside the industrial estates and outside, hundreds of factories have developed recently, all manufacturing a wide range of products like oil circuit breakers, high

Finance Minister Subramaniam who presided over the programme of children's films, presenting Government prize bonds to actress Ragini for participating in children's films.



voltage group switches, air break switches, underground cable joints, precision cut gears, industrial gear boxes, gear pumps, radios including transistor radios, amplifiers, volume controls, bicycles, wire nails, panel pins, electrical washing machines, film projectors, lamp sheds, soap boxes, tin containers, spectacle frames, builders' hardware, industrial belting, precision ground components for automotive engines, tube-light fittings, galvanised parts, die cast parts, motor pump parts, conduit pipes, paper pins, gem clips, automobile parts, mathematical instruments, index files, screw drivers, roofing hooks, H.T. accessories, railway parts, bolts and nuts, rivets, hinges, washers, wire mesh, drop forgings, corrugated paper and boxes, metal spraying, sheet metal work, brass foundry, copper conductors, P.V.C. wires and cables, thin walled engine bearings, typewriter parts, diesel engine parts, pressed tools, polythene films and bags, fountain pen parts, water-proof and coated paper, lathe circular saw machine, light structurals and several thousand other items.

Self-Sufficiency

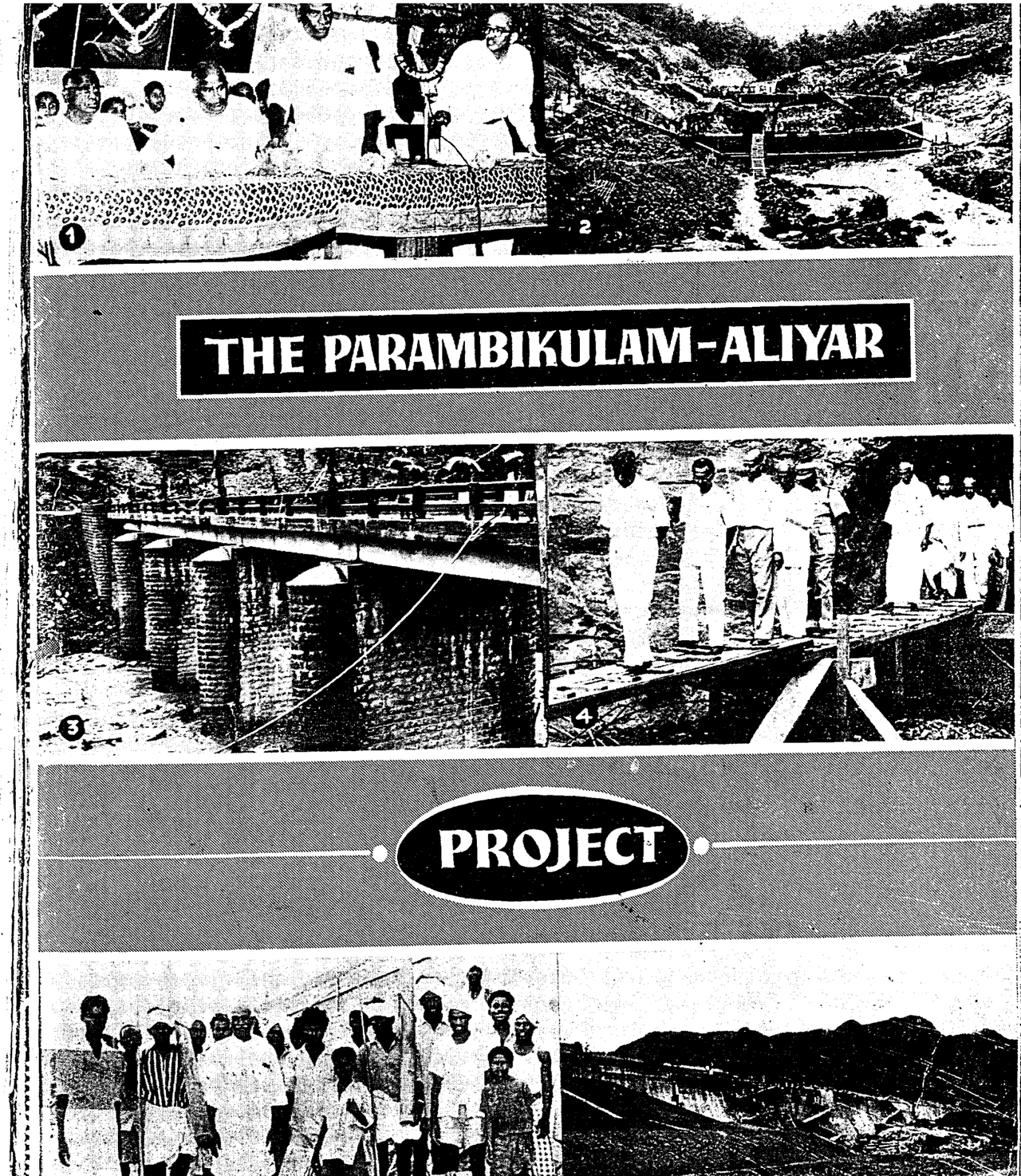
During the Second Five-Year Plan, all these small-scale industries under the control of the department in the industrial estates and outside industrial estates have produced machine accessories and new products to the tune of Rs. 10 crores. After the implementation of the schemes in the Third Five-Year Plan, it is hoped that not only will the production in the small-scale industrial sector have increased and the unemployment problem solved but also that Madras State would become self-sufficient in respect of small scale industries. When this comes, about the contribution that Madras State would have made to increased production in light engineering industries in the country and to the savings of foreign exchange will be very valuable.

Surgical Fellowships

One of Britian's leading medical houses, Smith and Nephew Associated Companies Limited, is offering six surgical fellowships to selected medical graduates from Commonwealth and other developing countries. The fellowships are worth £1,200 a year and are tenable only in the United Kingdom. They will be available in any branch of surgery or associated research.

The awards are being established so that outstanding graduates can "further their education to the benefit of their individual countries", and candidates must undertake to return home to practice within a year of completion of their studies.

The fellows may be of either sex and must hold a medical qualification registerable in Britain and have at least two years general clinical experience since registration. Application forms, which must be completed and returned to the United Kingdom by July 31, are obtainable from the Secretary, Smith and Nephew Associated Companies Limited, 2, Temple Place, Victoria Embankment, London, W.C.2.

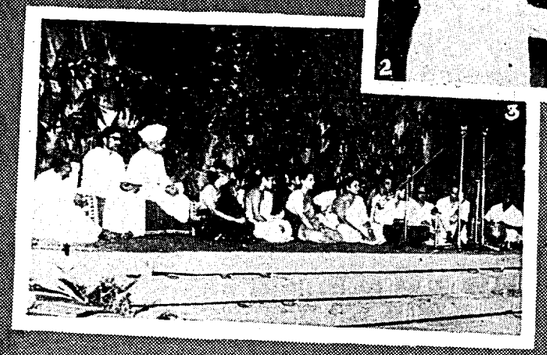


FACING PAGE—

(1) Chief Minister Kamaraj inaugurated the masonry for the Parambikulam Dam recently.
(2) The Parambikulam Dam site.
(3) The Parambikulam Bridge which was opened by the Chief Minister recently.
(4) The Chief Minister and others proceeding to inspect the Aliyar Project site.
(5) The Chief Minister with workers at the Aliyar Project site.
(6) A view of the Aliyar dam now under construction.













(1) Vice-President Radhakrishnan who inaugurated the Tagore Centenary celebrations at the Rajaji Hall recently being received on arrival. (2) Formally releasing set of books on Tagore during the function. (3) Rabindra Sangeeth. (4) Group dance number. (5) The audience (6) A scene from the dance-drama staged on the occasion



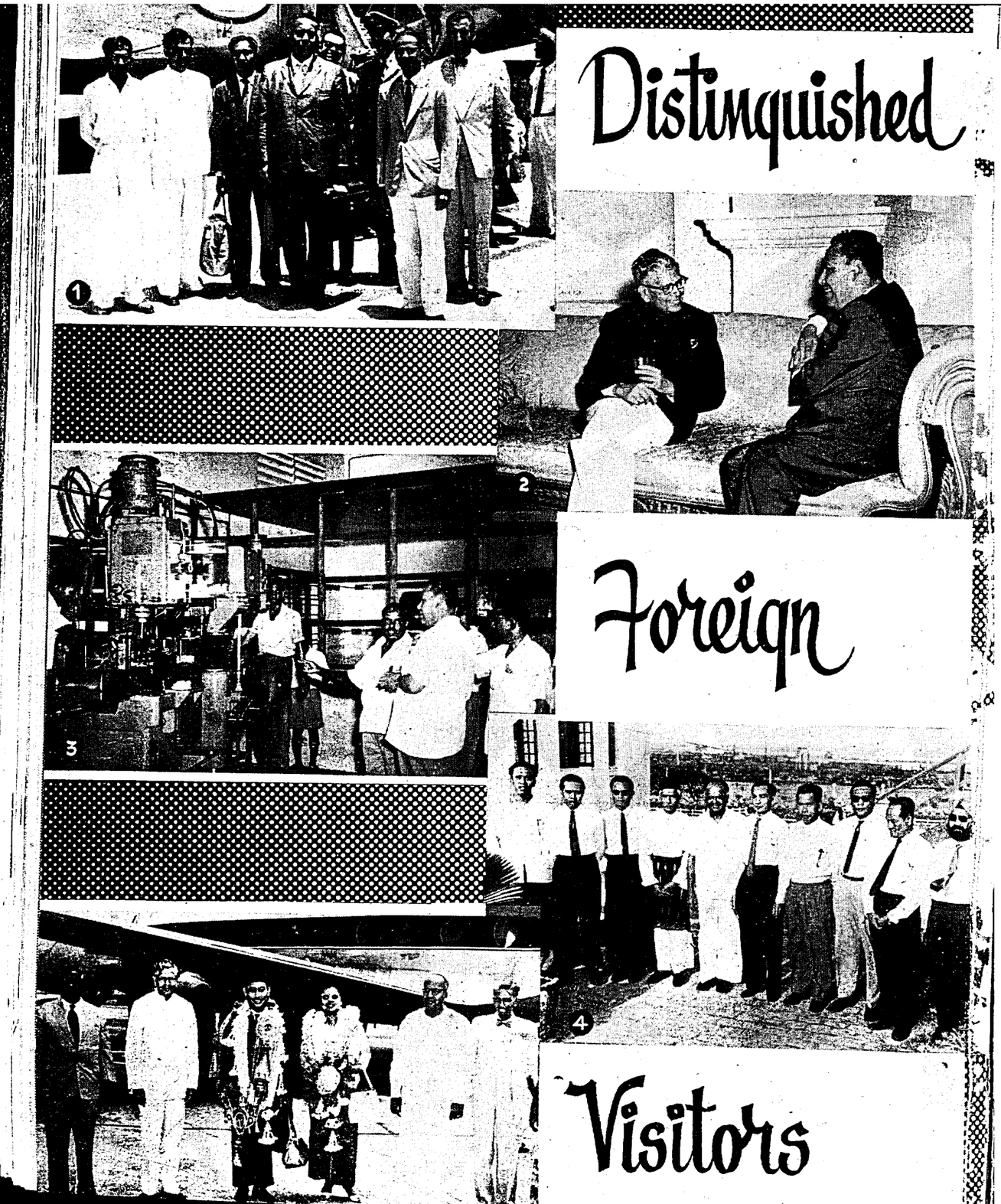








(1) Union Home Minister Lal Bahadur Shastri who fullfilled a number of engagements during his recent visit to the state is seen laying the foundation stone of Madras Aluminium Company, Ltd., at Mettur Dam. (2) With Chief Minister Kamaraj who presided. (3) and (4) Foundation stone laying ceremony of the Salem Co-operative Spinning Mills, Ltd,, by the Union Home Minister. (5) Union Finance Minister Morarji Desai laying the foundation stone of the Superphosphate Factory at Ennore, recently.



ELIMINATE The Common Fly

[This feature article on the fly problem released in connection with the "Anti-Fly Week" being celebrated this month explains the life cycle of the common house fly and feasible control measures. Also included in the article is a short note on Maternal and Child Health Services in the State]

The common house fly though harmless to look at, is in fact a dangerous insect spreading diseases such as dysentery, diarrhoea, typhoid and cholera. Lakhs and lakhs of people die all over the world owing to the transmission of diseases by the apparently harmless common house fly.

Human fæces, cattle dung, gargbage, rubbish and filth are their dwelling places as well as choice dishes. The habits of flies compel them to pick up disease germs from sores, ulcers, stools, etc., and carry them to man. The more opportunities they have of coming into contact with man, especially with his food and drink, the more is the potential danger. Their feet with bushy hair growth (which you can easily see with the help of a magnifying glass) and thier hairy body gather the filth and when flies come from these dirty places and settle on food which most people leave in uncovered vessels inadvertently, the filth and disease causing germs are transmitted automatically to the food left uncovered. As the flies cannot take solid food they vomit on it, to make it liquid, stamp around on it till it dissolves and then suck the food thus made liquid.

Propagating Disease

As if these nasty pranks are not enough, the flies usually defecate while feeding. The different ways by which the flies can propagate disease germs are (*a*) by passing infected pathogenic germs of cholera, typhoid, dysentery sneaked up from the excreta of man, (*b*) by carrying them in external surfaces of body, viz., hairs, bristles, wings, footpads, etc., and (*c*) by vomiting the infected materials.

With this knowledge could you still consider flies harmsless as butterflies? Would you not take eve opportunity to eliminate them?

The female fly lays some 600 to 900 eggs in five or s batches. The eggs are white, oval bodies each measuri 1/20th of an inch. deposited in the moist surface of manu heaps, or human fæces or decaying animal or vegetal matter. After 8 to 24 hours these eggs are hatched a a number of cone shaped maggots, each about half an in in length, come out from the shells. These larvæ feed filth and by about the 6th day they attain the pupa stag

During the larval stage, it may feed on pathoge organisms which may be carried over and may be se in the excreta of the adult fly. This will be highly cond cive to the spread of pathogenic germs. In about three da the fully developed fly emerges from the pupa. Dependi on the favourable conditions and temperature, the ti length to complete the whole life cycle, i.e., from egg adult varies from 5 days to 20 days. The female is rea to lay eggs, in about 4 days after emergence. The l space of a fly is about a month in summer and son what longer in winter.

Control Measures

The best control measure is of course to prevent fl from being born at all. Some simple measures that c be adopted to achieve this end are:—

(*a*) Prevent indiscriminate defacation; use sanita latrines.

(*b*) The proper place for the animal-dung is t manure pit. See that it is removed to that place. not let it to accumulate near houses. Cover the manu pit with mud after every addition or removal.

FACING PAGE—

(1) Senor Moreno Sanchez, President of the Mexican Senate who was recently in the City on a three-day visit photographed on arri at the airport..

(2) Senor Moreno in conversation with Industries Minister Venkataraman who gave the Mexican President a dinner party at Rajaji Hall.

(3) Senor Moreno inspecting an unit at the Guindy Industrial Estate.

(4) Members of the Malayan Parliamentary Delegation who visited the State recently seen in the company of the Chief Secretary at Secretariat.

(5) Mr. Sardor Bin Haji Jubir, Minister of Transport of the Federation of Malaya, who visited the City recently, being received arrival at the airport by Industries Minister Venkataraman.



Finance Minister Subramaniam inaugurated recently the Kanya Gurukulam High School at Thiruvettiyur by lighting the sacred ' Kuthuvilakku '.

(*c*) All kitchen wastes and similar refuse should be placed in a closed receptacle and daily removed to the manure pit: If the refuse is combustible better burn it.

(*d*) Use of traps, baits, fly papers, sprays, etc., to eliminate flies.

Do not allow flies to have access to any article of food or drink and always remember that the fly problem does not arise in a clean house with a clean surrounding.

Maternal and Child Health Services

The object of the Maternal and Child Health Services in the State is to cater for the physical, physiological, nutritional and emotional care of the mother during prenatal period and expert advice, guidance and assistance during confinement and thereafter, and to look to the provision of physical and mental well-being of the *infant* from its birth through pre-school and school ages with a view to prevent illness and promote the health of the child.

The total number of Maternity and Child Welfare Centres functioning in this State under all schemes is 1,759. 113 Woman Medical Officers, 298 Health Visitors, 2,506 Maternity Assistants are working in these centres.

During 1960–61, ninety-six Maternal and Child Health Centres were opened in remote rural areas in the State under the Second Five-Year Plan. This has enabled the State to achieve the target of opening 489 maternity and child welfare centres under the Second Five-Year Plan.

Under the backward area scheme which had been sponsored by the Government of India with a view to rendering maternity and child welfare services in areas backward in such service, 19 main centres each with 4 sub-centres have been opened in rural areas.

Health Visitors

The training school for Health Visitors which was taken over by our State Government from the year 1938, and running in rented buildings till 1958 has since been housed in a permanent building constructed for the purpose at an estimated cost of Rs. 2·18 lakhs. Each year in July a new batch of Public Health Visitors are being recruited under the 18-month course under the State Scheme. Out of the 50 candidates who can be admitted each year, 25 candidates are entitled to get a stipend of Rs. 40 per mensem, throughout the training period. At present 25 students recruited in July 1960 are undergoing training in the Health School and another batch of 25 students will be recruited in July 1961.

Eight hundred Thayis have been trained out of 900 sanctioned for the year 1960–61. This brings the total number of trained Thayis to 3,200 under the Second Five-Year Plan out of the target figure 3,600.

Construction of 36 buildings for housing the maternity and child welfare centres and quarters for the Maternity Assistants under the Second Five-Year Plan at an estimated cost of Rs. 2 lakhs has been sanctioned by Government. Arrangements are being made to begin the construction.

Oil Agreement with B.O.C.

An agreement covering the grant to Oil India Limited of about 1,800 square miles for further oil prospecting in north-east Assam was signed in New Delhi on May 31 between the Government of India and the Burmah Oil Company Limited. Under the new agreement the Government of India and Burmah Oil Company will be equal partners in this enterprise and will each hold 50 per cent of the shares in Oil India Limited. The Foreign Exchange required for developing the oil resources found as a result of new exploration will be provided by the B.O.C. The Government of India will make available the required rupee finance.

"Gods Own Children"

Harijan Welfare in the State Since Freedom

SRI P. SANKARAN, *Personal Assistant to the Director of Harijan Welfare.*

[*Gandhiji called them ' Harijans '. To him they were God's own children, not ' untouchables '. He dedicated his life to rooting out this evil of untouchability with a passion and purpose that he alone was capable of. With that unerring sense of practical example which invariably characterized his genius as a social reformer, he lived with them, as one of them, in huts and slums. In no other way could he have succeeded in rousing the moral consciousness of the country to this social evil than by his great act of personal example. In this article the author reviews the progress achieved in improving the lot of the Harijans in Madras State since the advent of freedom. He points out that the right climate for reform in the State was created long before Independence with the Temple Entry Authorisation Act of* 1938]

As the tri-colour flag of India was hoisted on August 15, 1947, the banner of freedom, equality and fraternity was also raised and ever since the Government have been taking various steps for the development and progress of the nation. In this programme of development, the uplift of Harijans has been given considerable importance.

The down-trodden Harijans were earlier denied all social rights. Their children were not admitted in the schools, their women were not allowed to take water from common wells and the doors of temples were closed for them on the plea that their presence would pollute the holy atmosphere there. It was commonly believed that they were born to suffer in this world.

As people passed from the mediæval to the modern age, the stigma of untouchability was felt very sharply. To eradicate this 'touch-me-notism' great leaders like Raja Ram Mohan Roy and social and religious luminaries like Sankara, Madhva and Ramanuja raised the banner of revolt. But their seeds for reformation fell on barren soil.

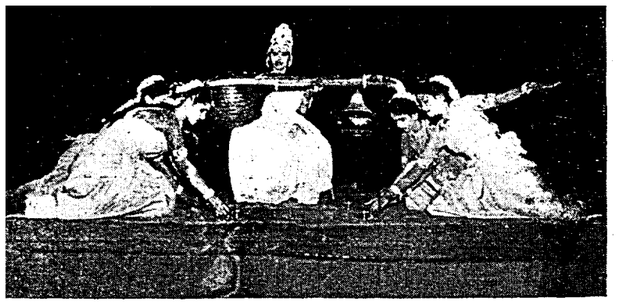
Gandhiji's Benediction

Gandhiji named the depressed classes as Harijans, for he felt that the condition of the Harijans would improve if they were called as sons of ' Hari ' (Lord Vishnu). From the time he took up the national leadership, he pursued the Harijan amelioration programme with unabated vigour and unflagging faith. He firmly believed that 'withcut the removal of this untouchability, Swaraj is a meaningless term'. Gandhiji lavished affection on the Harijans and dedicated himself to the eradication of untouchability. The epic fast undergone by him in 1932 on their behalf focussed the attention of the nation on this grave problem. With the blessings of Gandhiji and Dr. B. R. Ambedkar, the great Harijan leader, the Congress adopted removal of untouchability as one of the important planks of its programme.

New orientation

After Independence, the National Government took up the reins of administration and attempts have been made to give a new orientation to national welfare work, more particularly to aspects of life relating to the economic and social status of Harijans and thus help materialise the ideals of Gandhiji.

The Constitution of India has provided necessary concessions to lift Harijans out of their social and economic disabilities. The practice of untouchability has been statutorily forbidden in any form and ' The Madras Removal of Civil Disabilities (Amendment) Act of 1947, and ' the Untouchability Offences Act, 1955 ' are there to punish anyone who observes this practice. The Constitution has also provided reservation of seats for Harijans (now called Scheduled Castes) in Parliament and the State Legislatures. Posts are reserved for them in the ' Public Services ' at all levels. The Constitution has also conferred necessary powers to the State to promote the economic and educational interests of Harijans with special care. These preferential concessions ordered to be granted for ten years from the day India became a Republic have since been extended for a further 10-year period up to 1971.



A scene from the cultural programme that was presented by girls at the Annual Day Celebrations of the Government Senior and Junior Approved School for Girls.

With reference to the provisions in the Constitution, the Central and State Governments have been taking various measures for the amelioration of the conditions of Harijans. The programme required appropriate social climate to bring effective change in the life of Harijans and for the development plans undertaken by Government in this behalf to succeed. The right climate had been created in Madras State even before Independence. The Temple Entry Authorisation Act introduced in 1938, when the Congress took up the reins of Government made a revolutionary change in the outlook of Hindu Society. This Act and the efforts by the social workers interested in Harijan welfare had prepared the ground for the ameliorative measures sponsored by Gandhiji.

The State Government, after Independence, has waged a relentless war to eradicate the evils of untouchability and effect the uplift of Harijans. A separate department known as the Harijan Welfare Department was created in 1949 to undertake measures for the socio-economic uplift of Harijans. The department receives a helping hand from the Centre also by way of grants and subsidy. A sum of Rs. 236 lakhs was spent in the year 1958–59 and Rs. 306 lakhs in 1959–60. The anticipated expenditure for 1960–61 is about Rs. 391 lakhs. For the year 1961–62 a provision of Rs. 306 lakhs has been made under the State and Central Budgets.

Steady progress

However, huge money allotments and expenditure alone cannot produce the expected results immediately because the efforts by Government are in the direction of bringing a change, not only in the outlook of both Caste Hindus and Harijans but also in the direction of implementing a programme of social reformation in the country. Therefore the progress may seem slow but is certainly steady.

In the field of education, the Government are maintaining nearly 1,000 schools under the direct control of the Director of Harijan Welfare, most of them being elementary schools. In Kanyakumari district alone, where there are no schools, the Government are running night schools and pial schools. However, Government are not opening any more of these schools as it is felt that they may perhaps permanently separate Harijan children from other children. Where the necessity for separate schools for Harijan boys and girls exists Government have opened general schools under the control of the Education Department or the local body where Harijan students are admitted. The Government have been providing books and slates for children studying in the schools managed by this Department. The children are also provided mid-day meals to encourage regular attendance. Government have now sponsored a new scheme for supply of dresses consisting of two sets to every Harijan girl student studying in all Harijan Welfare schools and also to Harijan girls staying in Government girls' hostels throughout the State during the year 1960–61.

Community living

The Government are also awarding boarding grants to Harijan students staying in recognized subsidised hostels at the rate of Rs. 15 per month. Funds are provided for this purpose under the State and Central Budgets. The Government themselves are running hostels for the benefit of the Harijans. Pupils belonging to both the Backward and Forward Communities are admitted in these hostels to encourage boys and girls moving together, eating together and living together so that eventually these trends may result in the removal of untouchability. Such hostels have been opened wherever the necessity arose and Government have also been taking over privately ill-managed subsidised hostels.

The Government have been awarding various scholarships to Harijan students and pupils in all recognized hostels, undergoing pre-matric, post-matric, industrial mid-wifery, professional and post-graduate studies. The scholarships granted consist of amount required for the purchase of books, payment of special fees and also boarding and lodging charges. Those who study as day-scholars are granted scholarships for the purchase of books and payment of special fees. All Harijan students are exempted from payment of examination fees.

Promoting intelligence

In order to encourage Harijan pupils to study well, Government award two gold medals and two silver medals to the first and second of the Harijan boys and girls in each district who secure the highest marks in the S.S.L.C. examination.

The Harijans are provided with house-sites both by assignment of poramboke lands and acquisition of private lands so that they may live in healthy places. Facilities like pathways, burial grounds, drainage, etc., are also provided. Drinking water wells are sunk in their colonies and street lights are also put up. Lands are reserved and assigned to them for cultivation.

Land colonisation schemes on co-operative basis are being formulated wherever vast tracts of poramboke lands are available for cultivation. Nearly 100 schemes have been formulated and these are under consideration. These schemes are expected to benefit nearly 5,000 Harijan families. A special Deputy Collector is working in the Directorate of Harijan Welfare for the purpose of inspecting these lands and formulating the schemes. These schemes, when implemented will considerably improve the economic standards of Harijan agriculturists.

Government have also been taking up works like construction of school buildings, culverts and formation of pathways in Harijan colonies in the National Extension blocks with contribution from Harijan Welfare and Block Funds. Community Recreation centres and rural libraries have been constructed by the Harijan Welfare Department throughout the State.

Scholarships

The Government of India have also sponsored many schemes for Harijan Welfare through the State Department of Harijan Welfare. The Government of India have been sanctioning scholarships for post-matric studies to Harijan students. Under the Grant-in-aid and Centrally sponsored schemes of the Union Government, Harijans receive various grants, such as subsidies at the rate of Rs. 1,500 for sinking of an irrigation well to those who possess land for cultivation, and agricultural subsidies at the rate of Rs. 400 for the purchase of plough bulls, agricultural implements and seeds.

Sanction by way of a grant of Rs. 750 to each Harijan beneficiary, consisting of a subsidy of Rs. 550 and loan of Rs. 200 to be recovered in easy instalments, for the construction of houses has also been provided under Harijan housing schemes. Necessary sanitary amenities have also been provided for them. Cottage industries centres have also been opened for training Harijans in small cottage industries like brick works, etc., and a number of Harijans have benefited by the training received at these centres.

The Government have also been taking steps to settle Harijans in trade like leather works, sewing, etc. Technically trained Harijans are granted subsidies not exceeding Rs. 500 in shape of tools for carpentry, balcksmithy, sewing, leather works, etc.

Gospel of Equality

Apart from these measures taken for their economic and educational uplift, Government have been taking due care and have initiated effective steps to eradicate untouchability and raise the social status of Harijans to that of other communities in the country.

Deputy Sevaks have been appointed throughout the State to preach the gospel of equality and do intensive propaganda against various social disabilities. They reform Harijans, convene meetings to teach them to improve their economic and social standards, etc. Pamphlets are issued and posters are exhibited explaining the evils of untouchability. Social workers who have rendered meritorious service in the work of Harijan uplift and eradication of untouchability are awarded gold medals and encouraged. Grants are sanctioned to non-official organizations to utilise their services in Harijan Welfare work.

Welfare Propaganda

Harijan Day is celebrated in the districts on the 28th day in February and 30th of other months and health campaigns and meetings are conducted on these days in Harijan colonies. The week from January 24 to 30 is observed as 'Harijan Week' throughout the State annually and Harijan Welfare propaganda is carried out on a mass scale during the period.

The several measures taken by the Government after the attainment of Independence, have changed the general backwardness of the Harijan community to a great extent. The younger generation of Harijans has received education in great numbers. The educated youths of this community have secured several appointments in the public services. Other members have settled down in agriculture as well as in trades and cottage industries.

The Harijans are fast learning to keep pace with the times and adopt themselves to new social needs. They are making every effort to take their proper place in the new social set up of this country and to see that the helpful measures undertaken by the Government spur them on to efforts towards greater progress and prosperity.

Smt. Lourdhammal Simon, Minister for Local Administration, presided and distributed prizes at the annual day celebrations of the Government Senior and Junior Approved School for Girls in the City recently.



The New Role of the State's Highways Engineers

[The annual conference of the engineers of the Madras Highways and Rural Works Department spotlighted the new orientation of the 'Highways Department' as the 'Highways and Rural Works Department'. While Sri P. Sirajuddin, Chief Engineer (Highways and Rural Works), reviewed the achievements of the department since its formation in 1946, Sri P. Kakkan, Minister for Works, emphasized aspects of the new role of the Highways Engineer under emerging patterns of panchayat administration. Sri E. P. Royappa, Secretary to Government, Public Works Department, dealt with problems relating to road developement targets and their fulfilment. A short report of the two-day conference which was recently held at Kodaikanal is presented in this article]

The annual conference of the engineers of the Madras Highways and Rural Works Department was held at Kodaikanal recently, Sri P. Kakkan, Minister for Works, Sri P. Sirajuddin, Chief Engineer and Sri E. P. Royappa, Secretary to Government, Public Works Department, participated in the conference. Several administrative and technical matters were discussed during the conference deliberations.

Tracing the achievements of the department from its formation in April 1946, the Chief Engineer said that the mileage of the roads in the area corresponding to present Madras State had increased from 19,400 to about 30,000, out of which 11,200 were Government roads. The rest were under the control of Panchayat Unions and Panchayats. He mentioned that Government proposed to take over 3,900 miles of bus route roads from local bodies and 1,000 miles had been taken over from 1961-62. The expenditure on road development works which amounted to Rs. 2·62 crores during the post-war period from 1947 to 1956 had progressively increased to Rs. 5·07 crores during the First Plan period and Rs. 11 crores during the Second Plan period.

The Chief Minister seen with members of the South Arcot District Fishermen's Association who recently met him at the Secretariat and presented a memorandum.



Not Adequate

The ceiling indications of the Third Plan amounting to about Rs. 15 crores were not adequate to meet the demands of modern transport. In view of the demand for allowing more and more express bus and lorry services, there was urgent need to provide two-lane surfacings to at least about 1,000 miles of stretches immediately. For the targets of agricultural production to be reached, important rural roads had to be metalled and other village roads provided with surfacing like gravel or stabilised soil. The existence of weak structures on the old road system was a severe handicap in the growth of industry as was already revealed from difficulties experienced in transporting heavy materials to Neyveli Lignite Corporation and other projects like Kundha and Parambikulam.

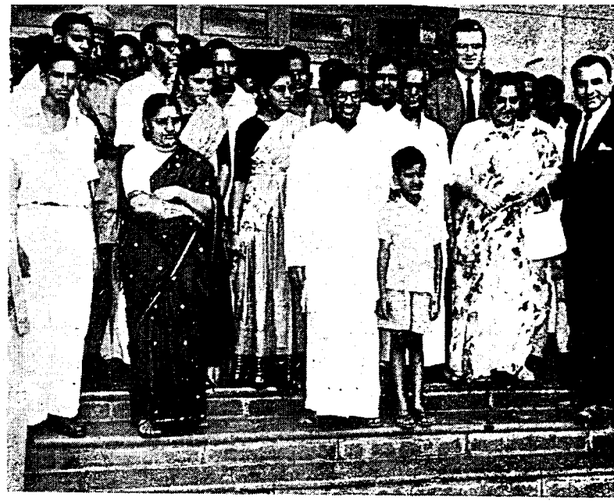
The Chief Engineer stated that the engineers of the Highways department had a major role to play in the panchayat pattern of administration. Government had entrusted them with technical responsibility because of their long association in rural welfare schemes. Development needed initiative in planning, enthusiasm for implementation and efficiency at work. There was vast scope for application of engineering skill and individuality in the rural field. The engineer should give a satisfactory account of himself and bring credit to the department.

A different task

Sri P. Kakkan, Minister for Works, paid tributes to the Highways Engineers for the efficient maintainance of the road system in the State. The additional task assigned to them in the rural field was however different from their regular duties. Rural service had to be considered as service to God and a devotional spirit was required for achieving the best results. They had to establish frequent contacts with the villagers, give respect to them, mingle freely with them in their community functions and entertainments and thus win their confidence. Avenue trees were assets to the nation and they had to be properly protected. The taluk avenue committees consisting of the Assistant Engineer, Circle Inspector, Agricultural Demonstrator, etc., could do something tangible to prevent illicit tree cutting and undertake more new plantations. The officers could frequently inspect works in progress, make prompt payments for works done and see that repairs to bridges were effected with utmost speed.

Tackling problems

Sri E. P. Royappa, referred to the problems that had to be tackled to achieve the targets of road development. Proper ground work and investigation were essential before a scheme was launched for execution. Improper estimating often led to delay consequent on the need for revised sanction. Targets must be fixed intelligently after taking into consideration factors such as seasonal conditions, etc. Officers should not rest content with the provision of temporary diversions at sites where bridges had collapsed due to floods and other causes. They should arrange for the early reconstruction of the structures.



The Finance Minister who recently left the City on a foreign tour was seen off at the airport by numerous officials and non-officials, friends and admirers.

Madras State led other States in road development. And this fact should spur the Highways Engineer to forge further ahead in his efforts to take a good system of roads to every nook and corner of the State.

Women and Children in C.D. Blocks.

The Union Ministry of Community Development and Co-operation has suggested to the State Governments to undertake a certain minimum programme for women and children in each C.D. Block. The programme is to be determined taking into consideration the local conditions. Each Block is to concentrate on three or four items of work out of nutrition, family planning, literacy and social education and enrolment of school children, beautification of the homes, recreational activities, improvement of the economic conditions by activities such as poultry-keeping and bee-keeping.

It has been suggested to the State Governments that there should be at least one good mahila mandal in each Village Level Worker's circle of 10 villages, to be started within a specified period

A Traffic Hazard Removed — *Kudimaramath*

The Police, the People and the Common Weal

[The growing community sense and public weal consciousness in the State are reflected in the two short narratives presented in this article. They relate to the removal of a motor traffic hazard at a point in the National Highway running through Salem district by the police with the help of villagers and the revival of the age-old practice of Kudimaramath in certain panchayats of the Papanasam Union. The first narrative is by Sri K. R. Shenai, Deputy Inspector-General of Police, Coimbatore and the second is by Sri R. Soundararajan, Chairman, Panchayat Union Council, Papanasam].

Any one who has motored from Dharmapuri to Mettur in Salem district would have noticed two Garudasthambams standing out on the National Highway within a short distance of each other between mile stones 195 and 197—one before the Tholasingaperumal temple and the other before the Sendraya Perumal temple.

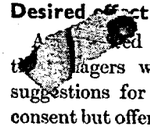
Both the pillars have stood in their positions from time immemorial and with high class road surfacing in recent years they constituted grave hazards to motor traffic, especially as the latter pillar was on a sharp curve. In the last five years the toll of mishaps in the proximity of these pillars—some of the mishaps were directly against the pillars—was 12 inclusive of 3 fatal cases.

Several approaches

Several approaches were made to the concerned villagers to move these pillars but sentiment and custom stood in the way and the pillars were not removed. The Police saw this continuing hazard—even warning boards did not have much effect—and decided that the pillars must be moved out of the way. The question was as to how the decision was to be implemented.

If action had been initiated under section 133 of the Cr.P.C.. a favourable order would certainly have resulted. However, as nothing is farther from Police intentions than that law abiding peoples' feelings and sentiments should be offended, the Deputy Superintendent, Salem Rural, Sri S. Palaniappan and Inspector, Dharmapuri. Sri T. V. Sitapathy were deputed to gather the villagers, explain at length the necessity for moving the pillars and convince them that the shifting would be in their interest as it would save loss or injury to their folk.

Desired effect



As expected this approach had the desired effect and the villagers who had earlier refused to entertain any suggestions for moving these pillars not only gave their consent but offered to co-operate with the Police in the task.

All that remained to be done was to take up the job in hand forthwith and this the Deputy Superintendent of Police, the Inspector and a small band of Armed Reserve men accomplished within a very short time. They moved the pillars 20 feet outwards to new positions agreed to by the temple trustees and the local member of the Legislative Assembly.

When the work was done the villagers were happy that the Police had cleared two bad obstructions. Bus and lorry drivers who passed regularly heaved a sigh of relief and many a motorist who has not known the earlier obstructions is blissfully unaware of the motoring hazard that the police have freed him from.

Kudimaramath

The old delta in Thanjavur district is known for its net-work of channels, big and small, irrigating thousands of acres in each village. From time immemorial, the ryots of the villagers used to take up the work of silt clearance and they used to maintain the channels in good condition. However in recent decades, owing to a variety of reasons, the work has not been done properly. Kudimaramath as it was called became a rare feature and in consequence, the channels became inefficient carriers of water for irrigation. The bed became silted up. The bunds either were washed away or were encroached upon by adjacent land owners or cultivators. This condition retarded the progress of the grow-more-food schemes and to some extent set at naught the efforts of the Government and the ryots. Hence taking up Kudimaramath became the need of the hour, a vital necessity.

Long neglect

Under the provisions of the Madras Panchayats Act, 1958, the Panchayat has been authorised to take upon itself the ryots' responsibility to do Kudimaramath work and to levy a fee from the beneficiaries. No Government grant is normally necessary for this. But there exists the fact that due to long neglect of the obligations under Kudimaramath some of the works have reached a level of deterioration at which even if the ryots now carry out the customary repairs, the works cannot be restored to a proper condition. If the works are to be restored, heavy expenditure will have to be incurred. It was, therefore, proposed that up to a limit of rupee one per acre of ayacut, expenditure on Kudimaramath should be treated as normal. Any expenditure in excess of this was to be treated as " excess Kudimaramath " and Government proposed to pay two-thirds of it.

Special Drive

"With this aid, the elected representatives of the people of the villages will be in a position to come into the picture and revive the time honoured convention of shramdan for the common benefit of village irrigation. An organized special drive and an effective start has now been made. In Papanasam Block in Thanjavur district, so far twenty-four panchayats have taken up the work of silt-clearance under the panchayat agency in pursuance of the scheme and the work is nearing completion in a good number of them. In a few panchayats, the absence of rains and the hard soil hold back the enthusiasm of villagers to execute the work early.



Industries Minister Venkataraman inaugurating the Fourth Prize Bonds draw in the City recently.

Steady progress

The work is recording steady progress. The interest evinced by the Panchayats is keen and great. It is hoped that this experiment in Papanasam Block will bring in great benefits in the field of agricultural production and village economy. A good number of old ryots feel that what they have not seen for decades in their life and what they have been longing to see—the revival of the traditional practice of Kudimaramath—has after all come about. They are happy no end at this very constructive development.

Insurance of Bank Deposits

The Union Government have decided to introduce a scheme for the insurance of bank deposits. A bill for this purpose is to be introduced at the next session of Parliament. The idea is to avoid or minimise the hardship caused to depositors through failure, reconstruction or amalgamation of relatively weak banks. An autonomous Corporation will be set up for the purpose with an authorised capital of Rs. 5 crores all of which will be allotted to the Reserve Bank. The Governor of the Reserve Bank will be the Chairman of the Corporation. The deposits in all the commercial banks functioning on the date of the introduction of the scheme will be insured. Deposits with the State Bank of India and its subsidiaries will not be covered because of their special position. These banks which are associated with Government will, however, be required to contribute to the funds of the Corporation. The limit of the amount of individual deposits insured and the rate of premium will be fixed by the Corporation with the approval of the Union Government. This may be varied from time to time in the light of experience. To begin with, it is expected that individual deposits to the extent of not less than Rs. 1,000 will be guaranteed under the scheme.

Need for Improved Techniques

Fish Curing Practices in Madras State

S. T. CHARI, *Superintendent, Fisheries Technological Station, Tuticorin*

[*Unless fish curing methods in the State are brought up-to-date by adopting the latest techniques in fish preservation and processing, the industry in the State runs the risk of letting slip its grip on a thriving export trade, states the author of this article. Presenting a case for voluntary quality control by the trade, the author enumerates the common defects in fish curing practices in vogue and suggests methods for their improvement*]

Preservation of fish by salting and drying is one of the age-old practices adopted by fishermen to preserve excess fish catch in our country where icing, chilling and freezing of fish are comparatively recent developments in the fish processing industry. In spite of the advantages of preserving fish by these latter methods and marketing them in a fresh state being widely known, still salt curing of fish is resorted to. The reasons for the persistence of the practice are the inadequacy or non-availablilty of icing or freezing or storage facilities in fishing centres, the high cost of such preservation wherever facilities exist, conservatism preventing both fishermen and consumers from using iced or chilled fish. All these factors seem to weigh in favour of the fishermen salting their excess. The prospects of a better market in neighbouring countries like Ceylon, Malaya and Burma induce them to go in for fish curing rather than marketing the fish in a fresh condition in the country of production.

Practices in Vogue

Madras, with a coastline of 620 miles is estimated to land 50,000 tons of sea fish out of which nearly 3/5 of the total catch is salt cured. There are 17 Government fish-curing yards and a number of private fish-curing premises. The practices in vogue are pit curing, or tub curing or dry salting. The quality of the fish thus cured leaves much to be desired and yet the consumers seem to be satisfied with the product for the money's worth. There is also considerable export of cured fish from Madras State to Ceylon and special products like dried prawns, fish maws and shark fins are exported to Burma, Malaya and Singapore. The chief ports of export are Tuticorin, Dhanushkodi, Madras, Nagapattinam, Kilakarai and Thondi. A conservative estimate will put the figure of export of cured fish at 17,000 tons, valued at 3½ crores of rupees annually, Tuticorin Port alone accounting for 15,000 tons. When the magnitude and importance of this trade and commerce which is ever on the increase is considered, it is strange that fish curers or the people in the trade seem to have little concern for the quality of the product exported. They are not worried about maintaining even certain minimum standards of wholesomeness and purity of the product.

Quality Control Needed

To improve the quality of dried fish and to ensure a consistent demand for them, some kind of quality control should be considered. A note of warning may be given to the people in the trade here that Ceylon with sea surrounding her on all sides is advantageously placed t exploit her fishery wealth. Reports confirm the position If our fishing trade is to get well established in that coun try consumer preference for improved and better quality product has to be met. It is of paramount importanc that a beginning is made to control the quality of fis exports to Ceylon. If this is not done soon a stage wil be reached when Ceylon will try to dictate terms for fis imported into that country or completely replace ou fish with their own increased landings. Our entire fishin industry and the flourishing trade and commerce in i will then suffer an irreparable loss.

Common Defects

The common defects noticed in the presen exports are: (1) Use of impure or low quality salt (2) Improper curing by not using the right quantity o salt for the maximum period to enable the salt to strik through. (3) Insufficient drying. (4) Improper packin and storage. (5) Contamination with sand. (6) Poo quality of the fish originally taken for fish curing. Th fish thus cured is of unwholesome quality and emits a offensive odour due to bacterial spoilage. It is unattrac tive to consumers due to molds, fungus and insect attac the powdery nature of the flesh due to impure salt c insufficient drying or use of tainted fish for curing. A these defects can easily be set right only if the curer takes proper care at every stage of curing.

The Right Methods

The fish should be cured in separate premises or enclosures where hygienic and sanitary conditions could be maintained strictly. Only fresh fish of prime quality should be used for curing. Salt of sodium chloride not less than 96 per cent shoud be used and fish must be salted in good quantities of salt for the prescribed minimum period. The fish should be washed well both before and after curing and after draining should be dried in the sun on raised platforms or on mats spread over such barbecues with intermittent turning over to ensure uniform drying. The final product should not be above 30 or 35 per cent in moisture and should be firm and white in appearance. This should be properly kept in storage without admixture with sand or contamination with insects or rodents. Special wooden boxes lined with waterproof lining should be used for packing fish for export. By adopting these methods preserved fish of uniformly high quality can be easily obtained and the market will get firmly established.

Voluntary Action

At present the export of salt cured fish from this country to Ceylon is not subjected to quality control by any rules and regulations. The importing too seems to have no check on the quality. The flourishing mainly under the rule of supply and . This may not continue for ever. It is high time that the industry took a bold step in the right direction by instituting quality control voluntarily before the Governments of both the countries step in and impose standards of quality which may be difficult to follow by the trade at a later date.

The Government have felt the need for a machinery to test the samples made available by the industry and have recently approved the Fisheries Technological Station, Tuticorin, to analyse chemically the cured fish samples received from interested parties, curers and shipping agents for its quality and issue a certificate for a nominal fee. It is up to the industry to avail itself of this opportunity and adopt some standard in the production of cured fish in a voluntary way at least, as a beginning.



Home Minister Bhaktavatsalam witnessing a section of the exhibits in the Madras State Clay and Paper Toys Exhibition held in the City recently.

Use for Retired Scientists

The Indian Council of Agricultural Research has sp nsored a scheme to make use of the services of prominent scientists in the field of agriculture, animal husbandry and allied sciences, who have retired from service or are due to retire soon.

Under the scheme, such scientists who are still active in research will be given an annual allowance up to Rs. 6,000 and a grant ordinarily not exceeding Rs. 4,000 for expenses to enable them to continue their work. For this purpose they should try to secure a sponsoring institution acceptable to the Council which would provide them facilities for the continuation of their work.

Everything New in Science

[Numerous new techniques and devices are daily emerging in this Age of Science to lighten the burden of the housewife, the commmon artisan, the small businessman and the big industrialist. This feature takes note of such developments. Apart from Indian scientific advances, interesting 'bits' from Britain and United States are also included].

The use of Indian graphite for the manufacture of graphite brushes, crucibles, dry cells and pencils would now be possible as a result of a process for upgrading the indigenous ore developed at the National Physical Laboratory in New Delhi. Pilot scale beneficiation trials conducted over the last few years in the Laboratory have yielded fine, low-ash graphite, suitable for a wide range of applications.

The characteristics of the graphite required vary according to the use to which it is put. To examine the suitability of indigenous graphite for various uses, the Laboratory has determined the desirable specifications. Beneficiated Indian graphite has been found to meet these requirements.

For instance, the suitability of graphite for the dry cell or brush industry cannot be judged merely on the basis of fineness and its ash contents. The factors that matter are electrical resistivity and bulk density measurements which are essential for determining the suitability of graphite. Similarly, for crucible manufacture, a knowledge of specific surface of graphite is important, and in pencil manufacture, it is the smearing property. Suitable methods have been devised for undertaking theses tests.

Finance Minister Subramaniam addressing a conference of industrialists held in the City recently which discussed problems relating to the training in industries of engineering students and teaching personnel.



A gas turbine engine of unique design suitable for high speed aircraft has been designed and fabricated at the Gas Turbine Research Centre, Kanpur. The turbine is capable of 13,300 revolutions per minute and has a thrust rating of 2,200 lb.

A special feature of the engine is the annular combustion chamber, which has been incorporated for the first time in a centrifugal gas turbine. The engine is simple in design and its components can be made with conventional machine tools.

The Gas Turbine Research Centre was established in 1958 to conduct studies on design, performance and development of gas turbine engines and their components.

The National Dairy Research Institute, Karnal, has evolved a simple and economic process by which skim milk powder can be made under conditions obtaining in the village. At present large quantities of buttermilk and skim milk obtained as by-products during the separation of cream and ghee are allowed to go waste in villages.

Skim Milk Powder

According to the process developed, the skim milk is evaporated by direct heating in an open pan till a pat is formed. The pat is broken by hand on perforated trays which are then transferred to a drying chamber where a temperature of 110—120°C is maintained. After drying, the powder is ground and sieved to produce a fine, insoluble product which can normally be stored for two months without appreciable deterioration.

A desiccating-*cum*-drying set has been designed for manufacturing the powder. The set consists of an oven, iron pan and stirrer, and a drying cabinet. It can be fabricated at a nominal cost in the village itself.

The skim milk powder obtained by the new method contains all the essential constituents present in skim milk and could be used for indigenous recipes. But unlike, soluble powder obtained by roller and spray drying methods, this powder cannot be remade into milk.

Plaster of Paris

The conditions under which Plaster of Paris suitable for use in the pottery industry can be manufactured on a commercial scale have been investigated at the Central Glass and Ceramic Research Institute, Calcutta.

The open pan process generally employed in India for the production of Plaster of Paris does not permit close control of temperature of calcination of gypsum and ageing of the product. As a result, the quality and performance of the product are not consistent and vary within wide limits.

A calciner to hold the charge of about 25 lb. has been designed at the Institute. It has a semi-cylindrical bottom and a flat top having two vents in it to allow the gases to escape and is provided with a stirrer running along the length. Plater of satisfactory quality has been obtained by calcining gypsum in the calciner for only 1½ hours.

Based on the experience gained with this equipment, a pilot kiln with a capacity of about 160 lb. per charge was constructed to assist in designing a kiln for large scale production. It was found that the entire operation of charging, calcining and discharging could be completed within 1½ hours.

Exciter Machine

A new type of exciter machine has been designed at the Electrical Engineering Department of the University of Roorkee to increase the dynamic stability of water wheel generators and to utilise the increase in currents for higher power output.

Sudden changes in the armature circuit of a synchronous machine cause additional currents in the rotor circuits. In the case of conventional exciter machines (based on separate excitation), the output voltage is constant. The induced currents in the field circuit, therefore, decay with certain magnetic time constants.

To prevent the transient effects from reaching static conditions the voltage at the armature terminals of the exciter should change according to the voltage required for the flow of additional field current.

Based on these considerations a single exciter machine has been designed which incorporates series and shunt windings without any coupling between them. With this arrangement additional currents in the field circuit of the machine could be used to increase the amount of available power.

Indigeneous Menthol

Encouraging results have been obtained in investigations on the extraction of menthol from the plants grown in Jammu. The overall yield of menthol from the natural oil amounted to 70 per cent, according to the results obtained by the Regional Research Laboratory, Jammu.

In the absence of indigenous sources of menthol, India has to import her entrire requirements, estimated at about Rs. 80 lakhs. The demand for the product is fast increasing, particularly from the pharmaceuticals industry.

The Regional Research Laboratory, Jammu, investigating indigenous production of menthol, introduced eight years ago, the Japanese mint, *Mentha arvensis* Linn. in Jammu and Kashmir. The cultivation of the plant is being extended to other parts of the country.

It is estimated that an area of about 6,000 to 10,000 acres has to be brought under cultivation to meet indigenous requirements of methol. The yield of the fresh herb is nearly 200 maunds per acre which in turn yields about 50 lb. of the oil. The dry leaves yield 3—4 per cent oil containing nearly 70—80 per cent menthol.

Wild Life Speech

The Council for Nature, in a new scheme to record the "conversations" of wild life in the United Kingdom, is to send an army of 70,000 naturalists, equipped with tape-recorders, into the fields and woods of Britain. It is hoped that the "speech" of every living creature—mammals, birds, insects, and even fish—will be recorded to contribute to a library which is being set up at the British Institute of Recorded Sound.

Tape-recordings of the sounds, with commentaries explaining them, will be available free to scientists all over the world. These recordings will open up a completely new field to naturalists. Many of these sounds have never been heard clearly before. Most existing records are of bird song; but there are 140 species of mammals in Britain, and numerous fish and insects, all of which make sounds. Fish, naturalists claim, make a barking noise.

Jute Fibre

Research at Kew Gardens, London, on jute plants treated with a plant hormone extracted from a fungus has shown that the length of the fibre cells increased, on an average, about 50 per cent, and often more. The hormone is gibberellic acid.

It is believed, that the discovery may be of major importance to producers of jute, hemp, and possibly other fibres. It was not yet possible to estimate the economic significance of the discovery since the experimental plants were grown under glass and in conditions not exactly ideal. If similar increases in cell length could be obtained in the field, then, provided the cost of gibberellic acid was not prohibitive, it may be possible to make some economic use of this investigation, it was stated.

Artificial Gas Fields

Plans to create artificial underground gas fields to store gas produced in the summer months so that it can be used in winter, when demand is heaviest, have been announced by the British Gas Council. Gas-making processes required a level of capital investment which made it necessary to produce gas at a uniform rate throughout the year. But the demand for gas, as more and more was used for space heating, was becoming more concentrated in the winter months.

To reconcile a constant level of production with seasonal fluctuations, storage space would be needed far beyond what could be provided by traditional gas-holders. Underground storage systems would be created to store some of the summer production for winter needs. Test drills for suitable strata—a porous structure was ideal—were being carried out in several countries. Subsequent results taken from bores would determine where gas would be pumped underground to be stored.

New type Glider

An underwater "glider", shaped like a delta-wing aircraft and fitted with a cockpit and control instruments, is to be used for the first time in exploration work off Malta this summer. It has been designed by members of a party of under-graduates and post-graduates of the Imperial College of Science and Technology, London, who are to make the expedition in July and August.

Their aim is to record accurate measurements of raised and sunken beaches and watch for items of archaeological interest. The "glider", about 6 feet long, will be towed at a depth of up to 200 feet by a boat equipped with a radio-telephone link between its crew and the diver aboard the "glider". One of the chief aims of the "glider" is to ease the physical strain on the diver, usually hampered by the weight of his breathing equipment. The old towing method was for the diver to cling to a rope trailing from the boat.

Electronic "Fish"

An electronic "fish" designed in Scotland is to be used by Italian scientists to plot the magnetic contours of the Mediterranean Sea. The equipment is reported so sensitiv that while under test, it was found that the metal o the golf clubs from a nearby golf club was upsetting th magnetic field and affecting the measurements made b the "fish".

By measuring the magnetic field in the sea, the contour can be plotted in the same way as geographical contour and provide information of interest to geophysicists an oceanographers, it is claimed. The equipment is called Proton Spin Magnetometer. Two "fish" housing elec tronic circuits, towed 1,000 feet astern of a ship, sen back signals, the frequencies of which are directly propor tioned to the earth's magnetic field. These frequencies ar accurately measured and taped by equipment on boar the ship, it is stated.

X-ray Microscope

A new British company has been formed to manufactur a new type of microscope using X-rays. Four models o the microscope are already in use.

The advantage of X-rays is that they penetrate opaqu objects and so can give pictures of internal structures with out the need of thin light-penetrable sections as in th ordinary optical microscope or ultra-thin sections as use in the electron microscope. With this X-ray microscope living things can be examined microscopically and i depth. In metallurgy, too, the uses are many and varied it is stated.

Underwater Communication

An underwater voice communication system for use b divers is now being manufactured by a United State company. It enables one diver to talk with another up t 150 feet away and can be used in water as deep as 120 feet

The system contains two basic parts—a mask-micro phone, which is a partial face mask containing a micro phone, and a speaker-amplifier, which contains a powe supply, amplifier, and speaker system. The speaker amplifier is strapped to the diver's air tank.

Because of the pattern of sound wave radiation in water the user of the device does not have to face the diver t whom he is talking. The waves spread out in all direction and are heard by the other diver without the aid of hearing device. The device is called Scubacom.

"Picture Telephone" Patented

A "picture telephone", which will enable futur telephone users to be seen as well as heard, has been patente in the United States. The system, which uses two-wa television and ordinary telephone lines, produces a sma picture about twice the size of a postage stamp. A small camera and a small picture tube are mounted at each telephone. If the person who is called does not wish to be seen, he can move his head so that it is out of focus. If both the caller and the person called do not wish to use the device, they can remain unseen by simply not turning on the device.

Pictures have already been transmitted by similar telephone devices, but Bell engineers are not satisfied with their quality. They wish to improve the quality before offering "picture phones" to the public.

Membrane Salt Filter

Scientists at the University of California have developed a membrane to filter the salt out of sea water. It is said to be 100 times more effective than any other commercial membrane. The material of which the membrane is made has not been specified.

The membrane, or film, has a large number of tiny pores which, in effect, filter the water and separate the salt brine from the drinkable water. In tests made to date, drinkable water has been obtained at the rate of eight gallons a day per one square foot of membrane area. Of more significance, however, is the fact that the drinkable water has been produced in a single filtering from a brine that contains a 5·25 per cent salt concentration, which is much saltier than ordinary ocean water.

The scientists believe that their process could be used in large-scale commercial conversion plants, because the membrane is both cheap and durable, and the equipment is simple and can operate 24 hours a day without maintenance. Power requirements are as low as for any other salt water conversion process.



Finance Minister Subramaniam addressing the Orientation Seminar of Teachers and Lecturers held in the City recently at the Teacher's College, Saidapet.

Microscope Television

A television system in which a miscroscope plays an important part now makes it possible to see television pictures of some of the world's tiniest creatures. The new magnification system was developed to provide research scientists, laboratory technicians, and educationists with an electronically magnified miscroscope's image for group study.

Called the Elgeet closed-circuit television miscroscope system, the combination of miscroscope, TV camera, and television screen was developed in association with the Allen B. DuMont Laboratories and Sylvania Electric Products, Inc. The system is able to magnify objects more than 2,500 times, it is said.

Rewards for Mineral Deposits Funds

Government has decided to give rewards to persons giving information leading to the discovery of new mineral desposits of economic importance. A reward of Rs. 500 will be given to persons giving information about tin, copper, lead, nickel and some other metals and coking coal. Persons giving information about precious metals like gold, silver and platinum and precious stones like diamond, will get a reward of Rs. 100. A reward of Rs. 200 will be given to persons giving information about other minerals. The grant of a reward is voluntary and does not involve any legal commitment on Government's part.

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SPECIAL FEATURES

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3. RATES OF INTEREST 2½ per cent per annum up to Rs. 2 lakhs for Industrial Co-operatives and 3 per cent per annum up to Rs. 50,000 for other units.

4. OFFICERS EMPOWERED TO GRANT LOANS Director of Industries and Commerce up to Rs. 25,000 himself and up to Rs. 50,000 on the recommendation of the Board of Industries.

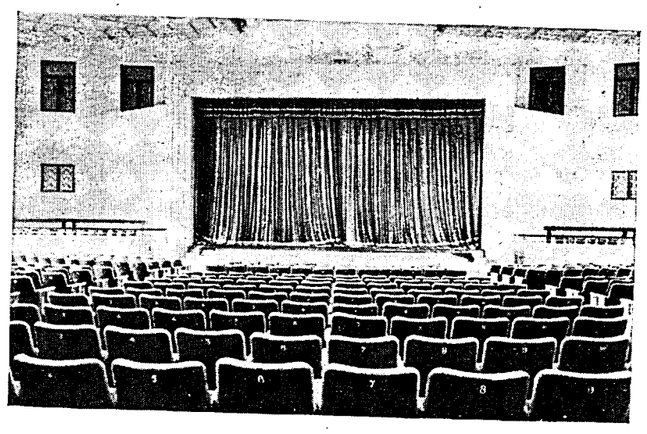
Joint Directors	Rs. 10,000
Deputy Directors and Community Project Officer (Industries), Erode.	Rs. 5,000
Assistant Directors and Cottage Industries Officers in the Districts.	Rs. 2,000

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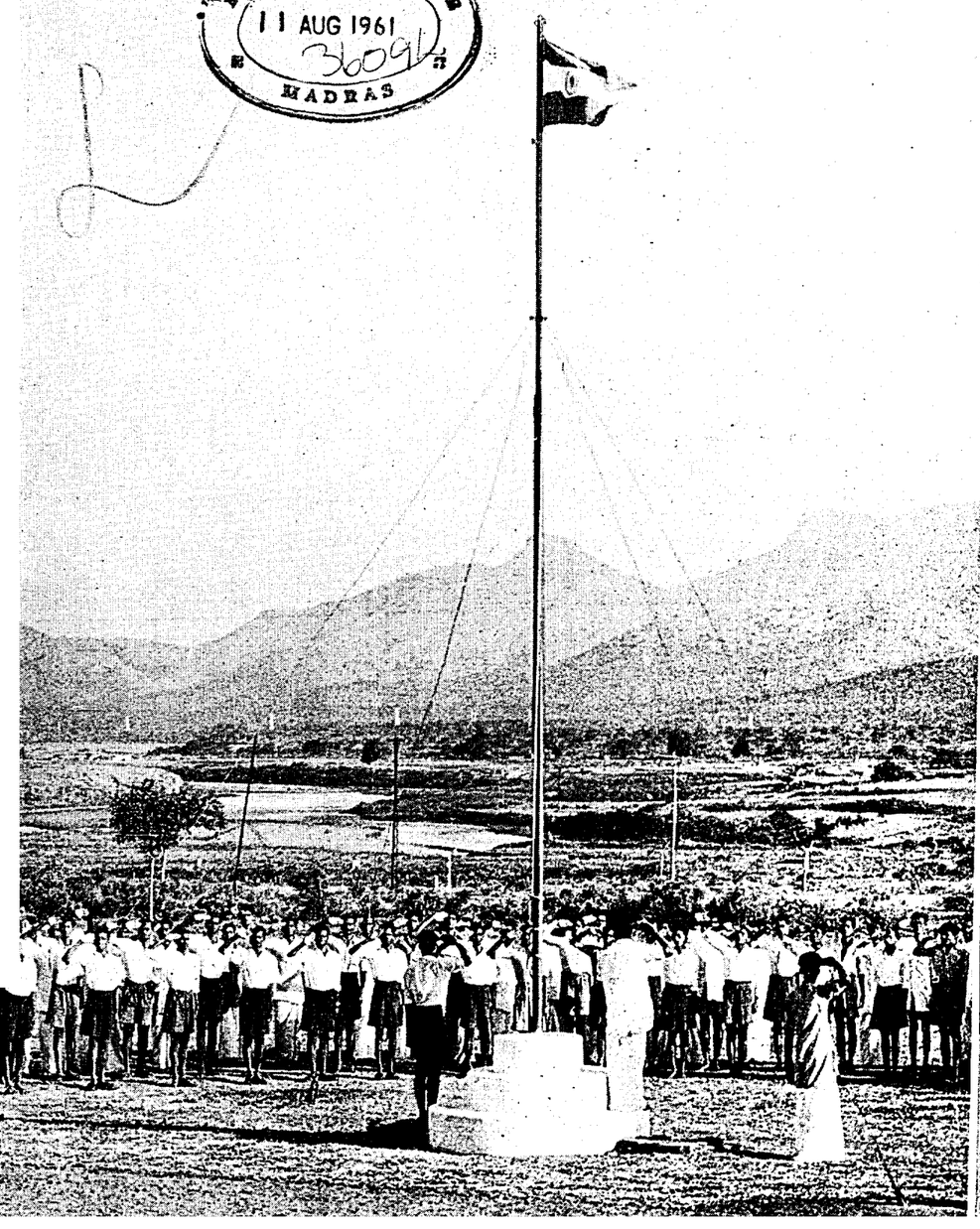


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ADRAS Information

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Plan Results Speak . . . .

The Village and the Farm are the country's life-lines. It is here that the two Five-Year Plans have produced the most striking results in Madras State.

More than 10,500 villages out of 18,000 villages have been electrified, over a lakh power pumpsets are used in farm operations, every village with over 300 population has a school, many good roads provide links with the outside world. Advice under the Community Development Programme has been availed of in cultivation methods with excellent results.

New industries and factories that have sprung up in neighbouring townships have provided gainful employment to village surplus population.

The peasant in Madras State to-day is happy. There is now a new confidence in his face and a new spring in his gait, thanks to the Plans.

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AUGUST 1961

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This month's cover

August 15, 1961, marks the fourteenth anniversary of Indian independence. Considerable progress has been recorded in improving the material and moral well-being of the Indian citizen during this period. The cover design expresses the people's sense of dedication from which have sprung the various constructive efforts that have made national progress possible.



TRADE WITHOUT TEARS

Metric weights have come into use. Prices are expressed in terms of Metric units. And yet, transactions involve irksome calculations.—Why?

Because the Metric concept is not followed. Commodities are asked for either according to old weight or its equivalent:

233 grams — for one pao
454 grams — for a pound
175 grams — for five palams

Either way the advantage of the reform is not realised.

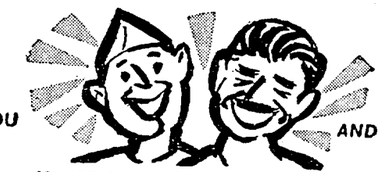
The right way is to ask for

200 or 300 grams
400 or 500 grams
100 or 200 grams

This way we will get full advantage of the reform. Combined with decimal coinage, transactions will be simpler and calculations much easier.

Ask for your requirements in

ROUND **METRIC** UNITS



IT HELPS YOU AND THE TRADER

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DA 61/108



The India of our dreams

[The recent appeal of Prime Minister Jawaharlal Nehru to the services and the people to work continuously and deliberately for the promotion of national unity and the emotional integration of the people of India so that the "India of our Dreams" is an achieved reality gains special significance viewed in the light of the fourteenth anniversary of Indian independence which falls on August 15, 1961. This article gives the text of his appeal].

After fourteen years of independence, fourteen years of hard work and travail, of considerable success and occasional failure, we have arrived at a critical phase in our national existence. Indeed this critical phase applies to the international scene also, and no man can say what the future may bring to this afflicted world.

Mighty Effort

We have started on the Third Five-Year Plan. This is a mighty effort, based on the strong foundations laid in the First and Second Five-Year Plans, and aiming still higher. We are determined to succeed in this great adventure. We have faith in it because we have faith in our people, and it is the hard work and co-operative spirit of our people that will bring success and the advancement of our people to greater prosperity and equality of opportunity. The Third Plan will, we hope, take us out of the rut of poverty that has brought so much unhappiness and degradation to our millions.

To make good Plans is not easy, but far more difficult is to implement them. That implementation demands the joint effort of all our people. More particularly it demands the effort of the vast governmental administrative machinery. I am, therefore, appealing to this vast machinery of Government, spread out all over India, which carries the burden of Government and on whose activities depends the success of everything that we may undertake.

Model of Integrity

I appeal to all of them for integrity in the public services. This is not merely an ideal to be thought of or to be aimed at, but something which has to be practically achieved. It is intimately connected with the individual good of all of us. Let our public services be a model of integrity and efficiency, of co-operation and courtesy.

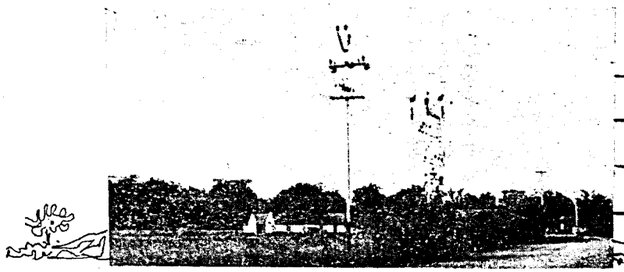
Thousands of years of history have conditioned our people and made our country what it is—an abiding unity and, at the same time, great diversity. People of many religions live in this country, many great languages flourish among our people. And yet, in spite of this variety, there has been a deeper unity which has held us together. Each one of us must realise that the only future for India and her people is one of tolerence and co-operation which have been the basis of our culture from ages past.

Emotional Integration

We have laid down in our Constitution that India is a secular State. That does not mean irreligion. It means equal respect for all faiths and equal opportunities for those who profess any faith. We have, therefore, always to keep in mind this vital aspect of our culture which is also of the highest importance in the India of today. Those who put up barriers between one Indian and another and who promote disruptive tendencies do not serve the cause of India or her culture. They weaken us at home and discredit us abroad. Therefore, it is of the utmost importance that we should work for this emotional integration of India.

This applies to linguistic differences also. It is our proud privilege to have great languages, intimately connected with each other. Let us serve them all and not consider any language which is not our own mother-tongue as something alien. All these languages have grown up through the ages and are of the flesh and blood of India. If anyone is injured, that injury is of India.

I appeal, therefore, for this conscious effort on the part of all of us for the emotional integration of all our people. I want this translated into the day-to-day activities of ours, official or non-official, so that we may build up the India of our dreams.



NEW LOOK IN MADRAS VILLAGES

[The Rural Electrification Programme in Madras State has made striking headway during the past decade. The Prime Minister has been considerably impressed by the State's performance and has stated that this aspect of development was well worth emulation by the other States in India. An attempt is made to present in this article the impact of the Rural Electrification Programme in the State's villages.]

Two aspects of life in Madras State that the traveller by train who has lived through a few decades is bound to notice is the increasing number of wayside railway stations that are electrified and up to date and the dwindling area of darkness by night in the rural landscape. Looking out from the train, the traveller gazing into the night no longer encounters the extending sheets of darkness that characterized the view from the window of the running train a few years ago. His vision is now frequently relieved by spells of bright dotted lines in the distance on either side representing the wide areas in the State to which the Government has carried the benefits of electricity.

The philosophic basis for maximum emphasis on rural electrification has been very well understood in Madras State. Life in the State being predominantly rural, there was little hope of inducing village folk to stay on in their village homes in the face of temptations for prosperous living offered by nearby urban centres unless rural life was speedily improved and brought on a par with urban life. Without right efforts expended in the direction of rural uplift, the call to go back to the villages and serve rural areas would have been quite futile, nor could the exodus from villages have been prevented even with a moderate degree of success.

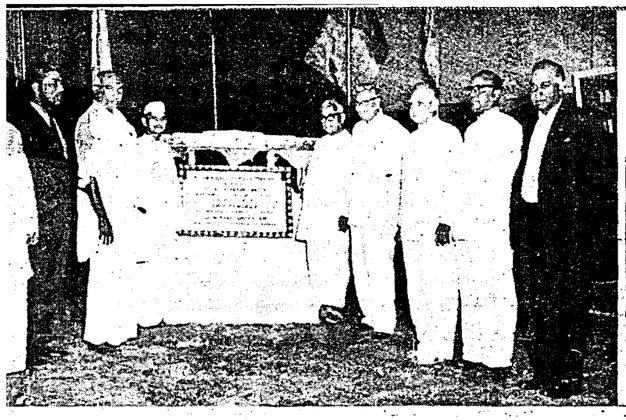
A village street in Kallupatti in Madurai district which enjoys the benefit of electricity.

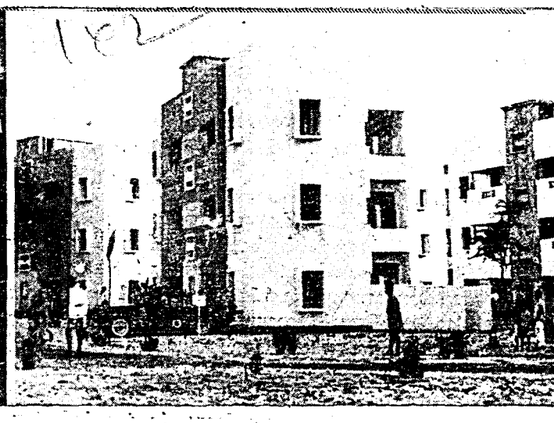


Sincere efforts

Realising the urgency of the problems, the State has made very genuine and sincere efforts to brighten up life in the villages during the past decade. The pace of rural electrification and the extent of achievements that have flowed from the earnest efforts of Government have attracted considerable attention. Electrification has been of special significance in the State's villages and has been responsible for increased food production, employment opportunity and higher living standards to the common man.

Over 10,500 villages in the State today enjoy the bountiful benefits conferred by electricity. Less than 8,000 villages remain to be covered and when that is accomplished, the programme of rural electrification in the State would be complete. It is likely that this will be achieved considerably ahead of the Third Plan period if the State maintains the tempo of development at the rate that has characterized its working in recent years.





Picture taken on the occasion of the inauguration recently of the 'Cochin House' City Police Township by Union Home Minister Lal Bahadur Shastri.

The following table gives an idea of the distance that has been traversed in rural electricity development in the State (from 30 villages electrified in 1935–36 to 8,106 villages by 1958–59):—

Year.	*Number of villages electrified (at the end of the year).*
1935–36	30
1940–41	740
1945–46	804
1950–51	1,613
1951–52	1,820
1952–53	1,981
1953–54	2,187
1954–55	2,392
1955–56	3,321
1956–57	5,016
1957–58	6,362
1958–59	8,106

Different Picture

Before the advent of electricity in the village, the peasant wore away the day, toiling from dawn to dusk, baling water from the well to water his fields. But today thanks to power, he switches on the electric pump to irrigate his farm. By going in for the power pump-set, he saves not only money but a lot of time and energy also which he uses for a host of other fruitful endeavours. His house is well-lighted and wears a prosperous look in happy contrast to the gloomy aspect that it bore in the days when the wick and oil lamp were the only means of lighting at his disposal. The village has good connecting roads that are adequately lighted by electric lamps and wandering out in the nights no longer holds any terror even to children.

Electricity is used in the State's villages chiefly for pumping water for agriculture. Over a lakh power pump-sets are used by peasants in farm operations. The demand for agricultural pump-sets in the State is something phenomenal. In spite of the State Electricity Board connecting well over 10,000 pump-sets annually, still tens of thousands of applications for this type of load remain with them and daily more applications continue to flow in. Nearly 25 per cent of the power consumed in the State is used up by agricultural pump-sets.

Cheap Rates

The most important factor that has contributed to the popularity and use of power in agriculture in the State is the fact that the Government has made Electricity available at cheap rates for the purpose. The cost per unit consumed is very cheap and the annual minimum guarantee per h.p. connected is reduced proportionately to the number of days that the well could not be used on account of drought conditions. For agricultural consumers, the security deposit is collected only for two months whereas in respect of other consumers, more is collected. Agricultural consumers are classified as essential consumers and the Electricity Department erects the service line at its own cost. New connections for agricultural pump-sets are treated on a priority basis.

The considerable saving in cost to the farmer by using electricity for lifting water from wells for agriculture per acre per crop of paddy has been the direct contributing factor to the popularity of the power pumpset in the village. Whereas through the use of the bullock and diesel engine the cost worked out to Rs. 300 and Rs. 83 respectively, by using the electric pump, it worked out to Rs. 50 only.

Processing Industries

Besides lighting, electricity is used in rural areas for processing industries like rice hulling, groundnut decorticating, oil pressing, sugarcane crushing, cotton

ginning, tape weaving, etc. Over 6,000 industries with a connected load of about 35,000 K.W. now thrive in the State's villages.

While agriculture is the backbone of rural economy in the State, the handloom industry is without doubt the next in importance. Apart from the skilled craftsmen who traditionally follow this occupation, the handloom industry provides subsidiary occupation to the agriculturist during the off season. In the light of increasing difficulties faced in countering the competition from mill-made cloth, increased adption of the powerloom in the industry is being propagated.

Cottage Industry

Another important phase of rural life where power has made a significant impression, is the cottage industry. Another fruitful off-season occupation of the farmer, he has adapted a number of such industries like silk, lace throwing, knitting machine, carding for woolen druggets, tape weaving, button making, fountain pen making, etc., to work on electricity. These cottage industries operating chiefly in Salem, Ramanathapuram, Madurai, Chingleput and Coimbatore districts have steadily increased with the growing capacity of the villager for capital outlay on machinery and other equipment. Power is offered to these industries at the same cheap rates as for agricultural pumping. These industries are encouraged as they have been found helpful in reducing unemployment in the villages and creating a marketable surplus of consumer goods.

Bright Centre

The pace of power development in development block areas has been very satisfactory. The Electricity Department has been giving topmost priority to power extensions in the National Extension Service and Community Block Development areas and loans for execution of schemes have been promptly utilised.

The availability of electric light and running water with modern sanitation in villages has reduced the gulf between urban and rural life. The amenities have been brought on a par and have considerably nullified the glamour of city life. Prospects of the exodus to the towns from the villages have been arrested with the progressive development of the village as a bright centre of social life with possibilities of cheerful living.

Soil Pedology

It is proposed to set up an All-India Institute of Soil Pedology (Soil Science) during the Third Five-Year Plan period. The Government of India have provided Rs. 60 lakhs for this purpose. An amount of 6,00,000 dollars is expected to be made available from the U.N. Special Fund for getting the necessary equipment from abroad.

The Institute, which is likely to be located at Nagpur, will survey and apprise the soil resources of India and provide essential information about the soils to serve as a basis for the agricultural development projects in the country.

The Institute will undertake advanced training programmes in subjects like soil mechanics and pedology. It will also intensify and co-ordinate fundamental and applied research work on soil being carried out at different institutions and universities in the country. The Institute will have a farm attached to it where field experiments can be conducted.

CHIEF MINISTER IN CHINGLEPUT VILLAGES

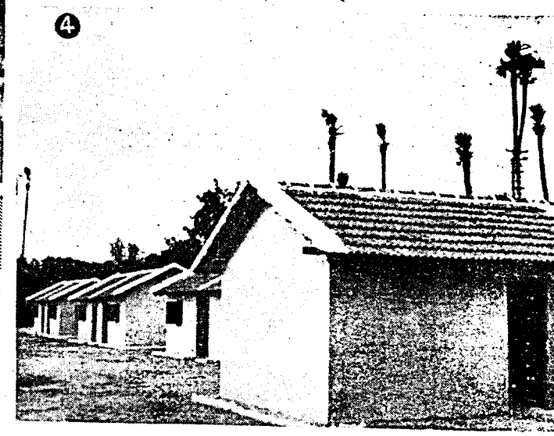




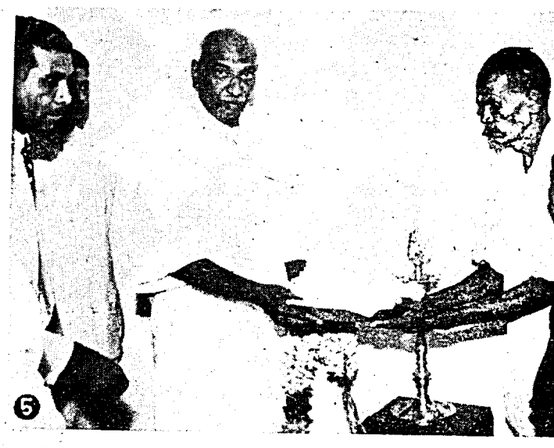
(2)



(3)



(4)



(5)

(1) With milk vendors of Madhavaram Colony. (2) Accepting gift of land for a High School in Red Hills area from donor R. Govindarajulu Naidu M.P. (3) With womenfolk in Orakkadam Village. (4) and (5) The Harijan Colony inaugurated at Avadi. The Chief

TOWARDS BETTER *English teaching*

M. MUHAMMAD GHANI, *Deputy Director of Public Instruction.*

The need for the Madras English Language Teaching Campaign arose on account of the revision of the syllabus in elementary schools by which English was promoted to the fifth standard of elementary schools from the First Form of High Schools. This meant the training of 27,000 fifth standard teachers of elementary schools in the most up-to-date methods of teaching English as a foreign language.

The problem posed was so immense that all the earlier ideas of retraining courses were found inadequate to the demands of the new situation. A new pattern of training had to be devised. After much thought and consultation with the British Council, it was decided that the only feasible method of training such a huge number of teachers within a reasonably short period would be to adopt a system of relay. Instead of a small expert team directly training the elementary school teachers, it was resolved to train in the first instance graduate teachers from High schools and then get these graduate teachers to run training courses for elementary school teachers in the areas in which they work. The courses for graduate teachers were to be called Primary courses and those for secondary grade teachers were to be called Secondary courses.

First Primary Course

The first Primary course under this plan was started in September 1959. Since then a large number of Primary courses have been conducted and following them a still larger number of secondary courses have been conducted for training elementary school teachers. A misunderstanding that persists even in knowledgeable quarters that the Madras English Language Teaching Campaign is a scheme of the British Council has to be cleared before noting its progress. This scheme for the improvement of the standard of English-teaching in the schools of the Madras State is a Government scheme run on Government funds. This statement is however not meant to belittle the contribution that the British Council is making to the actual execution of the scheme.

British Experts

The programme and content of training given in Primary and Secondary courses is of the British Council's shaping. Besides, they have found for the Campaign three United Kingdom experts on the teaching of English overseas whose salaries they are subsidizing on a liberal scale. They have also provided books and a certain amount of equipment for the Campaign training centres. From their London Headquarters downwards they maintain a close and continual supervision over the Campaign. The day-to-day running of the Campaign is actually the biggest job of the British Council's Education Officer in South India.

For the purpose of the Campaign, the State has been divided into five areas. The scheme provides for a separate training centre for each area. The Madras area, consisting of the Revenue Districts of Madras, Chingleput and North Arcot, is served by a Training Centre at Pallavaram. This was the first Training centre to be opened and for some time this was the only training Centre in the State. Since then three more Training Centres, one at Coimbatore, another at Virudhunagar and the third at Tiruchirappalli have been opened. These centres now serve the entire State except the Tirunelveli area comprising the districts of Tirunelveli and Kanyakumari. It is hoped that a Training Centre for the Tirunelveli area will be opened as soon as the required staff and premises are available.

The Secondary Course

The Primary course is intended for graduate teachers drawn from High schools and Training schools. This course is residential and lasts for three weeks. So far, conducted. In these, about 1,350 graduate teachers have been trained in the latest methods of teaching English especially to beginners. Out of these graduate teachers are formed teams of secondary course Tutors. Each team consists of 5 tutors and is entrusted with the training of about 30 elementary school English teachers in secondary courses.

The Secondary course differs from the Primary course in several ways. This course is neither residential nor intensive like the Primary course. It consists of evening classes on two days in a week and is spread over a period of five months. So far 136 such Secondary courses have been organized. About 2,000 teachers have already completed their training while another 2,100 teachers are undergoing it. This leaves about 24,000 more elementary school teachers still to train. This may seem a formidable figure but actually there is no ground for gloom. The progress till now has been slow because the compaign started with only one training centre and gradually expanded into other areas. But now, with four Training Centres in operation and a fifth round the corner, one can look forward to a rapid pace of progress in the near future.

An Impeding Factor

One of the major factors that have impeded the quick deployment of the Campaign has been the difficulty in finding suitable staff-Tutors. The staff-Tutors have to fulfil certain essential requisites and they are not easy to find. The nets are cast far and wide for such people. But the catch has so far been rather disappointing. People from Colleges, High Schools and the Inspectorate of the Education Department have been drafted into the campaign and yet the campaign is short of staff-Tutors. It is on account of this shortage that the opening of a Training centre for the Tirunelveli area has been hanging fire.

The progress of secondary courses has also been affected by lack of staff-Tutors to organize and supervise them. However, the position has not remained altogether gloomy. With the Campaign getting more widely known, more and more people are getting interested in the Campaign. Things have begun to brighten up. The picture has become more hopeful now than before that it should be possible to find as many suitable persons as are needed for Staff Tutors.

An Interesting Fact

One of the interesting facts about the Campaign has been that as it went along, the training programme and also the objectives of the Campaign have been subject to constant re-thinking and revision. The Government at

rovement of English teaching in all the schools of the State, elementary as well as high schools. However, in practice, it was faced with the immediate problem of training the teachers who were handling the beginner's classes in the fifth standard of elementary schools. So the training programme had to be severely limited to the objective of training this type of teacher.

But soon it was realised that if the Campaign concerned itself only with the first year of English, it would accomplish little. On the contrary, it would almost certainly result in a huge waste of effort and money. If the children were taught the beginnings of English alone soundly by trained teachers in the fifth standard and if they were allowed to be taught by teachers not trained in the Campaign in the second and third years of English, the Campaign's work would not be sustained. All that had been accomplished at much cost and pains in the first year with Campaign-trained teachers would be completely undone by the untrained teachers in the next higher standards.

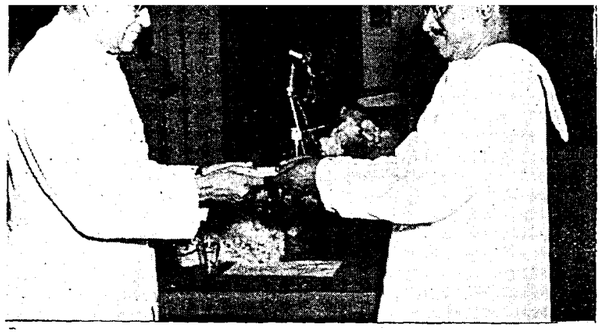
Fair Solution

It was therefore realised that it was imperative to bring into the Campaign's fold the teachers of English in higher standards also. The secondary courses which previously trained only fifth standard teachers now include Secondary Grade teachers from High schools and Higher Elementary schools. It is hoped that this will ensure in some measure that the children who learn the beginnings of English according to the Campaign method will continue to benefit by such methods in the next higher standards.

This however still leaves out the problem of High school standards. The last three years of English in the VIII, IX and X standards of High schools are taught by graduate

Chief Minister Kamaraj who recently distributed prizes at Salem to winners in the fourth quarterly Prize Bond Draw giving away the first prize of Rs. 7,500 to Sri S. M. Subrahmanyam.





Industries Minister Venkataraman who recently distributed prizes at Coimbatore to winners in the fourth quarterly Prize Bond Draw giving away the first prize of Rs. 7,500 to Sri K. Periaswamy

teachers. It has been admitted on all hands that the standard of English in the High schools is lamentably low.

The Campaign however is not at the moment geared to the needs of High school English-teaching. It cannot forget its first task of training the vast army of V standard teachers in elementary schools. At the same time, it cannot afford to leave the High schools altogether out of the picture. There were also the difficulties of running a Campaign like this indefinitely to deal with different levels of English teaching in successive stages to be considered.

High School Teaching

It was therefore felt that some attempt should be made as part of the Campaign to do what could be done for High school English-teaching. To this end, an idea of running within the Campaign special courses for Headmasters of High schools is under consideration. As this is something of a new off-shoot, the Campaign has for the present contented itself with an experimental pilot course of two weeks' duration for He[illegible]ers. This course was run at Pallavaram for Headmasters drawn from Madras, Chingleput and North Arcot Districts.

In some ways, this pilot course has been a revelation. Headmasters of High schools who are senior men of the teaching profession, conscious of their status and dignity, surprised everyone by the warmth of their friendliness and their willingness to listen to and absorb new ideas and techniques. This has given hope that by training the Headmasters in the most up-to-date methods, the level of English-teaching in the High school standards can be improved, However, whether at this stage of the Campaign the venture in this new direction can be undertaken on a large scale is a matter for high level decision.

Good Results

What is the 'end-product' of the Campaign like? Has the elementary school teacher trained in the Campaign absorbed all that the Campaign gives to him and how is the teaching? While seeking answers to such questions one should remember the situation of the Elementary school English teacher. He is no doubt an S.S.L.C. passed Secondary Grade Trained Teacher. But he has never taught English at all and what English he had when he took his S.S.L.C., he has had plenty of time to forget. The Campaign picks him up and puts him through 40 evening classes. The result cannot be expected to be spectacular. And yet there is ample testimony to the good that the Campaign has done.

Those who have seen the Campaign trained teacher in action agree that the training has made a big difference for the teacher and even more for the children. Learning English is no longer painful but a lively and joyous experience which the children look forward to. It is indeed this joy of the children in learning English that is keeping the Campaign going.

Travel grants to Professional Troupes

The Union Ministry of Scientific Research and Cultural Affairs has introduced a new scheme for giving travel grants to professional troupes to promote the study by individual theatre groups of the techniques of other similar troupes. The scheme will enable members of professional troupes such as producers, sets-designers, lighting experts, choreographers and make-up men to visit other professional troupes and learn their techniques. A maximum grant of Rs. 2,500 per troupe will be sanctioned in a year.

Colombo Plan Day Feature

Progress of Community Development

[In connection with Colombo Plan Day which recently marked 10 years of growing mutual co-operation among 21 countries of South and South-East Asia, this feature article is presented. The community development programme of the Plan has been implemented in India more extensively and with greater results than elsewhere, and much has been achieved in making the villager self-sufficient in the primary needs of life such as food, clothing and shelter since the programme was launched].

According to the United Nations, the term 'community development' connotes the processes by which the efforts of the people are united with those of Governmental authorities to improve the economic, social and cultural conditions of communities, to integrate these communities into the life of the nation, and to enable them to contribute fully to national progress.

This complex of processes is then made up of two essential elements. the participation of the people themselves in efforts to improve their level of living with as much reliance as possible on their own initiative; and the provision of technical and other services in ways which encourage initiative, self-help and mutual help and make these more effective. It is expressed in programmes designed to achieve a wide variety of specific improvements.

Long-term Programmes

Community development is broad in its aims and methods Many of the programmes in the Colombo Plan region are nation-wide, although they began as pilot projects and have spread slowly. They are long-term programmes and not only do they have multiple objectives (social, cultural, economic, civic) but they also bring a wide range of means to bear on the achievements of those objectives.

Of all the Colombo Plan countries that have implemented the Community Development programme, India has been by far the largest and with the maximum of impact. The central objective of this programme, launched on October 2, 1952, has been to make the villagers self-sufficient in the primary needs of life, such as food, clothing and shelter. The emphasis has been on the development of self-reliance in the individual and initiative in the community, so that the people are themselves able to manage and run their affairs.

Agriculture, being the mainstay of nearly 70 per cent of the rural population, has received the highest priority in the programme. Other activities of the programme include improvement of communications, promotion of cottage and small-scale industries, education, health and sanitation, better housing, women's and children's welfare, as also the development of sports and cultural activities. Significant achievements have been made in all these fields. Much more important than the physical gains has been the change in the outlook of the people.

The Blocks, each one of 100 villages and a population of 60,000 to 70,000, are allotted only after the people in a given area have given proof of self-reliance through such norms as agricultural production, utilization of irrigation facilities, keeping the village clean, having a co-operative, a panchayat, etc. Each Block undergoes a pre-extension phase of one year. Then it enters Stage I, during which a sum of Rs. 1·2 million is provided for five years. After a Block has passed through Stage I, it enters Stage II. The total amount of funds allotted for a Stage II Block is Rs. 5,00,000 for a five-year period. These special funds are in addition to the normal funds flowing from development departments.

People's Participation

In the earliest projects, launched in October 1952, it was noticed that the people came forward voluntarily to improve agricultural production, extend communications and pave the streets, put up schools and health centres and so on. So spectacular were the results that there was widespread demand from the neighbouring areas for extension of the programme. Today the programme covers 3,110 Blocks embracing 368,200 villages with a population of 204 million. The entire country is to be covered by Community Development Blocks by October 1963.

Up to the end of September 1960, the value of the people's voluntary contribution amounted to Rs. 937 million

as against the Government expenditure of Rs. 2,008 million. During the First-Year Plan, a provision of Rs. 965 million was made for the Community Development programme. The amount provided during the Second Five-Year Plan was Rs. 2,000 million. The allocation of the Third Five-Year Plan for Community Development and Co-operation will be of the order of Rs. 4,000 million.

Aid From T.C.M.

In the initial stages, the United States provided necessary funds for producing equipment from outside India, such as jeeps, tractors for road building, agricultural demonstration equipment, mobile cinema units and other equipment for transport, audio-visual aids, etc. The revised estimated cost of the T.C.M. aid to the programme is 13,525,195 dollars. Dollar assistance under the Indo-U.S. Technical Assistance for the purchase of equipment was discontinued about four years ago, and requirements of equipment are being met out of the Rupee provision in the Block budget.

Although the development programme of aided self-help was taken up by the Government agency with peoples' participation, the ultimate aim was to make it a people's programme with Government's participation.

Panchayat Raj

A high-powered team was set up by the Planning Commission in 1957 to review the progress of the programme and to suggest measures to accelerate it. This team, presided over by Shri Balwantray Mehta, made recommendations and envisaged a three-tier system of 'Panchayat Raj' i.e., setting up of statutory people's organizations at the village, Block and District levels. The system has now been implemented in Rajasthan, Andhra Pradesh, Madras, Orissa, Assam and Mysore. It is expected that in about another year the pattern will be in force throughout the country.

Under the new set-up, the 'Panchayat' in the village will be elected by its adult population or the 'Gaon Sabha'. The Panchayats will send their elected heads or 'Sarpanches' to the next higher body—the 'Panchayat Samiti'. This will correspond roughly to the new unit of development, the Community Development Block, or a hundred villages on an average. The Samiti will also have co-opted members representing women, backward classes, etc. This body will be in overall charge of the development of the area. The technical and other personnel of the Block will henceforth act under the Samiti's guidance. The apex of this three-tier system will be the 'Zila Parishad' or the District Council comprising the Presidents of the Block Samitis and the local Members of Parliament and the State Legislature.

Each block is under the charge of a Block Development Officer, who is assisted at the Block level by a team of eight extension officers. They are subject-matter specialists in agriculture, animal husbandry, cottage industries rural engineering, social education, public health, co-operation and panchayats. There are ten 'Gram Sevaks' or Village Level Workers (men) and two 'Gram Sevikas' (women) in each Block. The Village Level Workers are given extension training for two years in various subjects of importance, and they help to maintain liaison between the village people and the team at the Block level. They maintain a two-way traffic, acting as the multi-purpose extension agent at the village level and transmitting the people's problems back to the Block for solution.

Because of its all-embracing character, the Community Development programme has from the beginning encompassed the other Central Ministries, such as Food and Agriculture, Commerce and Industry and Education. They drew up their training programmes for workers in their respective fields. The Ministry of Community Development stepped in to provide training for other categories of workers. The Ministry has been developing its resources for training and orientation of such administrative and technical personnel—from the State headquarters to the field level—through the apex Central Institute of Study and Research in Community Development, Mussoorie, the Institute for Instruction on Community Development, Dehra Dun, and the numerous Orientation and study Centres, Social Education Organizers' Training Centres, Mukhya Sevikas' Training Centres, and so on.

In other Countries

India has shared her knowledge and experience in the field of Community Development with other Colombo Plan Countries. Since 1956, twenty-two persons from six countries have spent varying periods of training in India. The countries from which they came are New Zealand, Laos (which sent the maximum number of 10), Burma, Indonesia and Nepal.

The following is a round up of the main features of Community Development Programme in other countries of the region :—

The Pakistan Village Agricultual and Industrial Development (or Village AID or V-AID) Programme is the second largest Community Development Programme in the world. By December 1959 it had established 141 development areas covering more than 27,000 villages, and had upwards of 3,000 V-AID workers on the job, three-fourths of them in the West.

Following a United Nations advisory mission in 1955, Indonesia began a National Community Development Programme on a modest basis but with important announced aims. Sixteen new pilot projects, each covering an administrative district, are initiated each year with district officers in charge, supported by Dxtension Officers of the technical Ministries.

Ceylon

One of the oldest programmes, dating back to 1947, is that of Ceylon. Approximately 7,000 "Rural Development Societies" now cover the island-autonomous and democratic bodies whose main functions are to give their members a new form of social organization through which they can undertake activities for improving neighourhood life. More than 3,000 women's societies also operate actively in the villages of Ceylon, side by side with the Rural Development Societies.

The Philippines took up community development work seriously in 1954 by creating a Community Development Planning Council and in 1956 established the present programme under a Presidential Assistant on Community Development (PACD). By 30th June 1960, 6,327 barrios (villages) in 433 municipalities in 53 provinces had been covered by the Government programme. Under this programme, 26,526 projects were approved, of which 18,819 or 70·87 per cent were implemented and completed, benefiting about 5 million people.

Burma

A full-scale community development pilot project was launched at Payagyi, Pegu district, in 1955. Several years earlier, the Government formally began its pyidawtha ("Welfare State") grants—for local public works—to divisional committees composed of officials and representatives of the people, a programme which resulted in considerable construction activity all over the country.

In Nepal, a Village Development Programme was launched in 1956. Dividing the country into 165 blocks, it aims at establishing village and rural development centres in various parts of the country for the all-round development of the local communities and to achieve full coverage about 5,800 villages and serve nealy 2·2 million peole.

In Laos, the Rural Affairs Commission set up by the Government went into full operation 1959-60. In 1959, under these projects, 350 schools, 35 dispensaries, 207 meeting halls, 107 model workshops and 6 markets were set up. Other projects carried out included irrigation canals, wells, small dams and minor airfields.

Viet Nam

A quite different pattern has evolved in the Republic of Viet-Nam. After the Geneva Agreement of 1954, the southern part of the country had some 2,000 "civic action agents", working in the villages in mobile teams to promote security and civic education. From 1957 onwards roughly one-half of these agents have been assigned to be given districts specifically for community development work, with support from specialists (now about 400 in number) trained for "civic action" and with large numbers of helpers hired as needed on a daily basis. All hamlets and villages were brought into the operation from the outset.

Cambodia's Ministry of Planning initiated in 1959 a Community Development Programme by establishing pilot projects in two provinces and broadening the other existing fundamental education projects.

Thailand

In Thailand, following earlier efforts by its Department of Public Welfare, the Ministry of Interior, began in 1958 its Community Development Programme. By the end of 1960, every Province was expected to have at least one rural development unit operating under this programme.

The Federation of Malaya began in 1958 to offer grants to assist the States' Community Development Project. At the Federal level, the sponsoring Department of Community Development forms part of a newly established Ministry for Rural Development.

Community development schemes designed to improve living conditions on a self-help basis are in operation in North Borneo and Sarawak.

Catalogue of Plant Life

The National Science Foundation, Washington, is supporting a project to catalogue all of the earth's plant life into a master index for researchers throughout the world. The International Business Machine (IBM) computors will aid in the task of indexing the world's plants, estimated to number 1·7 million, by group, family, genus and species. The result, to be published in 50 volumes, also will provide a cross reference of everything which has been written by major botanists. The project is expected to clear up the confusion which has arisen because scientists working in different places and times have often attached different names to the same plant.



PROFILE of a Prize Bond Winner

[A profile of Sri R. Chinnappan, a Pointsman in the Southern Railways at Samalpatti, who won a first prize of Rs. 7,500 in the III Quarterly Prize Bond Draw held on March 1, 1961 is presented in this article. According to him the Prize Bond has greater meaning to the large masses of poor people like him than to the rich. To the poor man, the Prize amount, whatever it is, is real luck and verily a fortune if it is a first or second prize. He also appreciates the Prize Bond as a form of saving, if not anything else. If one gets the prize, well and good; if not, the money is safe and is useful in the hands of the Goverment till it is returned to you at a later date, he states.]

Mr. R. Chinnappan, a Pointsman in the Southern Railway at Samalpatti Station, had the good fortune of winning a First Prize of Rs. 7,500 in the Prize Bond draw held in the month of March 1961. The Prize Bond with the lucky number AP 471231 purchased by him at Kallavi Post Office on October 10 1960, brought him the fortune.

He purchased the prize bond of his own free will convinced that the Government Prize Bond Schem is a good scheme and the money is being utilised for national development work. His own railways provided an example of such development. Also, the scheme assured him the chance of making a fortune without having to lose the amount that he invested in the Prize Bond.

Happy Family

Hailing from Kodumudi near Erode, Chinnappan who is 43, joined the Railways in 1941 and has served the Railways since then. Happily wed to Muthammal, Chinnappan has a cheerful family of four children. One of them is a girl now studying in High School in the VI form. She was also instrumental in persuading her father to purchase the prize bond. She was able to do so because she is supposed to be the lucky girl in the family.

Chinnappan, like millions of his countrymen, belongs to an agricultural family and owns a piece of land. He hopes to add to that holding by purchasing more land with the prize amount. According to him, there has not been anything like great luck in his life until the prize bond brought it to him. He however owns that his present position in the Railways is by itself a very satisfactory situation.

A very simple and honest man, Chinnappan is also a strong believer in savings. He has a savings account in the Post office and has deposited his savings in it. He has saved considerably and also purchased land out of savings. He will now add more land to his holdings and on retirement proposes to give all his time to cultivation.

Greater Meaning

Chinnappan's family employ themselves in rearing cattle, selling milk, etc. They live carefully and always try to save something. Chinnappan attaches importance to the education of his children. He intends putting his daughter who has taken the S.S.L.C. examination in a Training School to get herself trained for teaching, which he considers is a very noble profession.

According to Chinnappan the prize bond has greater meaning to the poor than to the rich. To poor persons like him, the prize amount, whatever it is, is real luck and a fortune if it is a first or second prize. To the rich the prize amount will mean merely an addition to the bank balance. He feels that every family, and if possible every citizen in the country should purchase one prize bond at least, if not more, and keep the doors open for the angel of fortune to enter freely.

FORTUNE FAVOURED THEM



Here are some Winners in the IV Prize Bond draw, who won prizes upwards of Rs. 1,000, from various districts in the State —

I Row :—Salem District : S. M. Subramaniam Rs. 7,500 ; Ramalinga Pandaram Rs. 2,500 ; Marimuthamma Rs. 1,000 ; Chinnamm Rs. 1,000 ; Venkatappa Gounder Rs. 1,000 ; II Row :—P. S. Swami Rs. 1,000 ; C. Masilamani Rs. 1,000 ; Coimbatore District : K. Peri swami Rs. 7,500 ; Muthuswami Gounder Rs. 2,500 ; S. R. Konda Gounder Rs. 1,000 ; III Row :—K. Mariappan Rs. 1,000 ; Govindaswar Gounder Rs. 1,000 ; Nania Naicker Rs. 1,000 ; Chinnaswami Rs. 1,000 ; Devaji Rao Rs. 1,000 ; IV Row :—N. Dandapani Rs. 1,000

From Aranthangi to Avadayarkoil

[The Minister for Industries, Sri R. Venkataraman, laid the foundation stone for the Bridge across the Vellar in Thanjavur district at mile 7/4 of Arantangi-Mimisal Road during May 1961. The Chief Engineer (Highways and Rural Works) welcoming the Minister and others gave an account of the Highways works already undertaken in the district and those contemplated for early implementation. He also described the salient technical features of the Bridge across the Vellar for which the foundation stone was later laid by the Minister.]

It will be fitting on occasions like this, to give a brief glimpse of the work of this department with particular reference to the programme of works in hand in this district and those contemplated in the immediate future.

It has been the proud privilege of our State to stand foremost of the States in our country, possessing a well laid grid of good roads. It is a matter for gratification that this District has got one of the largest net-work of roads in this State. In the commencement of this century, i.e., in the year 1901, there were 1,732 miles of roads in this District of which only 200 miles were metalled and that too with poor quality of laterite stones. The remaining 1,532 miles were only earthen roads. These figures can very well be compared with total mileage of 3,356 miles consisting of 1,073 miles of Major District Roads and Provincial Highways and 2,283 miles of Other District Roads and Village Roads by the end of the Second Five-Year Plan period.

Several handicaps

Despite the several handicaps such as dearth of road materials, costly transport and geophysical conditions of the District with a net-work of rivers, canals and channels and with alluvial sub-soil for the roads, this District has achieved a good progress in the improvement of Roads.

Specific mention may be made of the Cauvery bridge at mile 1/1 of Ayyampet Ganapathy Agraharam Road. Next comes the set of bridges across 4 rivers between Papanasam and Kabisthalam (viz., Kudamurutty, Thirumalairajan, Arasalar and Cauvery) at a cost of Rs. 9·93 lakhs. Another bridge is across Vennar in Kambanthangudi limit at a cost of Rs. 5·8 lakhs. The latest additions to the series are the new causeways, submercible bridges and high level bridge works across Maharajasamudram, Agniar, Mudhalamuttiwari, Arasalar, Pamaniar, Vettar, Kaduvayar Ammanar, Adappar, and Vedaranyam Canal. The construction of bridges and high level causeways in Muthupet-Mimisal Road, Pattukkottai, Peravurani, Aranthangi Road, Aranthangi-Pudupatti Road and Kanur-Tirupunavasal road are also being taken up. New works to the tune of about 3·27 crores are proposed in the draft III Plan for this District inclusive of Eat Coast Road Scheme.

This bridge across the river Vellar has been taken up for execution at an estimated cost of Rupees Five lakhs. The proposed site for the bridge is on the downstream side of the existing crossing at mile 7/4 of Aranthangi-Mimisal road which is an important Major District Road connecting the taluk headquarters of Aranthangi in Thanjavur district with the pilgrim centre Avadayarkoil, an ancient place of historical interest and the main Sethu Rastha or the proposed East Coast Road. This important road caters for the need of the several coastal villages and thousands of pilgrims who visit Avadayarkoil, the abode of Lord Athmanathan, where Manickkavachaga Swamigal, Minister of Pandya Kingdom, received mukthi (blessings). This road is interrupted by two major rivers, viz., Vellar at Mile 7/4 and Koluvanar at mile 20/6. The inhabitants of this area have been suffering untold hardships in crossing the sand rivers with their carts laden with goods. Through traffic has been interrupted in some years even for a period of one month due to seasonal heavy freshes in the river Vellar. The public of the locality have justly been agitating for the construction of these two bridges for long. Realising the importance and urgency, the work of constructing a bridge across river Vellar has been sanctioned.

Technical details

This bridge across the river Vellar consists of 10 spans of 40′ clear. This will function as a pucca bridge to pass all the maximum flood waters and thereby serve the people throughout the year. R.C. Tee Beam Superstructure will be laid on vibrated cement concrete piers and abutments. The clear roadway on the bridge will be 24′ wide with R.C. Kerbs on either side to serve as wheel guards. Necessary R.C. hand rails and posts at suitable intervals will also be provided on the edges of the bridge to guide the traffic. The total length of the bridge will be 483 feet between pylons and the length between face to face of abutments will be 436 feet. The approach roads of the bridge will be formed to connect the existing main road with suitable transition and circular curves. The roadway over the approaches consist of 6″ granite soiling and 6″ metalling. The bridge has been designed for I.R.C. Class AA loading.

YELAGIRI a new summer resort

[Yelagiri, on top of the Yelagiri Hills, in the Thiruppathur taluk of North Arcot district, has remained in oblivion too long and the ghat road leading to the place, now coming up, should soon put Yelagiri in the tourist map. For picturesque, Yelagiri, with her lovely climate and natural attractions, affords ample scope for being developed as a summer resort and the ghat road marks only the beginning of the process.]

As the traveller nears Jalarpet on the Madras-Bangalore railway line past Vaniyambadi and scans the view to his left during day time, a surpassingly clear ghat road line in the distance impinges on his vision. For quite a few miles, his road formation dominates the landscape. This is the road leading to Yelagiri, now nearing completion, thanks to the speed and efficiency of the State's Highways and Rural Works Engineers.

Yelagiri is in the Thiruppathur taluk of North Arcot district. A three-mile ride from Jalarpet takes one to the start of the nine-mile road that leads up to the hills.

This roadway when perfected for regular traffic will set in motion developments that may result eventually in the transformation of the now little known Yelagiri into a popular summer resort. The place certainly has the makings of one. There is no spot of comparable merit in the vicinity.

Surprisingly Flat

The plateau of Yelagiri atop the hill is surprisingly almost flat. The slopes are gentle. The altitude of the hill where the ghat road ends is about 3,200 feet. The hill overlooks a picturesque valley covered with thick virgin forest where wild life thrives.

The entire area of the Yelagiri plateau is arable and fertile. It has adequate water sources and water is easily struck at any depth from 20 to 25 feet. The land is versatile in its yielding capacities. Besides paddy, ragi, maize, cumbu, horsegram, blackgram, samai, jack fruit, etc., coffee and pomegranates have also been tried by cultivators with success. The forest yields bamboo and gallnuts.

The climate of Yelagiri is cool, pleasant and equable making it eminently suitable for being developed as a summer resort for people in the neighbouring districts. The rainy season ranges from May to November and the average annual rainfall in the region is about 45″. The temperature ranges from 65°F to 75°F in summer and from 50°F to 60°F in winter.

Pastoral Serenity

Having an area of about 5 square miles, Yelagiri has 13 hamlets including its major villages. The population is in the region of 8,000 most of which comprises agriculturists and farm labourers. The people lead a life of pastoral serenity and are quite self-contained. Whether the hill people are resident there from time immemorial or are the descendants of people who might have fled there seeking shelter during the medieval Muslim invasions and just stayed on finding the place and climate eminently suited for healthy and peaceful living, are matters for conjecture. Nobody living there is able to throw any light on this aspect. All they do know is that they were born and bred there and so were their forefathers.

There are also a handful of European and Anglo-Indian settlers in Yelagiri. These are among the few who live in brick and mortar houses. The rest of the people live in huts. The climate and plantation prospects have been the factors that have lured them to the hills.

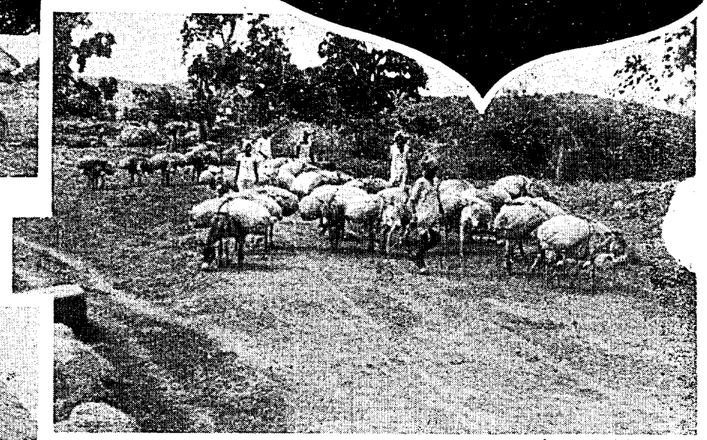
Brighter life

Mr. Newman, one of the settlers giving his reaction to the ghat road coming up welcomes it as opening up hopeful prospects for a brighter life in Yelagiri. For one thing,

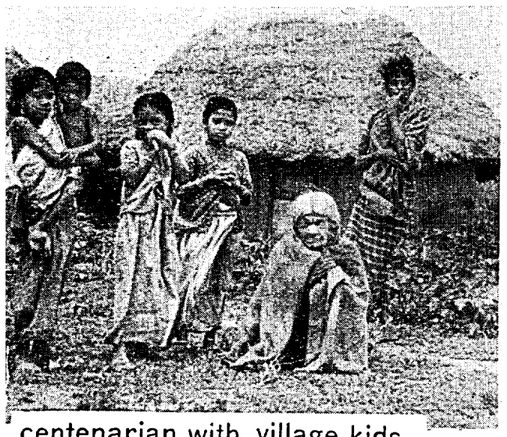
Road to YELAGIRI



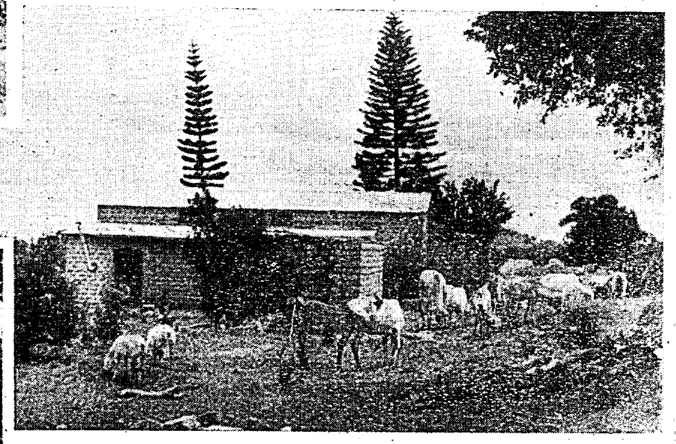
typical hamlet in Yelagiri



pack animals carrying produc

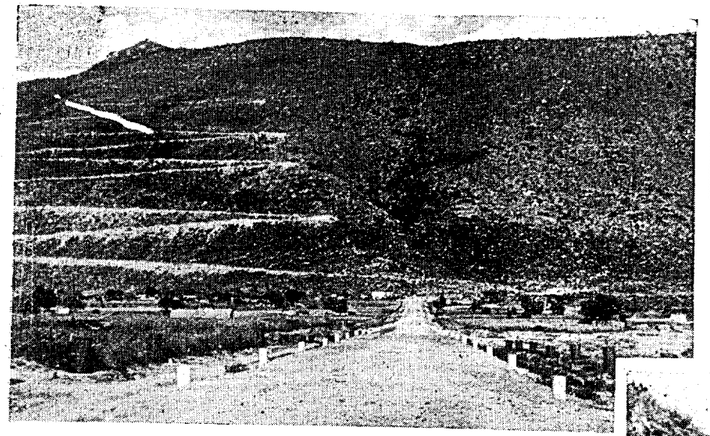


centenarian with village kids

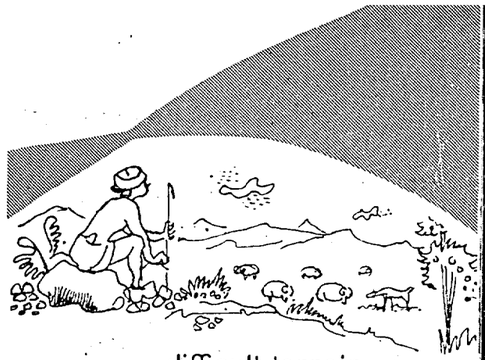




a farm house



view of ghat road formation



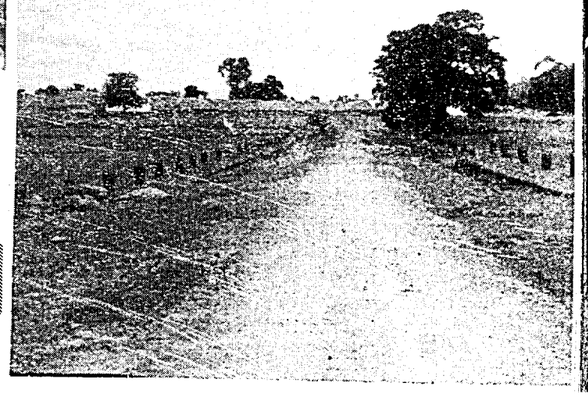
difficult terrain

men at work





the road on top



a European or Anglo-Indian settler would no longer have to deny himself the benefit of married life for fear that his wife might run back to her parents in the plains below not being able to bear the isolation on the hills. Also, the farmer selling his stock need no longer be at the mercy of the lone bidder who comes up the hills and buys produce at the price he lays down secure in the certainty that the planter would be reluctant to undertake the arduous task of taking the produce downhill where however he could get a better price for it. The opening of the road puts a vitally different complexion on life in Yelagiri and opens up prospects of speedy communication and commerce and possiblities of a larger social life. Thus Yelagiri should be very much in the news before long.

Health Resort Too

Another interesting aspect of life in the Yelagiri hills is the longevity of life there to which many vouch. In fact a 100-year woman who posed for a photograph walked away after being snapped with steps so brisk that many less than half her age might surely have envied.

A dryness in the climate coupled with the unruffled pace of living in Yelagiri makes it suitable for development as a health resort too. Lung ailments are absent and the place is remarkably free from Malaria though one might naturally have expected its prevalence there.

It was originally proposed to form an earthen road only to ease the problem of transporting forest and hill produce for marketing at the nearby towns of Jalarpet, Vaniambadi and Tirupattur. The hill people were resorting to head-loads and pack animals and making use of four bridle paths to reach the plains for trade and other purposes.

Tourist house

But the earthern road idea was given up with the growing realisation of the possibilities of developing Yelagiri as a tourist centre, in favour of a pucca metalled motorable road with black topping that is now coming up. An amount of Rs. 16·40 lakhs was sanctioned for the road work and this also included the construction of a rest-house at the hill top at a cost of Rs. 40,000. The site for the rest-house has been decided. The metalled road is in process of completion. The road project includes cross drainage works, construction of three minor bridges, three road dams and thirteen hair-pin bends.

A well has been proposed at a site in the middle portion of the ghat road to meet the needs of visitors and travellers who may need water for filling up radiators of cars and for the benefit of lorry traffic.

Pretty picture

The view of the ghat road 'presentation' from the distance is one of the clearest of such works from the visual point of view. One can see the road tearing across the hills up to the tenth of the thirteen hair-pin bends which is indeed very remarkable. When the benefit of electricity is taken to Yelagiri this ghat road formation should present a very ornamental and pretty picture in the nights.

Numerous hill stations are there in South India, all of them designed to meet the requirements of the affluent classes of people. But not all can afford trips to places like Ooty, Yercaud, Coonoor, Kotagiri or Kodaikanal. A hill station for people with moderate means within easy reach from the city has been a long-felt need. Perhaps, with progressive development, Yelagiri which is only 140 miles from the city might fill the bill in this regard.

HowerYelagiri has a long way to go before it can attract the holiday maker. The benefits of power water-supply and other amenities have to be provided and tourist angles investigated and developed. Government is expending efforts in this direction. The ghat road to Yelagiri marks a significant beginning.

Fish Production in 1960

Fish production in India during 1960 was the highest ever recorded. The total fish yield both from the sea and inland water, amounted to well over 14 lakh tons. This was the target set for the final year of the Second Five-Year Plan. Sea fish landings were about 8·8 lakh metric tons. The marketable surplus of inland catches amounted to nearly 2·8 lakh tons. There were also yields from inland water and small ponds. There were excellent yields of Sardines and Mackerol. Mechanisation of fishing craft and the introduction of synthetic fibres like nylon were mainly responsible for the marine production. Inland fisheries received impetus by the introduction of a new variety of quick-growing fish called the "Common Carp" from the Far East.

Research on Communicable Diseases

After the recent decision that the Indian Council of Medical Research should concentrate its research efforts on health problems of national importance, top priority is being given to research in communicable diseases like cholera, tuberculosis, leprosy, trachoma, poliomyelitis, filariasis, etc.

For the first time cholera has been successfully transmitted to animals, young rabbits, and this achievement has provided a new tool for experimental work in elucidating the pathogenesis and for screening drugs in the treatment of the disease.

In a recent survey conducted on a nationwide basis, it was estimated that the total number of 'active' and 'probably active' cases of pulmonary tuberculosis alone would amount to five million in the country. With the lengthy and expensive schedules of present-day chemotherapy and with limited hospital facilities, the control of the disease poses a practical problem.

T.B. Chemotheraphy Project

The T.B. Chemotherapy Project at Madras has made studies of domiciliary treatment of these cases and these studies have revealed that cases treated at home, in spite of inherent defects, responded as well as cases treated in sanatoria. An important observation has been that family contacts of patients treated at home were exposed to no greater risk of infection than those treated in sanatoria. In devising control measures, those findings are of significance not only to India but also to other developing countries with similar local problems.

In leprosy the relationship between the fundamental pathology of deformity and the secondary exciting factors has been investigated. Methods of prevention of deformity are being explored and methods have been devised for repair and reconstruction of deformed faces and limbs. The results of reconstruction surgery of feet have been analysed and a new method of balancing the feet in a lateral direction has been developed.

B.C.G. and Leprosy

An organism simulating leprosy bacillus, both morphologically and immunologically, has been grown for the first time in special tissue cultures. Evidence has been collected to show that experimental transmission of human leprosy to certain animals is possible. These results, if confirmed, will provide new tools for research. A promising observation which requires a detailed study is the claim that B.C.G. vaccination confers immunity against leprosy. Plans are now being drawn to exploit the prophylactic potentialities, if any, of sulphone therapy and B.C.G. vaccination among the contacts of leprosy patients.

A survey of the incidence of trachoma as a part of Trachoma Pilot Project activities has been made. Simple and effective treatment schedules for the control of this disease have been evolved and are being tested.

The Indian Council of Medical Research has in recent years enlarged scope of research in the field of virus diseases. The poliomyelities research unit at Bombay, besides carrying out investigations on several aspects of the disease, has also undertaken the training of a number of persons (in the general technique of polio work) and has supplied virus strains, to various laboratories in India.

Fighting Trachoma

Tests on human volunteers of a new vaccine which has already successfully immunized baboons against a trachoma-like infection will soon begin in London. Details of the experiments are given in the annual report of St. John's Ophthalmic Hospital, Jerusalem, by Sir Stewart Duke-Elder—Hospitaller, world-famous eye specialist, and research director of the Institute of Ophthalmology.

"A vaccine has now been evolved which will prevent the development of infection in baboons," he writes, "immunizing them against inoculation with large doses of virus so nearly related to trachoma as to be indistinguishable from it in the laboratory.

This is an immense step forward, and holds out the expectation that a vaccine which will protect humans against trachoma will eventually be evolved.

"Research of this type, if it is to be conducted on scientific principles, is a long process, but the time may not be far distant when our hospital in Jerusalem will be in a position to play the main part in a campaign against trachoma which may well eliminate one of the greatest medical and social scourges of the Middle East."

New Hearts for Old

The surgeon's dream—a bank of spare hearts, kidneys, or lungs from which to draw replacements for damaged,



Chief Minister Kamaraj recently unveiled a portrait of Sri T. T. Krishnamachari, former Union Finance Minister, at a function held under the auspices of the Small-Scale Industries Association at St. Mary's Hall.

diseased, or worn-out organs—is perhaps one step nearer realization as a result of a discovery made by scientists at the National Institute for Medical Research, London.

The scientists have been working on the problem of protecting tissue from damage during deep-freeze storage. They found that a simple chemical compound, dimethyl sulphoxide, was better than the substance now used (glycerol) in preventing damage in deep-frozen mouse bone marrow.

Since 1949, a wide variety of living cells and tissues, including human red-blood cells and eye tissue, have been protected with glycerol, banked at the institute at very low temperatures and subsequently thawed out and used successfully in transfusions and grafts. Successful long-term cold storage of whole organs, such as hearts, depends on no damage being done to the capillaries in those organs while they are frozen.

Dr. Audrey Smith, at the institute, has recently compared the effects of both glycerol and the new protective agent on the circulation of the blood in the capillaries of live animals. Using film techniques, she showed clearly that the new agent had less effect on stopping blood flow, and caused less wall damage to capillaries, than did glycerol. It may now be possible to store whole organs under deep-freeze satisfactorily, but the problem still remains of getting one creature to accept a replacement organ from another.

The results of experiments with mouse bone marrow are important because human bone marrow can now be deep-freeze banked even more satisfactorily, and should give even better results when used to treat, for example, side-effects arising from radiation treatment of cancer.

Results were obtained by suspending mouse bone marrow cells in both glycerol and solutions of the new agent, deep-freezing both, and subjecting the thawed-out material to microscopic examination and to tests in irradiated mice. Under the microscope it could be seen that many more cells in the new agent solution remained alive. When injected into the veins of mice given normally fatal doses of radiation, marrow cells protected with the new agent enabled a higher proportion of mice to live to a ripe old age.

Children's Heart disorders

A hi-fi recorder to detect heart disorders in children has proved highly accurate in mass trials here. The machine tape records heart beats, then amplifies the sound through a special hi-fidelity system to produce clear "playbacks" that are easily interpreted by heart specialists. The American Heart Association has verified the device as 91 per cent accurate in a test of 33,026 Chicago school children.

The machine's accuracy ranks with the best public health detection techniques in any field, including chest X-rays to discover tuberculosis, according to Dr. Oglesby Paul, President of the American Heart Association.

The recorder was built by Joel Willard, a Chicago recording expert. He said the key problem to overcome was to boost the sound of the heart's "flub-dub" and to get rid of extraneous sounds associated with amplification.

A method for repairing blood vessels without using stitches has been developed at the University of Texas M. D. Anderson Hospital and Tumour Institute. Doctors there "glue" the incision together with liquid plastic. So far their experiments have all been on dogs, with no adverse reactions, they report. The veins heal together within two weeks, and the plastic adhesive gradually disappears.

Smokeless Domestic Fuel

Smokeless domestic fuel can be obtained from Neyveli Lignite according to pilot plant studies carried out by the Lignite Project authorities. Compared with charcoal, processed lignite brings about 1·25 per cent saving in domestic fuel consumption. The by-products, obtained in the course of processing lignite are chemical-grade phenols, cresols and zylenols as well as char dust. Char dust can be used as fuel in the cement and brick industry.

Science in the news

[Numerous scientific developments, new techniques and improved devices are steadily emerging in this Age of Science to lighten the burden of the common artisan, housewife, the small businessman and the big industrialist. This feature notes such developments. Apart from Indian scientific advances, interesting bits from Britain and the United States are also included.]

One of the significant developments in the field of power generation in 1960–61 is the harnessing of hill streams fed by glaciers, producing enough electric power for groups of villages in remote areas in the country.

During the Second Plan a micro or baby hydel set was installed at Chaila, in Himachal Pradesh, on an experimental basis, for harnessing the waters of the Giriganga, about 18 miles from Simla. This power house has been meeting the demands for electricity from the nearby villages, and a second set is being installed in the Bharmour valley in Chamba district and another is being planned for Chini in 1961–62. In the Third Plan period, it is proposed to instal 13 micro sets in Himachal Pradesh.

The head required for these micro sets is low—a maximum of 25 feet with adequate water flow. An attempt is being made to use timber planks for penstocks instead of cement and steel and assemble and erect them at site. These stations would operate either unattended or attended by junior line staff for continuity of supply.

Aluminised Steel

The National Metallurgical Laboratory, Jamshedpur, has developed a new process for aluminising steel surfaces thus providing corrosion and heat resistance properties to such surfaces.

Aluminised steel could be used to replace galvanized steel in sheet, strip, wire, tube and hard-ware coating plants as the import of zinc for galvanizing forms a serious drain on India's foreign exchange resources. About 30,000 tons of zinc per year, representing more than half the total annual imports, are employed for galvanizing steel sheets and other ferrous products.

Aluminised steel has bright prospects of replacing galvanized steel in commercial and farm buildings, rolling shutters and silo covers because aluminium coatings are much superior to zinc coatings when exposed to industrial and highly humid atmospheres. Resistance to fire damage is also better in aluminised steel as compared to galvanized steel.

Most of the raw materials for aluminising steel such as hydrochloric acid, linseed oil and commercial aluminium are available in India.

Cryolite manufacture

The National Metallurgical Laboratory, Jamshedpur, has undertaken investigations for the manufacture of cryolite which is one of the essential minerals required in the steel ceramic and aluminium industries.

Cryolite is not found in India and is imported from Denmark and Greenland. The annual imports total about 7,500 tons.

The laboratory is investigating the possibility of producing cryolite from low grade fluorspar containing a high percentage of silica. Fluorspar of this type is available in Rajasthan, Madhya Pradesh and Bombay.

High grade cryolite can be obtained by the interaction of metallurgical-grade fluorspar with sulphuric acid and boric acid through the intermediate formation of fluoboric acid and subsequent precipitation of cryolite by the interaction of fluoboric acid with hydrated alumina sodium and carbonate. In the process, boric acid can be re-generated and re-used. High grade gypsum is also obtained as a by-product.

The National Physical Laboratory has developed two new processes for the manufacture from indigenous raw materials of magnetic fluid used in the detection of cracks in ferrous metals. Hitherto, such fluids were being imported from abroad. The cost of manufacture in India has been estimated at Rs. 1·00 per litre.

The two processes consist in preparing magnetic iron oxide from either magnetite ore or ferrous sulphate and oxalic acid. For making magnetic fluid, the iron oxide is mixed with aluminium stearate, calcium oleate and distilled kerosene oil in requisite proportions.

The capital outlay for a plant of 500 kg. per month capacity is estimated at Rs. 10,000 with a running cost (including raw material, labour, depreciation, etc.) of about Rs. 5 per kg.

Camphor Distillation

The Forest Research Institute, Dehra Dun, has devised a plant for the distillation of camphor from the leaves of camphor-yielding Ocimum by a cheap cottage-scale unit without the use of a steam boiler. The unit, which can be easily fabricated, can be worked in places where tap water is available. A suitable modification of the unit for use in areas where tap water is not available has also been made. A battery of three such units will cost about Rs. 500 including all accessories required for its operation. One man can conveniently operate three units.

Details of the fabrication of the distillation plant, its working and economics, are described in the Indian Forest Bulletin No. 210, published by the Manager of Publications, Civil Lines, Delhi.

Indigenous Pectin

A process on pectin and tartarate from tamarind fruit pulp has recently been developed at the Central Food Technological Research Institute, Mysore. Tartaric acid and its salts like potassium sodium tartarate are extensively in use in various food, pharmaceutical and chemical industries. Pectin is used for the manufacture of fruit products like jams, jellies, preserves and marmalades. Indigenous manufacture of tartaric acid, its salts and pectin is expected to effect considerable saving in foreign exchange.

Both liquid and powder pectin samples were tried in jam batches of raspberry, straw-berry, grapes, etc. The pectin was found to be suitable for the purpose.

The major raw material required for the process is tamarind fruit pulp which is available in the country. Other raw materials, alcohol, potassium carbonate, hydrochloric acid and sulphuric acid are also readily available in India.

Tamarind grows extensively in India, in both cultivated and wild forms. About 300,000 tons of tamarind pulp are available every year. The pulp contains 12—15 per cent tartaric acid and 2·5—3 per cent pectin. The acid pulp of the ripe fruit is used mostly for culinary purposes and recovery of pectin and tartarates has not been attempted so far.

Tartarates from Tamarind

In foreign countries tartaric acid and its salts are obtained as a by-product of the wine industry. An alternate raw material for pectin available in India is citrus peel in which it is present to the extent of 3—4 per cent.

Working on the utilization of tamarind fruit pulp, Central Food Technological Research Institute has developed a process for recovering pectin and tartarates from the pulp. The tamarind pulp is extracted with hot water and the extract obtained by centrifuging the boiled slurry. The extract is concentrated in an evaporator. Pectin is precipitated by adding alcohol to the extract from which tartarates have been previously removed.

The process has been studied on a semi-pilot plant scale using up to 112 lb. of pulp per batch. During these experiments recoveries of the various products were pectin 2·8—3 per cent, tartarates 12–13 per cent and invert sugars 25—30 per cent on pulp.

Plant and machinery required for the process consists of centrifuges, double effect evaporator, filter press, drier, ball mill, vibrating screen, distillation column, boiler, wooden vats and storage tanks. Total capital outlay for a plant producing 310 lb. of Rochelle salt and 50 lb. of pectin per day is estimated at about Rs. 5 lakhs.

Dr. M. S. Ocpara, Premier of the Eastern region of Nigeria, who visited the City recently was greeted on arrival at the airport by Industries Minister Venkataraman.



A new and promising process for desalting sea or other briny water to get drinking water has been developed by Research Engineers Sidney Loeb and Srinivasa Sourirajan at the University of California at Los Angeles (UCLA). The pair has successfully tested a special membrane with a large number of tiny pores that separate the salt from the potable water.

To make their film the UCLA engineers mix cellulose acetate with an aqueous magnesium perchlorate solution and acetone and then cast the sticky mixture cold on a glass plate. The plate is immersed in cold water, after which a film four-thousands of an inch thick is stripped from it and shrunk slightly in hot water. The finished membrane, mounted on each side of a porous steel disk, can filter water 100 times faster than previous commercial films. A large number of disks are stacked in a frame press and salt water circulated through the unit at 1,000 pounds per square inch pressure. Desalted water flows from the bottom of the unit.

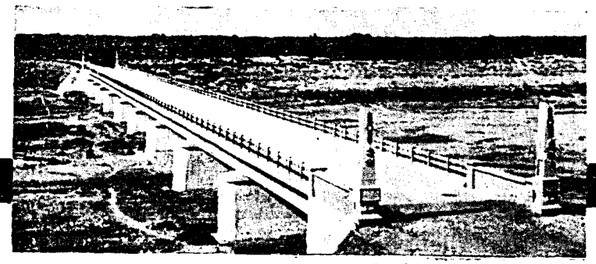
At present the two engineers get potable water at the rate of eight gallons a day per square foot of membrane area from a single filtering of a 5·25 per cent salt concentration, much saltier than sea-water. They expect improvements to do better but believe that even under present circumstances the process promises an improved desalting operation, because the film is cheap and durable, equipment simple, operation can go on 24 hours a day without maintenance, and power requirements are as low as those of any desalinisation process.



Chief Minister Kamaraj recently declared open the Satyyamurti High School of the Bala Mandir, T'Nagar.

Development of Scientific Instruments

Seven new scientific instruments have been developed in Indian Laboratories. The first, an electronic salinity meter, developed at the Geophysics Department of the Andhra University helps in the quick determination of the saline content of rain water. A simple and highly sensitive light weight electrical thermometer, useful in oceanographic studies has also been developed there. A low cast instrument for accurate determination of the concentration of air under conditions of high turbulent flow is reported from the Department of Civil and Hydraulic Engineering, Indian Institute of Science, Bangalore. An improved design of a detector useful in the detection of nuclear radiation is reported from the Atomic Energy Establishment, Bombay. Two interesting instruments have been developed as a result of research sponsored by the Hyderabad Science Society. One is used for measuring bullet velocities and the other for measuring short intervals of time of the order of 1/100000th of a second. The Technological Research Laboratories of the Indian Central Jute Committee, Calcutta, have designed and fabricated an instrument which enables the measurement of the hardness modulus of individual filaments of textile materials.



Bridge across the Marudayar

[Sri P. Kakkan, Minister for Works, opened the Bridge across the Marudayar river at mile 96/7-8 of Koilpatti-Tirumanur road in June this year. Built at a cost of Rs. 7·6 lakhs, the bridge has a breadth of 24 feet and is strong enough to permit a tank traffic across it. The Chief Engineer (Highways and Rural Works), who welcomed the Minister and others referred to the vagaries and the fury of the floods of the Marudayar river and explained that the site of the bridge had been finally decided only after taking into consideration all the useful observations made by the Committee of expert bridge engineers appointed to examine the problem of floods from the river in the particular area. He also gave an account of the progress of Highways works in Tiruchirappalli district on the occasion. This article gives the substance of his statement including some technical details of the bridge]

The opening of the bridge across the Marudayar river at mile 96/7–8 of Koilpatti-Tirumanur Road has marked the completion of the third major communication link in Tiruchirappalli district after Independance, the first and second being the Cauvery Bridge near Pugalur on the Benares-Cape Comorin Road and bridge across river Marudayar at mile 38/4 of Tiruchy—Chidambaram road respectively.

The Marudayar river which takes its origin from the high lands in Perambalur taluk and which crosses Koilpatti-Tirumanur Road at mile 96/7-8 gets flooded during heavy rains.

Vagaries

The vagaries and the fury of its floods have always been unexpected. Even after a few hours of rain in its catchment the river in the present site of the crossing used to get flooded and bring traffic to a stand-still without notice.

The floods of this river caused the saddest of the calamities in one of the worst known Railway disasters in living memory in South India, whereby 147 human lives were lost. The railway bridge itself was damaged and the old road bridge at this site was also badly damaged. A special Committee of expert bridge engineers was appointed to go into the behaviour of this river during floods and the Committee had made several interesting and useful observations. Taking a lesson from the trend of events which no amount of theoretical calculation could foretell, the site was changed to a new position 400 feet downstream with adequate waterway so as to satisfy all technical considerations.

Striving Hard

The Koilpatti-Tirumanur road which starts in Koilpatt on Tiruchy—Viralimalai—Madurai road, runs through Manapparai, Kulittalai, Musiri, Turaiyur, Perambalur, Ariyalur and goes up to Manamadurai (via) Tirumanur, Thanjavur and Pudukkottai and the stretch of road from Perambalur is classed as State Highways and the total length of the road in this district is only 31 miles and four furlongs.

It is also to be emphasized in this connection that it is increasingly realised by one and all that sooner the rural net-work of roads is established, the greater and faster will be the pace of economic and social development. A good communication will facilitate cultural contacts, stimulate the growth of trade and commerce and generally tend to increase the prosperity of the country as a whole. With this object in view, the Highways and Rural Works Department was formed in 1946 solely for the formation and maintenance of communications. Ever since it inception, this department has been striving hard to achieve the objects that the department was intended to fulfil.

Tiruchirappalli district is one of the earliest to get its main roads black-topped. The present total mileage of roads in this district is 2,837 miles and this will be doubled during the course of another 20 years. The achievements from the commencement of the First Plan up to date in this district are 12 miles of cement concrete, 616 miles of black-top roads, 113 miles of new metalling, 916 miles of new formation and construction of 8 major bridges and 11 numbers of improvement works including minor bridges and culverts, etc.

Technical Details

The construction of the bridge across Marudayar on Tiruchirappalli–Chidambaram road six miles downstream was completed and thrown open for traffic in 1959. Another bridge across the Coleroon river as the link with Thanjavur district and the execution of the Cauvery Bridge adopting the most modern techniques of pre-stressed concrete on the Tiruchirappalli–Srirangam bye-pass were some of the schemes sanctioned during the Second Plan period. With the completion of the schemes proposed in the Third Plan, the road communication facilities in this district will reach a very high degree of development.

The bridge across the Marudayar on the Koilpatti-Tirumanur road consists of 9 spans of 60′ each and is designed for I.R.C. A.A. Class loading with a roadway of 24′0″ between kerb. The bridge has been constructed with circular well foundations of 12′0″ external diameter taken down from 14′ to 28′ below bed level and seated on rock. The substructure is of mass concrete 1 : 3 : 6 with 20 per cent plums and the superstructure consists of reinforced concrete Tee beams with cross beams and deck slabs. About 256 tons of steel and 899 tons of cement have been used on the work. The final cost of the construction of the bridge is expected to come to Rs. 7,60,000 against the estimated cost of Rs. 8,00,000 and a sum of Rs. 40,000 may be the savings effected on the estimated cost.



Governor Bishnuram Medhi planting a sapling at Raj Bhavan in observance of Vanamahotsava festival.

Progress of Civil Aviation

Air India International and the Indian Airlines Corporation carried more passengers, cargo and mail during the second half of last year than in the first. A review of the progress of civil aviation during that period shows that Air India International flew on its scheduled services more than 65 lakh kilometers. The number of passengers also showed an increase from over 47,163 to 65,101. Air India International introduced a weekly service on the route Bombay–Karachi–Bahrein—Kuwait and started operating a cargo service to London with their own Super-Constellation aircraft. Indian Airlines Corporation introduced non-stop services between Delhi and Kathmandu and Calcutta and Kathmandu. A direct service between Delhi and Rajkot was provided. The east-west runway at Bombay (Santa Cruz) airport was extended and opened to use by Boeing jet aircraft. The fourth prototype of the two-seater Asvini glider was completed and test-flown successfully. Air transport agreements were signed between the Government of India and the Governments of Iran and the Republic of Czechoslovakia.

Sharing fruits of Research across the World

[That Science goes beyond national frontiers is amply demonstrated by the work of the Commonwealth Scientific office which, from headquarters in London, channels the fruits of scientific research across the world. In this article Keith Bean gives an account of the working of this agency which has not had the publicity that efforts stemming from United Nation Agencies and from regional arrangements like the Colombo Plan have enjoyed.]

Science goes beyond national frontiers. It is a truism which, in the light of the secrecy sometimes dictated by security, may seen questionable. But its truth is daily demonstrated in the great international drives to rid the world of malaria and other diseases, to conquer hunger by better husbandry.

Many of these efforts stem from United Nations agencies and from regional arrangements like the Colombo Plan. Less publicized are the British Commonwealth Scientific Offices (BCSO) which, from headquarters in London, channel the fruits of research across the world.

Significantly, this is one of those links which countries emerging into full nationhood do not want to break. Here on one floor of the headquarters building in London are scientific officers of India, Pakistan, and the Federation of Rhodesia and Nyasaland as well as of Canada, Australia and New Zealand.

Varied and comprehensive

Ghana and the Federation of Malaya have recently accepted an invitation to take part in BCSO activities, and Nigeria, Cyprus, and Sierra Leone have been invited to join. Ceylon maintains scientific liaison. Thus here is a body which brings research men together in co-operation closer than political or constitutional links.

But the benefits are not confined to Commonwealth countries. Recently, for example, a South American republic asked its embassy in London for documentation on the improvement of pasture lands. Since Australia, the least fertile of the continents, has had to face this problem, the query went to the Australian liaison officer at BCSO headquarters—and field work in one country is making for better living in another half a world away.

The information which flows into BCSO is as varied and comprehensive as the field of its outflow, for here, too, are a Commonwealth geological liaison officer and the oversea liaison group of Britain's Department of Scientific and Industrial Research, which maintains scientific attaches in Russia, North America, France, Germany, Scandinavia, and India and is appointing a representative in Japan. The world picture is completed by BCSO (North America,) covering Canada and the United States. And on the British Commonwealth Scientific Committee, under whose aegis BCSO operates, the United Kingdom is represented by the Department of Scientific and Industrial Research, the Medical Research Council, the Agricultural Research Council, the Nature Conservancy, and the Colonial Office, and other Commonwealth countries by the heads of their national research organizations.

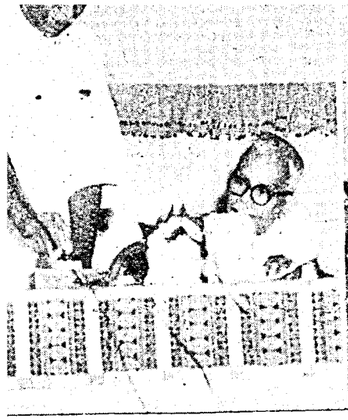
Pool of knowledge

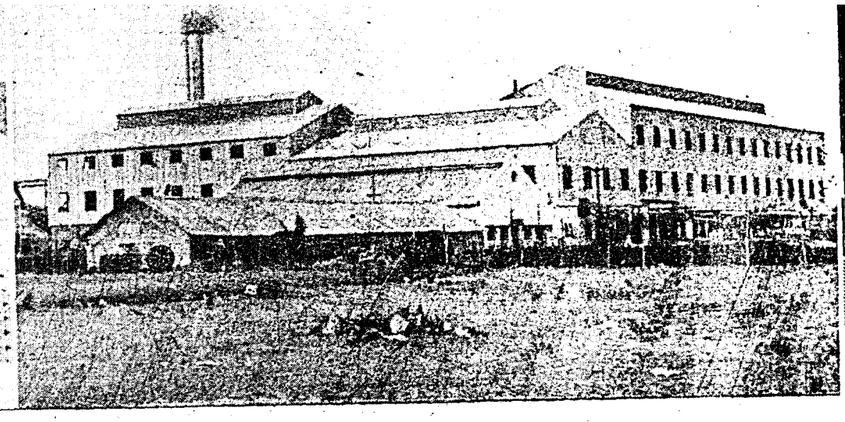
No country has enough research men, but in BCSO there are means for each member country to draw on the work done in any or all of the others, and to know about the research going on in the world at large.

BCSO has directories of species in the culture collections of micro-organisms throughout the Commonwealth. Its index of translations of scientific works cuts out duplication

Chappals specially designed and manufactured for the use of hand-cart pullers by the Central Leather Research Institute were distributed to a deserving group by Sri J. Krishnaraj, Deputy Commissioner of Police, Law and Order.







Chief Minister Kamaraj recently inaugurated the Madurantakam Co-operative Sugar Mills, at Padalam near Madurantakam.

translating, so that documents, say, published in German and translated in England are freely available in Hong Kong. It also circulates a wide range of other information.

Between individual liaison officers there is a full and constant interchange on almost everything from aeronautics to zoology.

Obviously no country can find in one man a geologist, a botanist, a chemist, an engineer, and a meteorologist, but this collection of a dozen liaison officers musters a formidable variety of knowledge in different scientific disciplines.

Each country differs from the others in the stage of its scientific development. Some, where scientific research of the basic type hardly exists yet, will obviously raise questions very different from those from a scientifically developed country.

Weekly Bulletin

Canada's industrial interest, for example, will be in advanced processes, and agriculturally she will have specialist speaking to specialist. In younger countries, planners will be thinking of avenues of development, and questions on science will begin often at the most elementary stages.

On the best level of co-operation, a Canadian representative said, "you can walk into any laboratory in Britain and find that what its opposite number in Canada is doing is already known. And integration of our joint efforts is so close that it is sometimes impossible to say who started a particular piece of work".

By-weekly bulletins on "current interests", liaison officers indicate the subjects they want to know about and their colleagues from other countries rally with information.

India asked for detailed studies on concrete railway sleepers. The United Kingdom and Canada are both able to supply them.

Reciprocally, India provides answers when Canada seeks information on accelerated weathering tests for paints.

Preventing Duplication

On paints too, the British Iron and Steel Federation has a query. It asks Australia about its investigations of painting galvanized-iron farm buildings and its effects on farm products. The Australian liaison officer checks back with his homeland, where building-research men are able to recommend appropriate reports on this subject.

Australia provides the Federation of Rhodesia and Nyasaland with information on the reduction of evaporation from dams and reservoirs, and details of its work on sealing earth dams with sodium tripolyphosphate. Britain and Canada give the Federation the latest details of cobalt and caesium radiotherapy equipment.

Here, then, are some examples of BCSO co-operation.

There is never enough money for research, and few countries can follow up all the lines they want to. It has to be selective. Liaison is one way of preventing wasteful duplication of effort and the pursuit of lines of research already proved fruitless.

It means that the common flow of new knowledge is exploited for the benefit of all.—BIS.

Project to Settle Educated Unemployed

[The experiment in settling the educated unemployed now under way at the Work-cum-Orientation centre at Kalyani in West Bengal draws its inspiration from the fact that similar schemes have worked out with considerable success at Denmark, West Germany and Israel. The results so far achieved by the centre in training the educated unemployed to get them settled in life have been encouraging. This article gives an account of the work of the centre]

An experiment in solving the problem of educated unemployed is under way at the Work-*cum*-Orientation Centre at Kalyani, about 35 miles east of Calcutta in West Bengal. The report of the Study Group on Educated Unemployed set up by the Planning Commission in 1956 had suggested various schemes for relieving unemployment among the educated young persons. The establishment of work and orientation camps all over the country was one of the suggestions.

The Planning Commission observed: "Frustration caused by a series of disappointments in the matter of job finding can have as harmful an effect as permanent unemployment itself. From the day of passing out his examination to the day he becomes age-barred, an educated young man has to knock at dozen doors often for exactly similar posts. The lucky one may get in eventually while for the rest the years of fruitless search would have proved completely wasted years which might have been more profitably spent in other vocations, if some indications were available earlier that there was no hope of their absorption in white collar jobs".

Comprehensive Training

The Work-*cum*-Orientation Centre was set up at Kalyani in 1958 to tackle the problem of educated unemployed in West Bengal. There are about 125,000 educated unemployed persons in the State, according to statistics maintained by Employment Exchanges.

Of this number, about 67 per cent are matriculates, 21 per cent intermediates and 12 per cent graduates. It is estimated that not more than 30 per cent of this group have any technical or professional qualifications and another 20 per cent have no job experience. So about 62,000 educated unemployed persons who are for practical purposes freshers, are yet to be settled in life.

To increase the employability and capacity of educated unemployed persons for self-employment, a six-month training in different trades is imparted to the young men who are admitted to the Centre.

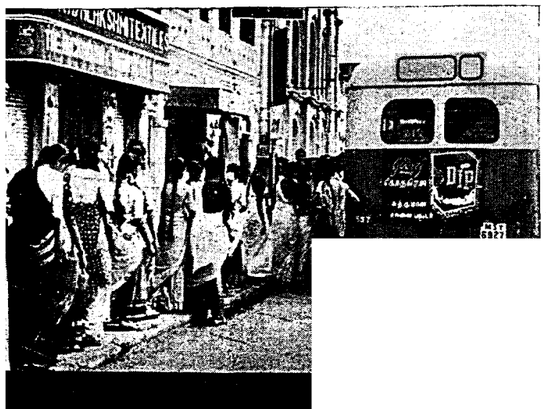
The course includes training in woodcraft, building and mason work including brick manufacture; light mechanics such as repair of cycles, stoves, petromax, sewing machines, repair of household electrical appliances including wiring and battery charging, manufacture of storage batteries, sheet metal and gas welding.

New outlook

It orientates the trainees not to seek "White collar jobs", but to do even manual work, if necessary. With elementary training in business management, co-operative principles, small-scale industries, and agricultural operations, the youngmen who have wasted precious years get back their self-reliance to start life afresh. Training in community living, disciplined corporate life and Shramdan inculcates in them dignity of labour.

One hundred and fifty candidates are admitted in each course. Among the qualifications laid down for admission to the centre are, first, a candidate must be unemployed for at least two years, and secondly, he must be between 15 and 30 years of age. Further, he must have passed the matriculation examination but must not be a graduate. During the period of training each trainee gets a scholarship of

The Student Specials run by the State Transport Department are very popular. Picture shows an orderly group of girl students who had queued up for a bus boarding it.



Since the inception of the Centre, 702 young men have passed out in five batches in different trades.

According to a survey conducted by the Centre, it has been found that 38 per cent of the boys, who passed out of the Centre, are now engaged in co-operatives, 18 per cent in miscellaneous jobs, 12 per cent go for further training in different trades, and 5 per cent serve as apprentices in various fields. Twenty-five per cent are either under-employed or unemployed.

Spirit of Adventure

The formation of seven co-operative societies by the passed-out trainees may not be anything in terms of money or membership. But it symbolises a new spirit of adventure among the young men who have suffered a prolonged period of unemployment and frustrations shattering their morale. With a capital outlay of over Rs. 15,000 and with a membership of about 238, the seven co-operatives deal with manufacture of sheet metal articles, production of batteries, bricks, furniture, repair and installation work, and multi-purpose agricultural activities.

The Government of India bear 60 per cent of the expenditure, while the rest is met by the State Government.

Despite heavy odds, the results of co-operatives have generated unprecedented enthusiasm among the young men. They are not making 'huge profits' but just well enough to carry on.

Promising Future

Professor Peter Kuentsler of the Oxford University, who visited the Centre in the very first year of its inception, was highly impressed with the 'quality of the staff of the Centre'. The Professor attached great importance to the undertaking of an effective "follow-up and after-care service". He also wondered whether any thought had been given to the possibility of starting a small-scale experimental training of this kind for educated girls.

Though the Kalyani Centre started against the background of the closure of two similar centres at Delhi and Kerala, it has held out a big promise for the future. It draws its inspiration from the fact that Denmark, West Germany and Israel have worked out similar schemes with considerable success. And the results so far achieved convince the authorities that the Centre would play a vital role in the training of the educated unemployed to get them settled in life.

Study Abroad

Information about nearly 100,000 opportunities for studying abroad through fellowships, scholarships and educational exchange programmes is given in a recent edition of a manual entitled Study Abroad, brought out by the UNESCO under its International Exchange of Persons Services Programme.

A summary of the findings of the Survey of International Relations and Exchanges in the field of education, science and culture, and the report of the Eighth Survey of Foreign Students Enrolment in institutions of higher education throughout the world is also contained in the manual.

The UNESCO's programme under which these publications have been brought out intends to develop mutual understanding and co-operation between nations through contact and exchange of experience. It also seeks to provide opportunities for acquiring knowledge and skills not available at home.

Aid to Indigent Artistes

The Madras State Sangita Nataka Sangam has decided to give for 1960-61 also grants-in-aid to aged artistes of outstanding merit who have rendered appreciable service in the field of drama, dance or music, but are now in indigent circumstances. Each of them will be paid Rs. 50 per month as subsistence allowance. The implementation of this scheme for grant-in-aid to aged indigent artistes commenced with 12 artistes in the year 1956-57 and their number was successively increased to 15 in the second year, 17 in the third year, 25 in the fourth and fifth years, and 30 in the sixth year.

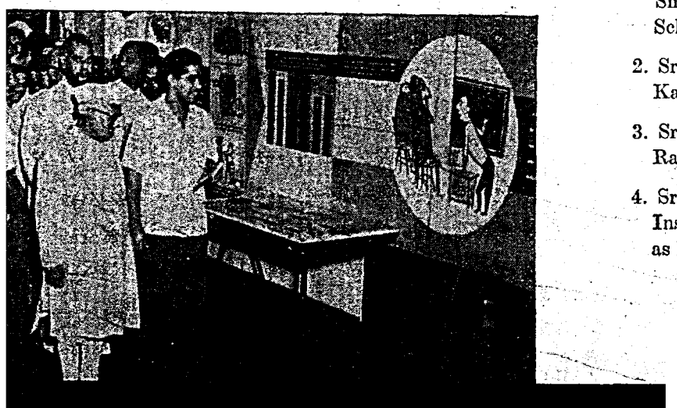
The following 30 artistes (with their age in brackets) have been chosen for grant-in-aid for 1961-62.

Drama Actors.—C. G. Nammalwar Reddy, Madras (78); P. Jayalakshmi, Madurai (52); M. Ramaswamy Mudaliar, Salem (75); A. Sundaram, Ellaipatti, Madurai district (69); T. S. Kutralalingam Pillai, Achampatti, Madurai district (63); Raja Shanmuga Doss, Madurai (70); M. R. Balakrishna Naidu, Nemmeli, Chingleput district (73); Joker Ramudu, Madras (66); I. Krishnamachari, Madras (66); C. K. Gopal Pillai, Madras (62); V. N. Sornathammal, Madurai (56);

Dancers.—Muthurathnambal, Tirunelveli Town (68); N. M. Muthuswamy Nattuvanar, Piranmalai, Ramanathapuram district (65); Andalammal, Thanjavur (66); Cheiyoor Jagadambal, Big Kancheepuram (78).

Musicians.—V. Guruswamy Pillai, Nadaswaram, Pandanallur (86); K. V. Ramaswamy Iyer, Violin, Dharapuram (69); Apathsahaya Sastrigal, Violin, Madras (71); S. Rathnavelu Pillai, Mridangam, Mayuram (66); Sethuraja Pillai, Thavil, Ramanathapuram (67); T. S. Rangammal, Vocal, Mannargudi (68); Tiruvizhimazhalai Gopalu Pillai, Nadaswaram, Tiruvizhimazhalai (84); Chinniah alias Ramaswamy Pillai, Thavil, Tirukkadaiyur (61); C. M. Rajarathna Mudaliar, Violin, Cheyyoor, Chingleput district (64); Tiruvarur Subbier, Violin, Mannargudi (69); S. G. Kasi Iyer, Sangita Vidwan, Madras (62); K. Sethur Sundaresa Battar, Violin, Madurai (68); A. K. Subbier, Jalatharangam, Tiruppur (80); T. V. Parthasarathi Naidu, Kancheera, Madras (65); K. Balakrishna Pillai, Nadaswaram, Kovilpatti (68).

Governor Bishnuram Medhi witnessing a section of the exhibits at the recent exhibition organized by the Madras Productivity Council. The Governor inaugurated the exhibition.



Nattuvangam Scholarships

With a view to relieve to some extent the paucity of qualified Nattuvanars-*cum*-Dancé Teachers for providing sound training in Bharata Natya, for which there is growing demand, the Madras State Sangitha Nataka Sangam has instituted a Scheme of Scholarships for training in Nattuvangam. According to the scheme, four candidates with sound knowledge of Classical Karnataka Music with sure '*Swaragnana*' and '*Layagnana*' have been selected after necessary tests, for undergoing training in Nattuvangam for four years under Approved Dance Institutions and Instructors. The training has to be given according to a comprehensive syllabus in the theory and practice of Bharata Natya. A stipend of Rs. 75 as subsistence allowance and Rs. 50 as tuition fees, aggregating to Rs. 125 per mensem, will be paid to each scholar for four years. After training, the candidates are required to serve as Nattuvanars-*cum*-Dance Teachers for a period of at least five years.

The following are the four chosen candidates and their respective Training Institutions and Instructors :—

1. Sri Kalyanasundaram Ramiah (of Tiruppampuram) Smt. Balasaraswathi's Classical Bharata Natya School.
2. Sri T. R. Devanathan (of Tirukkadaiyur); Kalakshetra.
3. Sri C. S. Swaminathan (of Madras): Sri V. B. Ramiah Pillai.
4. Sri S. Ramaswami (of Tiruvizhimazhalai): Indian Institute of Fine Arts, with Sri Chockalingam Pillai as Instructor.

Fishermen Training Schools

V. D. SPURGEON, *Deputy Director of Fisheries.*

[*Instruction is imparted to fishermen in the use of mechanised boats and nylon nets at the Fishermen Training Schools in the State at Nagapattinam and Tuticorin. This scheme to train fishermen in modern fishing techniques is steadily gaining ground for the fishermen who use these techniques see that their use helps them catch more fish and earn more money. This article gives an account of the work being done to educate the fishermen in improved techniques at the Nagapattinam and Tuticorin training centres*]

Our Marine fishermen have been using for over centuries only primitive catamarams and age-old nets. The Government have recently motorised small boats and given them to fishermen on subsidised basis. To increase the efficiency of fishing, modern nylon nets have also been supplied to them. The fishermen had never heard about motorised boats and nylon nets before and were not familiar with the methods of using them.

Two Fishermen Training Schools for training 100 fishermen (during the Second Five-Year Plan) to handle mechanised boats and nylon nets were therefore established in the Madras State, one at Madras and the other at Tuticorin and both the centres commenced functioning from 1st October 1956. The Madras Training Centre was shifted to Nagapattinam in 1957 and has since then continued at Nagapattinam.

Teaching Staff

The Tuticorin Training Centre serves the southern coastal districts of Kanyakumari, Tirunelveli and Ramanathapuram while the Training Centre at Nagapattinam serves the northern districts of South Arcot, Chingleput, Thanjavur and Madras. The staff at each Training Centre consists of one Assistant Director of Fisheries, one Inspector of Fisheries and one Junior Engineer. While the Assistant Director of Fisheries and Inspector of Fisheries teach the students the management of power boats, modern methods of fishing and elementary navigation, the Junior Engineer teaches the students the fundamentals of marine engines and their machanism.

Syllabus for Training

The Training is spread over a period of six months and during each training a batch of 10 students are trained. Young enthusiastic fishermen of the maritime districts of the State who have studied upto III Form are admitted for this course. A large number of fishermen apply for admission to this training course.

The medium of teaching in the Training Centre is Tamil. Originally the training was intended only to teach the fishermen the use of new types of mechanised boat and operation of engines. Later however the syllabus was slighlty enlarged and the trainees were also taught the modern methods of fishing with improved gears like nylon nets, etc. The fundamentals of navigational traffic are also taught to them. They are taken often on board mechanised boats to give them plenty of opportunities to handle the boat and gear by themselves. They are given a scientific understanding of the commercially important fisheries of the State and factors responsible for their occurrence and depletion.

The days when fishermen used to be very conservative and refused to take to modern methods of fishing are over. They have now shed all prejudices and superstitions and are ready to listen, consider, understand and take to new methods of fishing, if they are convinced of the advantages. This is a good sign and a sign of progress.

Encouraging Results

So far 100 fishermen candidates from Madras State have been trained and their skill is being fully utilised. Some of them work as crew in pablo boats (mechanised boats) given to Fishermen Co-operative Societies. Some of them have organized themselves into groups of five, each group operating a pablo boat. Such groups are given nets and boats on the recommendations of the two Training Schools. The boats and nets remain under the charge of the Training Schools until the cost of the boats and nets are recovered from the group in easy instalments.

The scheme was started with the intention of bettering the living conditions of fishermen by helping them to catch more and earn more. The results have been very encouraging and in the years to come one may see fleets of mechanised fishing boats moving about our coast, busy fishing.

The Writer as a Successful Co-operator

[*Madras State leads the rest of India in the field of Co-operative endeavour. The Co-operative movement has registered spectacular progress here. Since Co-operation has been rightly understood in the State as the sole principle of intelligent living, the success of any Co-operative institution in the State or elsewhere in India has always been interpreted as the vindication of a vital principle. In this article is traced the phenomenal progress recorded by an unusual Co-operative Society outside the State, a Co-operative Society for literary workers, a set of people conventionally regarded as much too individualistic to make good Co-operators.*]

The intellectual and the creative artist are supposed to be intractably individualistic, and it is often unconsciously assumed that the co-operative organization is not likely to be effective in their case, however useful it may be in the case of the farmer or the worker. The history of the Sahitya Pravarthaka (Literary Workers') Co-operative Society of Kottayam, Kerala, however, is a complete and spectacular refutation of this assumption.

The Society had a very humble beginning. In 1945, twelve writers got together, raised a modest working capital of Rs. 120 by voluntary contribution and set up a co-operative society with the objective of eliminating difficulties experienced by writers in getting their works published and guaranteeing reasonable royalties. To-day the co-operative has grown up to be the most important factor for stabilisation of the literary career in Malayalam, the language of Kerala, as a genuine profession.

Phenomenal growth

The growth of the Society over the years has been phenomenal. As against a membership of 12 and a working capital of Rs. 120 in 1945, today it has a membership of 393, and it is operating a working capital of Rs. 4·5 lakhs. Up to June 1 this year, it had published 1,200 books. The average annual production figure over the past several years has been 140 titles or nearly three books every week. Annual volume of sales has increased from Rs. 3·6 lakhs in 1955–56 to Rs. 6·8 lakhs in 1959–60. The shares are moderately priced, Rs. 10 per share. The largest block allowed is Rs. 5,000, and there are only 14 members who have taken the maximum. In order to make the Society as broad-based as possible, the minimum for membership has been brought down to as low as Rs. 100 or ten shares. For the last several years the Society has been able to declare a dividend of 7½ per cent annually on the shares. The annual figure for the amount distributed as royalty to authors is over Rs. 1 lakh.

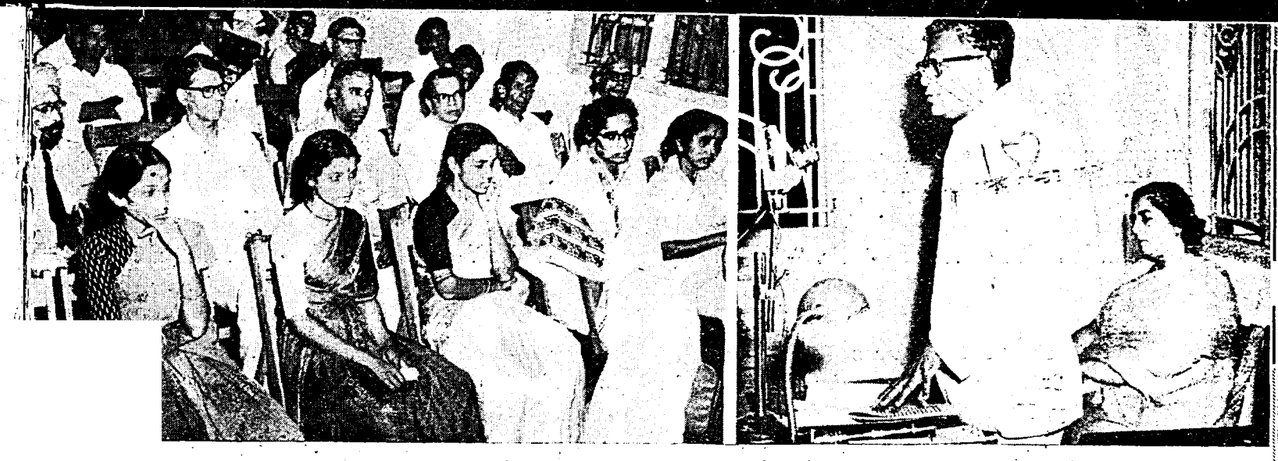
A Global Record

The Society has, in fact, set up a global record by giving 30 per cent royalty to authors. Such a high figure is earned by some writers in foreign countries also, but nowhere else does it appear to be the standard royalty given to every author whose book is accepted for publication. The high royalty figure has been maintained mainly because the Society does its own marketing and has been able to eliminate the middleman. This is a genuine and important function of a co-operative.

The Society has also introduced novel experiments in marketing promotion. For instance, in October-November 1960, it organized a Book Festival, offering substantial price reductions besides prizes on a lottery basis. Over 50,000 books were sold during this Book Month and the public got, besides the bonus, prizes amounting to a total of Rs. 2,500.

Novel experiment

The Society has also introduced an interesting experiment like a Book Lottery, in which the subscriber pays Rs. 5 every month over a period and if he is lucky, gets Rs. 100 worth of books for a single payment of Rs. 5. Even if he is not lucky, he will ultimately get his book much below the market rates. The fact that about 1,200 people are participating in this experiment shows that it will be possible to establish a home library in every household. Ultimately, however, a steady tempo of



ies Minister Venkataraman addressed a meeting recently convened at the Children's Theatre for the purpose of forming an United Nations Association.

on of sales can be managed only by the establish- retail bookshops in every small town and village.

ing Role

ding to a recent survey made by the Co-operative, ali spends only 10 naye Paise on the average during le year on the purchase of books. As it is certain e average amount spent on films or on cigarettes 1 higher, there remains a substantial residuary ing power which can be tapped if the adequate ics can be devised. The Society has drawn up Year Plan for the establishment of a very wide marketing net-work, the initial phase being the setting up of 100 book shops all over Kerala.

An interesting development which indicates an expanding role for the Society in contributing to the social security of its members followed the death of C. J. Thomas, a well-known critic and dramatist who has translated Sophoclos and Aristophanes into Malayalam, on July 14, last year. The Society took the initiative in launching a drive for a collection for the bereaved family. The target figure was Rs. 10,000. It was able to raise over Rs. 11,000 within one month, by August 14. The Society freely allowed its members to draw advance royalties to mak- this donation.

Training Educational Administrators

A training centre is being set up shortly in Delhi in collaboration with UNESCO to help in meeting the increasing requirements of educational administrators, both for the Central and State schemes in the Third Plan. This was announced by Dr. Shrimali, Union Minister of Education, while opening a conference of State Education Secretaries and Directors of Education in New Delhi. The conference has been called to consider measures for effective implementation of education schemes in the Plan. Dr. Shrimali said a high degree of effciency and co-ordination would be required to handle the increasing size and complexity of school organization. Also if education had to play its role in strengthening national unity, greater co-operation between the Centre and the States would be necessary.

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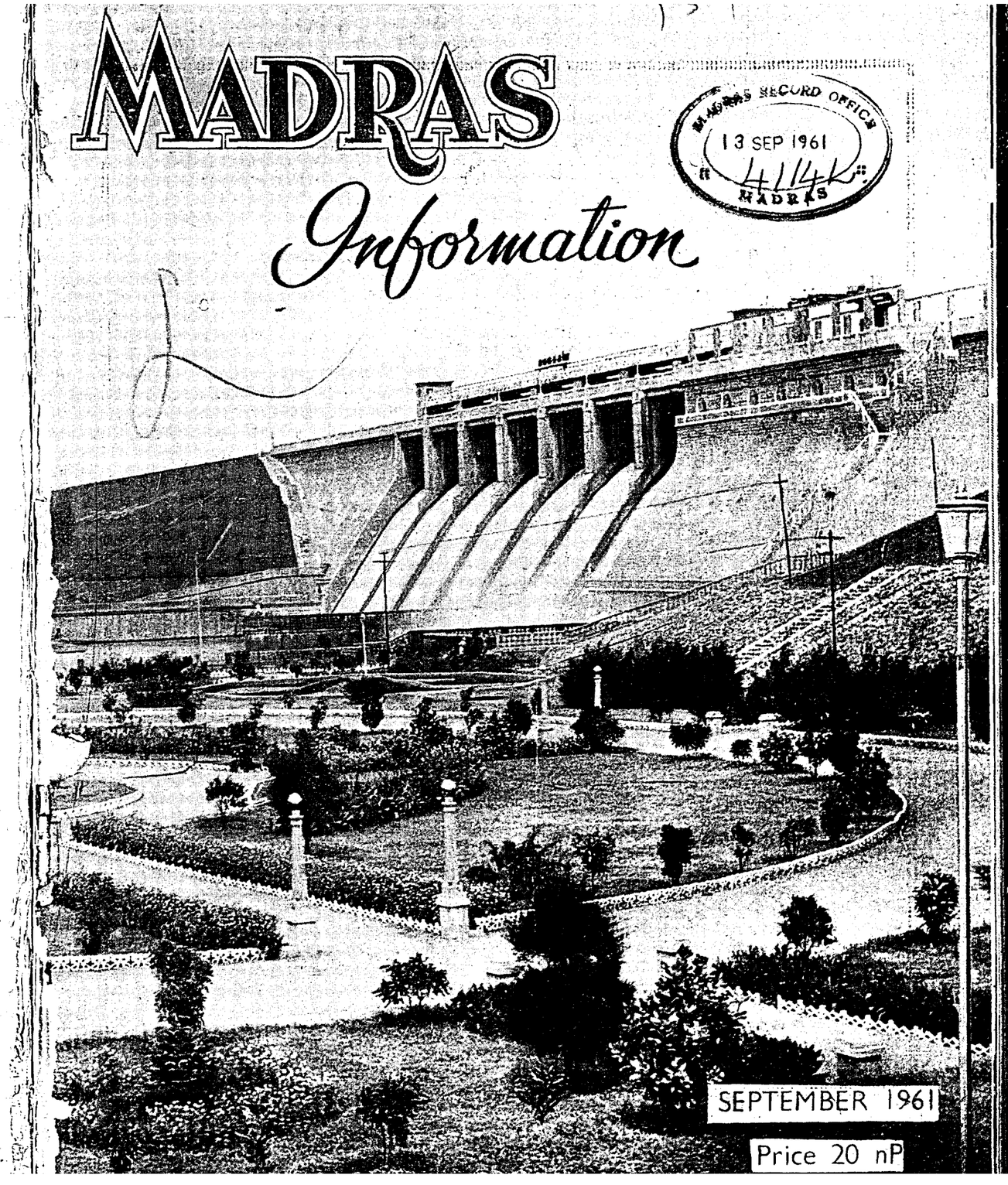
THE DIRECTOR OF INFORMATION AND PUBLICITY

Fort St. George, MADRAS-9.

Awards for Community Service

The Union Ministry of Community Development and Co-operation, it is learnt, have suggested to State Governments that awards in the shape of "Sanads", or certificates of appreciation, combined, if necessary, with an amount in cash, may be instituted at the State level for the recognition of meritorius work in the fields of community service. The fields include the promotion of panchayats and extension work in agriculture, animal husbandry and rural industries, etc.

The awards, it has been suggested, may be given on certain national days, such as Independence and Republic Day. Some State Governments, it is pointed out, have already instituted awards for recognition of meritorious work at State level. Similar system could be introduced in other States also.



Plan Results Speak . . . .

The Village and the Farm are the country's life-lines. It is here that the two Five-Year Plans have produced the most striking results in Madras State.

More than 10,500 villages out of 18,000 villages have been electrified, over a lakh power pumpsets are used in farm operations, every village with over 300 population has a school, many good roads provide links with the outside world. Advice under the Community Development Programme has been availed of in cultivation methods with excellent results.

New industries and factories that have sprung up in neighbouring townships have provided gainful employment to village surplus population.

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This month's cover

A lovely view of the Vaigai Dam and its extensive parks is caught in the cover of this number which takes note of the fact that Tourism in the State is growing and presents a special article on the Vaigai Dan as a Tourist Centre.

Paradise for Tourists....

There are Excellent Reasons why the Traveller down South finds Madras State a veritable Paradise for Tourists.

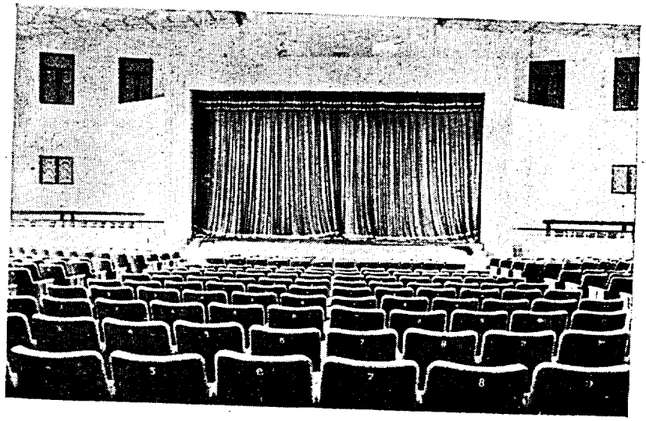
Towering Temples of surpassing beauty and ageless grandeur provide him endless aesthetic thrills here.

Ootacamund, the Queen of Hill stations and Kodaikanal, the Jewel of the South assure alluring prospects of fine climate and visual delight. And the invigorating Courtallam Falls offer incomparable pleasures for Holiday-making.

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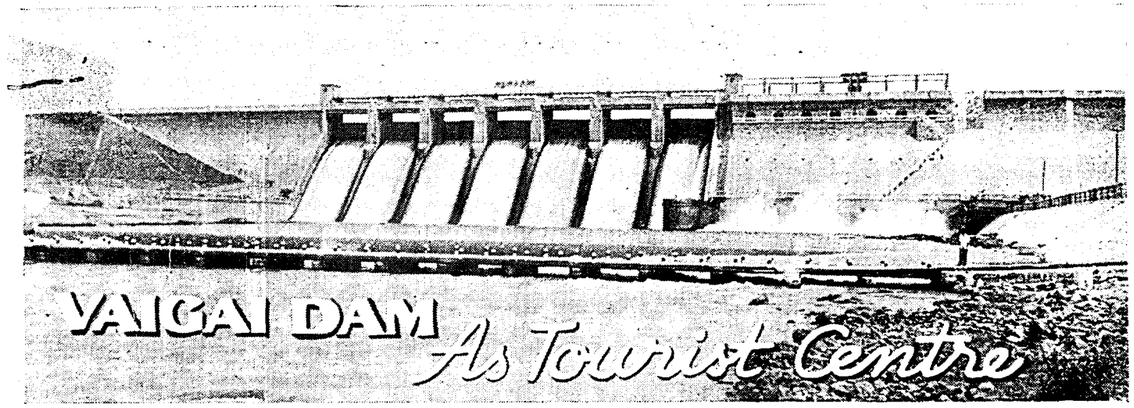
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VAIGAI DAM *As Tourist Centre*

[Following up the suggestion of Chief Minister Kamaraj, who, while inaugurating the Vaigai Dam in January 1959, pointed out the possibilities of developing a first rate tourist centre there, Government have taken necessary steps and the area is today a very popular tourist and picnic spot. With growing pressure of tourist traffic to the place, amenities to match up to needs have been provided. There are separate rest houses for adult and children's parties. The Chief Minister during his visit there recently in May this year inaugurated a Cafeteria, on Information Centre, the children's train and a model of the Periyar-Vaigai System. This article gives an account of the tourist centre at Vaigai Dam and traces its development.]

The Vaigai dam, constructed across the river Vaigai in 1959, is situated in Periyakulam taluk of Madurai district in Madras State. It is 40 miles from Madurai, 28 miles from Kodai road railway station, 54 miles from the Hill Station Kodaikanal, and 48 miles from Thekkedy, the famous Periyar Game Sanctuary. It is connected by a network of roads from Periyakulam, Theni, Andipatti and neighbouring towns. The nearest railway station is at Andipatti at a distance of five miles.

As early as in 1893, the west flowing waters of Periyar river, otherwise running waste into the Arabian sea in erstwhile Travancore State, were diverted by the construction of a masonry dam at an elevation of 3,000 ft. above mean sea level through a mile long tunnel on to the Cumbum valley to irrigate a lakh and thirty thousand acres of land in Madurai and Ramanathapuram districts. The diversion of water from the western slope into the Cumbum valley afforded great potentialities for power generation.

The suggestion

The ever increasing power demand required the immediate construction and installation of a Hydro-Electric Project to utilize the Periyar waters under which water could be drawn from the Periyar lake throughout the year for power generation instead of only nine months for irrigation purposes, as was done hitherto. A subsidiary reservoir was found necessary to be constructed lower down to store and preserve the summer draw of the Hydro-Electric Project from being wasted into the Bay of Bengal. This led to the construction of the Vaigai Reservoir which was commenced in 1954 and inaugurated in January 1959.

During the inauguration of the Vaigai Reservoir Project on 21st January 1959, the Chief Minister, Sri K. Kamaraj, suggested that an extensive park on the rear of the Dam could be formed and developed into an attractive beauty spot for visitors and tourists. Accordingly parks and gardens with enchanting cascades and fountains

Chief Minister Kamaraj presided over the meeting of the State Informal Consultative Committee held in the Cabinet Room of the Secretariat recently. Sri. S. K. Dey, Union Minister for Community Development also participated.



beautifully illuminated were formed. The parks are laid out on an extensive scale over 25 acres of land with life-size statues, flower-beds, children's corner, star canopies, etc., high-lighting it. Thousands visit the place on Saturdays and Sundays when special illumination of the parks and garden, the fountains and cascades is arranged.

Ideal Picnic Spot

With the growth of the Vaigai dam as a tourist centre and an ideal picnic spot, more and more facilities were needed. Three first class rest-houses, five second class rest-houses with two suites in each and a children's rest house to accommodate about 100 children mainly for visiting excursion parties, have been constructed in addition to the project house. With the old loco and truck lines available, a children's train has been laid out for the amusement of children who come in thousands every week-end. As a number of students from schools and technical colleges visit the project, a model of the Periyar-Vaigai river system, depicting the Western Ghats where the Periyar river originates, the Periyar and Vaigai Canals systems, etc., has been prepared and is on view. It has been found very instructive and interesting. The various technical details of construction of the project are exhibited in a chart room next to the model.

The rapid increase in the number of visitors has necessitated provision of more amenities. A motor launch has been provided for cruising in the lake. A good catering centre to provide food for the visitors and an information centre to give necessary information and particulars have been provided. A good stand for the visitors to wait for the bus was found necessary. This has also been provided. The completion of these amenities marks a significant step in the transformation of Vaigai dam as a tourist centre.

Small Industries Service Institute

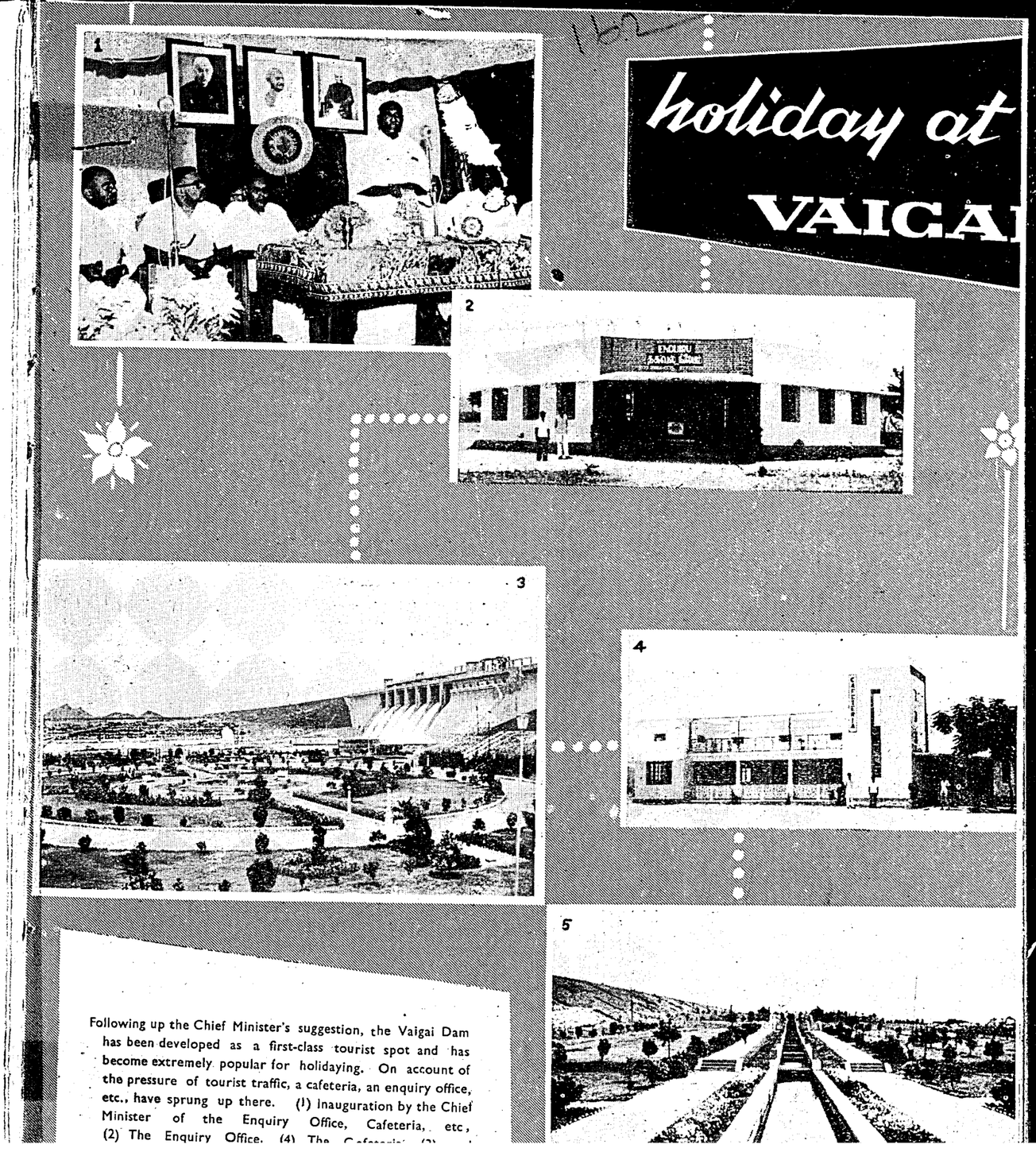
The Small Industries Service Institute in Madras gave technical assistance in June last, among others, to a glass factory and an electro-plating unit in the City, roofing tiles and bricks manufacturing unit in Manamadurai and a bicycle components manufacturing unit in Kovur. The institute also designed and fabricated at the Industrial Estate, Guindy, a die for paraffin oil (kerosene) stove for a mofussil company. A pair of flexible moccasins with shrunken upper leather was made specially as an experiment at the Central Footwear Training Centre, Guindy, and was sold to the Union Commerce Minister.

The glass factory in the City which could not run successfully its oil-fired day tank furnace was helped by the institute in solving their problem.

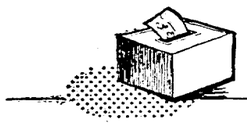
The institute suggested to the roofing tiles and bricks manufacturing unit at Manamadurai the introduction of the belt conveyed and roller feed system which will mechanize the unit and reduce the cost of labour besides increasing the quantum of production.

The Kovur unit, manufacturing bicycle components, baby tricycles, perambulators, etc., was advised by the institute in setting up a debrassing unit.

An electro-plating unit in the City, which is doing job of chromium plating work for bicycle and automobile components, experienced difficulty in getting the correct thickness in minimum time with indigenously available readymixed salts. The institute provided technical assistance in obtaining the correct thickness in the nickel plating salt bath.



Following up the Chief Minister's suggestion, the Vaigai Dam has been developed as a first-class tourist spot and has become extremely popular for holidaying. On account of the pressure of tourist traffic, a cafeteria, an enquiry office, etc., have sprung up there. (1) Inauguration by the Chief Minister of the Enquiry Office, Cafeteria, etc, (2) The Enquiry Office. (4) The



Don't Miss YOUR VOTE

[Exercise of the franchise is the hallmark of intelligent citizenship under democracy. Nobody should miss the vote to which he is entitled. Copies of the draft electoral rolls have been made available for inspection and these draft rolls with the final list of amendments will be the final rolls to be used for the 1962 General Elections. The detailed instructions and appeal recently broadcast by the Chief Electoral Officer from All-India Radio, Madras, on this subject, form the text of this article].

S. P. SRINIVASAN, *Chief Electoral Officer.*

I have talked to you once before in March this year on the programme of annual revision of electoral rolls for 1961. For each Assembly constituency there is a person responsible for the preparation of the rolls called Electoral Registration Officer. These are usually the Revenue Divisional Officers in the mufassal and the concerned Municipal Commissioners where the entire constituency lies within the Municipality. In Madras, the Electoral Registration Officer is the Revenue Officer of the Corporation of Madras. Draft electoral rolls have been prepared by these officers in all constituencies in the State and are being published now.

Copies of the draft rolls will be made freely available for inspection in the offices of Sub-Registrars, important schools, Municipal and Panchayat Offices, etc. If a person finds that his name is not included in the draft electoral rolls, he can file a claim for including his name in the rolls. A voter can also prefer an objection to the inclusion of the name of any other person in the roll or in respect of entries in the draft rolls relating to his own name. The claims and objections can be preferred to the Electoral Registration Officer, concerned Tahsildars, Firka Revenue Inspectors, Executive Officers of Cantonments, township and Town panchayats and Village Officers. Claims and tions should reach them before the last date prescribed, 30 days from the date of publication of the rolls in ct of each Assembly constituency.

ns and Objections

ims and objections should be preferred in the pres- d forms which can be got from the above officials on ent of cost. Manuscript, typewritten or cyclostyled s also will be accepted. A person desiring correction y entry in the roll relating to himself should apply e form prescribed therefor. However, in cases of obvious printing and clerical mistakes noticed in the rolls it is sufficient if they are brought to the notice of the Electoral Registration Officer by a letter.

A claim should be signed by the claimant. It should also be countersigned by a voter whose name has been included in *that* particular part of the roll in which the claimant desires his name to be included. Similarly, every objection to the inclusion of a name should be signed by the objector and it should also be countersigned by another person whose name is already included in that part of the roll in which the name objected to appears. An objection to a particular or particulars in an entry can be preferred only by the person to whom that entry relates and in such cases no countersignature of another voter is necessary. The claimant or the objector should himself fill in all the entries in the relevant form. In case an objector wants to prefer an objection in respect of more than one person he should file a separate objection in respect of each such person.

Transfers

If a person desires to have his name transferred from the electoral roll of one constituency to another constituency or from one part of the electoral roll to another part of the roll, it is enough if he furnishes the particulars in Form 6 and gives correctly the address of his previous enrolment in that Form.

All claims and objections received by the various authorities will be enquired into and disposed of at the public sittings held by the Electoral Registration Officer in convenient centres in the constituency. A notice regarding the time, date and place fixed for the public sittings will be served upon each claimant or objector. The enquiry will be only summary. The claimant, the objector and the person objected to is entitled to appear and be heard during the enquiry. The claimant or objector should attend the hearing and be ready with his evidence.

Final Decision

In disposing of the claims and objections, the Electoral Registration Officer may informally associate with the enquiry representatives of recognized political parties who are familiar with the inhabitants of each area. The final decision in respect of each claim or objection will be the sole responsibility of the Electoral Registration Officer and the representatives of the political parties will have no voice in the matter except that their presense will discourage false claims and objections and they would be free to bring to the notice of the Electoral Registration Officer by way of giving formal evidence, if necessary, any facts which would be useful in coming to a correct decision.

With reference to the decisions made on the claims and objections, the Electoral Registration Officer will prepare the final lists of amendments for the constituency. The draft rolls together with the final list of amendments will be the final roll for the constituency and this will be used for the ensuing General Elections in 1962.

Appeals

An appeal will lie from any decision of the registration officer on the claims and objections, to the appellate officer within a period of fifteen days from the date of announcement of the decision. The appellate officers are the Commissioner, Corporation of Madras, in the Madras City and the Collectors elsewhere. The appeal should be in the form of a memorandum signed by the appellant and should be presented in person or sent by registered post so as to reach the appellate officer within that period. The decision of the appellate officer is final.

Co-operation necessary

The Election authorities are taking all possible steps to make the electoral rolls as up-to-date and correct as possible. But, until and unless the public, the political parties and other social organisations and, above all, the eligible voters themselves, take genuine interest in putting claims and objections within the prescribed period, it would almost be an impossible task to bring out an accurate and perfect electoral roll. I once again emphasise that the rolls now prepared will be used for the ensuing General Elections and unless the qualified persons take steps to enrol themselves now, they may not be able to exercise their franchise during the General Elections.

It is imperative that all eligible persons enrol themselves now as voters. I therefore appeal to all political parties, social organisations and all members of the public to take a genuine interest in the work to see that the names of all eligible persons are registered as voters and to extend their co-operation to the Election authorities in the matter in the fullest measure.

Training in Food Technology

The Ministry of Scientific Research and Cultural Affairs have, under the Practical Training Stipend Scheme 1961–62, offered facilities for candidates for practical training in food technology.

Six candidates holding diplomas in Chemical Technology will be selected for this training which will be imparted at the Union Government-owned quick freezing and cold storage plant at Bombay. The training will last for about a year and the selected trainees will be paid a stipend of Rs. 100 per month.

The course will include studies in the maintenance and operation of refrigeration plants and techniques of ice manufacture and storage and freezing and storage of fish.

Details of the scheme as well as application forms can be had from the Education Officer (Technical), Western Regional Office, Government of India, Construction House, Ballard Estate, Bombay-1.

Industrial Relations in 1960—A Report

[The maintenance of industrial peace continues to be the cardinal aim of Government's labour policy and the results of this policy in the sphere of industrial relations have been satisfactory. This article gives the salient points relating to the working of the Industrial Disputes Act for the year 1960.]

The main aim underlining the Labour Policy of the Government continued to be the maintenance of Industrial peace. Recognising the importance of the development of Co-operative arrangements evolved by the parties themselves, emphasis has been laid on settlement of disputes by voluntary direct negotiations at bipartite or tripartite level and Government intervened only when other methods failed. The voluntary acceptance of the Code of discipline was another significant development which indicated that the employers and workers have come to realise that this was an important factor in the promotion of industrial peace and national development.

The achievement in the sphere of industrial relations during the year was fairly satisfactory. This is reflected in the amicable settlements reached in a number of disputes either as a result of direct negotiation between the parties or on the intervention of the conciliation officers or through the good offices of the Government.

Disputes Settled

The statement below indicates the number of disputes raised and settled by mediation, conciliation or adjudication in the year under review as compared to the previous years.

		Year 1958.	*Year* 1959.	*Year* 1960.
1	Number of complaints received.	10,637	9,781	9,048
2	Number of disputes settled by mediation.	8,643	8,177	7,643
3	Number of disputes settled by conciliation.	718	824	864
4	Number of disputes referred for adjudication.	367	308	250

(Remaining cases were pending enquiry at the end of the year.)

Out of 250 disputes referred for adjudication, 144 related to non-employment of workers.

The following were the important disputes settled during the year :—

1. T.I. Cycles (India), Private, Limited, Madras. Bonus for 1959–60, 1964–65, etc.

2. Implementation of the recommendations of the Central Wage Board for the Cotton Textile Industry by the textile mills in the State.

3. Beedi Industry—Payment of rates of wages.

4. Plantation Industry—Bonus for 1959.

There were 318 strikes and 13 lock-outs during this year compared to 202 strikes and 10 lock-outs during the previous year. These stoppages of work involved 220,097 workers and resulted in a loss of 765,990 man-days. compared to 111,072 workers and 1,102,472 man-days in the previous year.

Prosecutions

During the year the Government sanctioned prosecutions against six managements: in 2 cases for non-implementation of awards. in 3 cases for non-implementation of settlements. and in one case for contravention of section 28 of the Industrial Disputes Act.

Sri Manickavelu, Minister for Revenue and Health, inaugurating the All-India State Malarilogists' Conference at Rajaji Hall.



In 1960, recoveries under section 33-C (1) of the Indus-ial Disputes Act were ordered in respect of 56 manage-ents as against 15 managements last year.

Awards relating to 356 cases were published by the overnment in 1960 as aginst 400 cases last year. Of the 6 cases, 42 were decisions of Industrial Tribunals and abour Courts, under section 33-A of the Industrial isputes Act.

The following industries continued as public utility rvices for purposes of the Industrial Disputes Act :—

(1) All Labour in minor ports.
(2) Sugar.
(3) Cotton textiles.
(4) Motor transport services.
(5) Cement.
(6) Air Transport Services.

Works Committees

Formation of Works Committees is a statutory require-ent enjoined under section 3 of Industrial Disputes Act on all employers employing 100 or more workmen. The tal number of Works Committees functioning in the ate at the beginning of the year was 278. During the ar 14 Committees were newly constituted and 2 establish-ents were exempted from the reconstitution of the Works mmittees. The number of Committees functioning the end of the year was 290.

The Government continued to give wide publicity to the de of Discipline. The Officers of the Labour Department ve been instructed to persuade the employers and ployees to ratify the Code. The Evaluation and plementation Committee which has been entrusted th the administration of the Code considered the question of extension of the Code with a view to securing furt ratification by employers' and workers' organisations affiliated to central organisations and the procedure dealing with the complaints regarding breaches of the C Forty-one employers and 61 trade unions not affiliate central organisations have signified their acceptance of Code in writing. During the year, 54 cases of breac of the Code were investigated as against 71 cases last y

Evaluation and Implementation

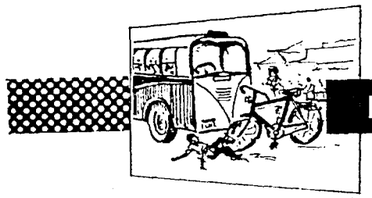
The Tripartite State Evaluation and Implementat Committee was constituted by the Government to l after implementation of wards, settlements, administrat of the Code, etc. The Commissioner of Labour is Chairman of the Committee. The Government have a appointed a senior full-time officer of the rank of Assist Commissioner of Labour to be Evaluation and Imp mentation Officer to deal with the implementation a evaluation work.

The Committee met twice during the year under revi and considered important subjects like Code of Discipli effective implementation of the Code of Conduct and Model Grievance Procedure. In addition, a special meet of the Committee was convened in July 1960 to discuss question of implementation of the recommendations of Textile Wage Board.

A Sub-Committee was formed with the Assist Commissioner of Labour as the Chairman and with representative each of the employers and workers to expl possibilities of out-of-court settlements on the appe made to the High Court and the Supreme Court agai the awards of Labour Courts and Industrial Tribun With the consent of the members the Chairman of Sub-Committee has so far settled 3 cases out of court.

Physical Efficiency Drive

Under the revised scheme of the National Physical Efficiency Drive 1,000 testing centres are to be established throughout the country in 1961–62. The number of testing centres is also to be increased by 500 every year so as to bring the total to 3,000 at the end of the Third Plan. The Centres will be established to assess and improve certain fundamental physical qualities of people such as speed, strength, agility, endurance and body balance, under the Physical Efficiency Drive. The Drive is aimed at popularising the cult of physical fitness and arousing the enthusiasm of the people for attaining higher standards of physical efficiency.



PREVENTING ROAD ACCIDENTS

K. RADHAKRISHNAN, *Deputy Commissioner of Police.*

[Speaking at the Madras Medical College on 'Accidents and their Prevention', the subject chosen for the observance of World Health Day in July this year, the Deputy Commissioner of Police, Traffic and Licensing, dealt at length on accidents arising from risks on roads. After examining the main factors that contribute to road accidents, he made a plea for proper traffic education through right propaganda. This article gives the substance of the speech.]

The World Health Organisation prescribed the fascinating theme, 'Accidents and their Prevention' for the World Health Day observed in July this year. The topic is non-technical and gives scope for thoughtful study for layman and specialist alike. Previous themes like 'Ten Years of Health Progress', 'Malaria Eradication', 'Mental Illness', etc., though concerned with public health, provided scope for discussion only for specialists in the field. But the theme chosen this year is of wider significance and has concerned itself with the preservation of human life itself which transcends all health measures.

It is said that accidents take a heavy toll of human lives. Millions young and old, are victims of this fateful form of death all over the world. Millions are maimed and crippled. The mortality figures are so staggering that they surpass the damage to human life that occurred in any war. How to control this mortality rate? The problem is immense and has to be tackled in a variety of ways to achieve a measure of success.

Accident defined

What is an 'accident'? The term cannot be explained by means of a crisp definition. An advisory group convened by the World Health Organisation considered it to be "an unpremeditated event resulting in a recognisable injury". The American National Safety Council expanded this definition: "an accident is that occurrence in a sequence of events which usually produces unintended injury, death or property damage". The words 'unpremeditated' and 'unintended' imply the human factor. This definitely rules out accidents like earthquakes, floods, volcanoes and pestilence. Are these simply acts of God unpremeditated and unintended? Meditation and intention denote a mental condition. Therefore where no human agency is involved in the causation of accidents, it is not preventible.

A lightning hitting a man to death is just his ill-luck. It is of course an accident. He is a victim of circumstances over which he has no control. There are a variety of such types of accidents over which no control can be exercised. Therefore one has to turn to other types of accidents over which some measure of control can be exercised. It is not impracticable to list out the forms of accidents which are "recognised occurrences in which possible injury, death or property damage can be prevented by a policy of premeditated safety measures". It is herein that a lot can be contributed to the safety and well-being of society.

Risks on road

The scientific achievements of this age are stupendous. The results of these achievements have no doubt unleashed new forms of hazards to human life. At the same time scientific advances in the medical field have given today life-saving drugs which were unkown before. The diseases which were considered fatal and were taking a heavy toll of life are controlled and cured by miraculous drugs today. Whether the death rate due to increased accident risk and death control due to marvellous drugs are properly balanced or not, is a debatable issue.

In any case, with the introduction of new types of hazards to human life, fresh techniques and devices are called for to counteract the same. The human being today, is faced with some form of risk to life whether at home or outside. This article confines itself to the risk of accidents on roads and their prevention.

ot a day passes without the appearance of a news item tragic road accident in the newspapers. Of the seven ipal types of accidents, viz., "Falls, Drowning, sport other than motor vehicle, Fire or Explosion, oning, Fire Arms", Motor Vehicles form 36 per cent. needless to furnish huge statistical figures to emphasise fact that millions of lives are lost in road accidents y year all over the world. Nobody ever imagined that introduction of the automobile would turn the roads into graveyards for so many. The subject of road accidents is posing a knotty problem to everyone. It is engaging the attention of every road user. The more active in the field are the policeman, the engineer, the doctor, the psychologist, the insurance agent, the legislator and safety propagandist. Increased attention is being paid and improved techniques are thought of everyday as to how best to solve this problem.

How do road accidents occur? Could they not be prevented by strict enforcement of traffic laws? Non-observance of traffic laws is not the only factor in the occurrence of traffic accidents. There are a variety of factors and baffling circumstances which come into play in the causation of accidents.

Main factor

The three main factors are the road, the vehicle and the human being. The bad layout of the road and the defective mechanism of the vehicle can be rectified by engineering devices. But the part played by the human being in the sequence of events leading to an accident is a highly complicated one. It is an uphill task to bring him round to a disciplined behaviour on road. The physiological and psychological make-up of the human being is so varied that it is impossible to bring about a satisfactory uniformity by a set policy. The reactions and temperaments vary from individual to individual. The sex, the age, the nationality, the social status, etc., are also factors to reckon with in this connection. Under a given situation, reactions differ from person to person. If these varying factors are taken into account for a mathematical permutation and combination, a fabulous figure will be arrived at, which will upset all safety calculations and requirements.

This explains why accidents cannot be eradicated altogether by a policy of legislation alone. There are enough legal provisions to deal with the road offender. Further stringent imposition of law against the offender will not offer any satisfactory solution to the accident problem. The problem rests mostly on the behaviour pattern of the road user. Accidents do not occur merely on account of the lack of knowledge of traffic law or want of proper driving technique on the part of the man at the wheel. They are often due to failure to exercise commonsense, sound judgment, care and caution.

A dilemma

Take for instance the situation on the road, wherein a mother and child are walking along the centre of the road. A vehicle approaches from behind. On hearing the sound of the horn, the mother runs to one side of the road and the child to the other side. Is it safe to drive through the passage created by the two panicky people? It is quite likely that the mother may run towards the child for securing its safety or the child may retrace its steps towards the mother for succour. The driver exercising commonsense will stop the vehicle and proceed only after the two are united. A rash driver kills either the child or the mother or both while manoeuvring his vehicle. It may be argued in law that it is not the rashness on the part of the driver alone that is responsible for the mishap but negligence on the part of the victims is also a contributory factor. The driver may be proved legally not at fault and he may go free.

It is impossible to draw a sharp line between the rashness of the vehicle user and the contributory negligence of the other road user. In a majority of cases it is impossible to prove who is wholly at fault. The legal issues connected with an accident are complicated and open to debate. The determination of legal responsibilities is not the crux of the problem. It is not going to contribute to the reduction of accidents at any rate. Enforcement of law is an administrative measure and it is one of the many ways thereby road discipline can be imposed.

Crying need

Above all administrative measures, relentless safety propaganda is the crying need of the day. Merely publicizing statistics and figures of accidents will not make any impression on the imagination of the masses. The tech-

A section inside the new building of the Madras District Central Library at Mount Road, recently declared open by Home Minister Bhaktavatsalam.





The Assistant High Commissioner of Ceylon, presenting a packet of tea to Chief Minister Kamaraj to mark the formal handing over of ten chests of tea from the Government and people of Ceylon towards relief of distress caused by floods in Tamilnad.

niques employed in propaganda should be really effective and produce useful results. The problem has to be tackled in a realistic manner.

In 25 per cent of the fatal accidents the victims are children. In a majority of cases the parents were negligent and want of due care and caution on their part led to the tragic deaths. It is unreasonable to expect the children to act with mature wisdom on the road. A law may be necessary to hold the driver of the vehicle at fault in all road accidents in which children are killed. It would be worthwhile also to punish by law the negligent parent or guardian for exposing the children to road accident risks by letting them stray on the road.

Common tragedies

It is nothing short of savagery to let innocent children be victimised on the roads through parental negligence. A cyclist darting from a side lane, or using the road in any manner he likes, and getting killed as a consequence will not evoke sympathy. He is punished for his rashness. Cyclists top the list as victims of road accidents in the City. Attention therefore should be diverted mainly towards preventing road accidents to innocent children and teaching the cyclists the value of life.

Frequency of news-items of road accidents in the dailies has become such a routine affair that nobody pays any serious attention. Very few have time to realise the poignancy of such tragic occurrences. Many might not have witnessed the ghastly spectacle at the scene of accident. It should be remembered that every traffic accident has a tragic story behind it. The wailing mother besides the savagely mutilated body of her beloved child, sprightly and full of hope and joy a few seconds before; the breadwinner of a big family suddenly razed to the ground leaving his wife and children in misery are common enough road tragedies. Not many realise that this can occur to any one at any moment.

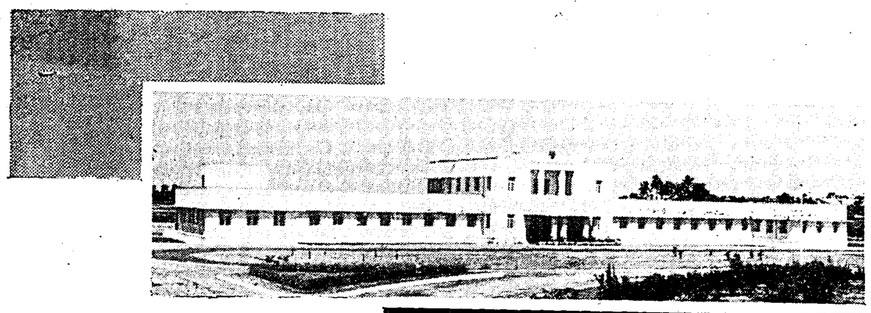
Propaganda needed

Vivid and sustained realization of the appalling horrors involved in accidents and proper traffic education with a touch of emotional appeal are needed. Every one should consider that every life lost in a road accident is a personal loss to the entire community. There is great need for inculcating 'safety consciousness' in every road user. The school teacher has a part to play in this task. School children should be drilled to develop road discipline. Emerging from behind buses and parked vehicles, playing on the road, riding recklessly on bicycles, running behind moving vehicles and running across without looking out for on coming traffic are the common mistakes committed by school children. Teachers and parents should make children aware of the dangers involved in such mistakes.

It is possible to improve defective road conditions wherever they are found to be responsible for accidents. Traffic signs and regulations if faithfully obeyed by all road users, would certainly result in a fall in accidents. In Western countries, the tragic part played by alcoholism in causing road accident is shocking and experts are not in a position to control it in spite of best efforts. Thanks to Prohibition, Madras State has no such problem. Prohibition has not only saved the health of the alcohol-addict but has also incidentally contributed to safety on roads. Accidents due to alcoholism are very rare occurrences here. But quite a sizable percentage of road accidents is attributable to the folly of the road user. It is only through sustained propaganda that the road user can be trained in higher standards of road discipline.

Electrolytic Engraving on Metals

A quick and economic method for engraving trade-marks, figures or letters on hard metals and alloys in their finished condition has been patented by the Council of Scientific and Industrial Research and released free to industry. The new process has been developed at the National Physical Laboratory, New Delhi. Etching can be completed in about 20 to 30 seconds by this process.



Highways Research Station

K. RAMASWAMI REDDIAR, *Director, Highways Research Station.*

[*In this article, the author traces road and traffic developments that have necessitated research in the nature and design of Highways and enumerates the activities of the Highways Research Station, Madras, to meet the challenges posed by these developments*].

Madras State has the best road system in our country, with about 28,000 miles. The annual expenditure on them comes to Rs. 365 lakhs for maintenance by way of repairs and renewals. Roughly another 300 lakhs are spent on new construction of bridges and culverts and road improvements and raising of avenues. The State Highways Department controls the entire road system of the State exercising the technical responsibility for roads in Cities and municipalities.

Most of the developments of roads in the past were evolved from cut and dry methods on the highway itself. The surface geometrics and road capacity were kept in keeping with the speed and loads of the vehicles of the day, mostly bullock carts or other animal drawn vehicles, and design features incorporated very little engineering knowledge and experience.

Unbalanced Development

With the advent of the automobile and its phenomenal improvements in capacity in the post-war period, modern vehicles with great speed potential, buses with broad chassis and load capacities, and huge truck-trailer combinations to move heavy packages for industrial development, have come to occupy the roads. The roads of old remained much the same with only surface improving, thus failing to keep pace with the advancement in vehicle manufacture. The result was an unbalanced development in two aspects: on one side, roads were failing prematurely, because of loads in excess of those for which they were constructed, because of the use of inferior sub-grade soil and because of lack of knowledge of materials when the roads were built; on the other side, transport facilities of speed and load capacity were not fully utilised and this made transportation costs unnecessarily high and increased risks of accidents also.

Need for Research

To suit heavier and faster vehicles, the roads had to be modernised to provide for dual lane carriageways, wider road beds to absorb modern standards and geometrics, and stronger road structures as bridges and culverts to carry heavier loads and all this involved higher costs per mile of construction. It therefore became necessary to make the best use of available funds to meet higher costs of construction to develop new materials, more economical methods of construction and maintenance. Investigations were required to assess the strength of sub-soil conditions to base the design on actual requirements. Also, more knowledge of vehicle behaviour, especially at higher speeds, about the use of mechanical plants to replace older and slower methods of construction were needed.

The Madras Highways Research Station was established to go into these problems and has been functioning since 1957. Its activities are divided under four main sections; soils; bitumen and aggregate; concrete and structures; traffic and safety.

The principal construction material for most highways s natural soil. The road or bridge is placed upon it and the mbankments are made of it. The soil bed combined with he road pavement should therefore be designed to keep lown the intensity of traffic forces transmitted to he soil at such low value that permanent deformation s avoided. The object of research now is o find the maximum stress that each type of these soils vill carry without significant deformation, and secondly, he load spreading property of various materials, relating heir thickness to the traffic forces and properties of he soils. One way in which this is done by the plate earing test on the subgrade, as the one recently carried out n Mount Road in the City.

The research activities in soils section comprise ssessment of strength of soils in foundation beds, examining ays of improving bearing power of soils and investigating ow soils can be stabilised as an integral part of the road tructure. Particularly for developing low cost roads o serve rural areas much advance has been made after xtensive studies on soils and low grade aggregates with he bituminous materials, cement and lime and other aste products like fly ash now increasingly available in actories.

Bitumen Surfacing

Almost all the main lines of communications constituting over 7,000 miles are now provided with black topped surface and maintenance of these sections of roads consumes annually over 10,000 tons of bitumen costing about 30 lakh rupees. Every year further mileage is required to be treated with bituminous surfacing to meet the pressure of increasing motor traffic and the requirements of developing interior areas. Along with the problem of increasing mileage, there is the deterioration of surfacings caused by weather resulting in the disintegration of the bitumen coating and stones parting on account of the destructive action of traffic. Bituminous coating does not stick on well with some aggregates and it gets separated by moisture and gets whipped out under traffic. So it has become important to make economical use of the bitumen with a view to extend not only the mileage of roads but also their useful life and that within the limited allotment of funds. In deciding on the best means of using bitumen a wide range of alternatives is available in the materials; in the way they are combined and in the overall thickness of construction.

Srimathi Kamaladevi Chattopadhyaya, Chairman, All-India Handicrafts Board, inspecting handicrafts at the Special Armed Reserve Police Camp at Avadi.



Uniform Texture

So research is to be taken up firstly in the combination of base and surfacing required for differing conditions of traffic and subsoil and secondly in the design of durable surfacings which will maintain a uniform non-skid texture throughout their useful life. This involves studying of the effect of weather and traffic on the binders and treated aggregates, testing of the suitability of the stones and offering of suitable designs for such pavements.

The Highways Research Station is also studying presently the possibility of using the Tar that may become available as waste in the Neyveli Lignite Fields, for road construction projects, in replacement of the bitumen now being imported.

Bridges and Load limits

In Madras State until recently lorries and load transport vehicles were permitted with a laden weight of five tons. This limit has been raised to nine tons and now there is a persistent demand for allowing heavier loads of 12 tons and over. But the culverts and bridges on the roads are the links which decide the load limit ultimately. These were constructed in the past, some of them over 100 years ago. Their carrying capacity is not definitely known.

For assessing the strength of these bridges investigations consisting of (1) mathematical analysis, (2) laboratory tests on models and (3) actual load tests on bridges are to be taken up. Some of the load tests conducted in the past by the Highways Research Station include the one on Uppodai bridge at Sathur in 1959 and another more recently, on Napier bridge with heavy vehicles of Neyveli Lignite Corporation. Some more load tests on bridges will be conducted shortly in Salem district. The data collected from these load tests help to arrive at criteria for estimation of the strength of the existing bridges to permit heavier loads and to evolve improvements in the design of bridges.

Numerous culverts and bridges on our roads are either narrow or weak and will have to be reconstructed or replaced. Every year a sizable amount of expenditure on roads is being diverted to reconstruction of existing bridges or for new bridge constructions. These programmes will have to be gone through expeditiously to avoid delay and inconvenience to traffic flow. The conventional methods of bridge and culvert construction involve considerable time lag at every stage, from the foundation to superstructure. A suitable method to speed up this construction process has been found quite necessary. An appropriate way of doing this in these days of rising prices, continued scarcity of certain materials and dearth of skilled labour, is prefabrication of the units in a central place and assembling them at the site. This method offers the right solution for the quick and economical construction of bridges and culverts. A start in this direction has already been made for construction of culverts on the National Highways.

Concrete mix

The main construction material in these structures is concrete. Concrete has all along been mixed in 1: 2:4 proportion by volume developing an ultimate strength of about 3,000 lb/sq. in. To effect economy and to control the uniformity, concrete mix is now prescribed in terms of strength standards. With prestressed concrete entering largely in bridge construction, concrete in strength varying, between 8,000 to 10,000 lb/sq. in. will have to be produced involving testing of aggregates for strength, voids and density, in the design of the mix.

The traffic on our roads is increasing in volume, weights and speeds are also going up and streets designed for limited traffic capacities are becoming congested causing traffic delay and accidents. It has become necessary to devise methods of avoiding traffic congestion, to facilitate quicker movement consistent with safety. The subject is complicated involving as it does the road, the vehicle and the road user. What is needed is collection of data and analysing the data statistically. These are accomplished by surveys carried out with special reference to traffic volume speed and movement and by studying requirements of intersections, junctions and parking conveniences. Such a survey, was conducted recently on Mount Road by the Highways Research Station.

Underlying Causes

The design of roads and road structures till recently was based largely on traditions and experience. Research seeks to discover the underlying causes of success and failure by investigating the mechanics of the road structure, the stresses caused by traffic and weather and their distribution through layers of road crust, and the most economical combinations of sub-base, base and surfacing and the effects of strong and weak sub-grades.

This sums up broadly the activities of road research now inprogress in the State and how it helps in the planning, design, construction, operation and maintenance of the various road systems in producing permanent, safer and more economical roads and road structures.

Games for Crippled Athletes

From many parts of the world crippled athletes went to Britain recently for the International Games for Paraplegics organized by the Stoke Mandeville Hospital, Buckinghamshire.

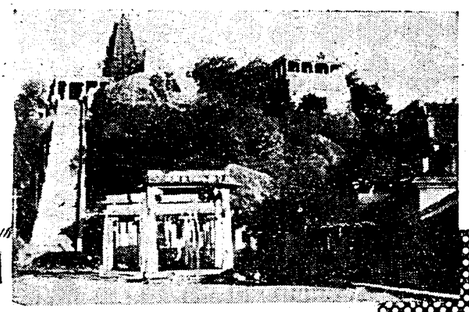
Contestants—Victims of infantile paralysis, the war, or road accidents—were thought until a few years ago to be hopeless cases. Now they competed in all types of events—archery, darchery (a specially devised adaptation of darts and archery), swimming, table tennis, fencing, basketball, snooker, weightlifting, throwing the javelin and putting the shot.

The games were inspired by Dr. Ludwig Guttman, Director of the Stoke Mandeville Hospital's spinal-injury unit. Dr. Guttman has spent years studying the physical, psychological and social advantages of sport for the disables. He started the games in 1948 between teams of disabled ex-servicemen. Four years later, a team of Dutch ex-servicemen entered.

Since then, the scope of the games has expanded enormously. Last year, the games reached the peak of their achievement when they were held in Rome after the Olympic Games. Twenty-one countries took part.

4A

Viralimalai KURAVANJI



KUMARI N. SHYAMALA, *Research Officer, Madras State Sangita Nataka Sangham.*

[But for the timely efforts of the author of this article, now a Research Officer in the Madras State Sangita Nataka Sangham, who was responsible for rescuing and reconstructing the Viralimlai Kuravanji, this beautiful ballet piece of South India would have passed into oblivion. A scholarship in the Humanities from the Union Government and encouragement from the Madras State Sangita Nataka Sangham made possible the fruition of her efforts.]

Temples are the glory of Tamilnad. Their architectural magnificence is without parallel. They have helped to preserve the arts of music, dance and drama. These arts were incorporated in the rituals, ceremonies and festivals of the temples. The festival shows provided education through cultural entertainment to the masses, who were admitted free. The Kuravanji was one such entertainment which, with many others, has practically gone out of vogue, probably owing to changes in the complexion of life wrought in the first half of this century.

Standing mid-way between the art of the classes and of the masses and uniting them in a cultural tie is this dance-drama form. This type of art is a standing example of the healthy influence which the classical and folk arts have always had on each other. Kuravanji is a happy combination of two ancient forms, the Kuram and the Kuluva natakam which are two Prabandas of Tamil literature.

A scene from the 'Viralimalai Kuravanji'



Set Pattern

Generally Kuravanjis have a set pattern wherein the familiar story is told depicting the heroine falling in love with the presiding deity of the place or with a prince or nobleman whom she has accidentally seen while he was coming in a procession. Her longing for love and its fulfilment expresses itself in appeals to Manmatha, the God of Love, to the Moon, etc. She entreats her maids to relieve her suffering by bringing her lover to her. The maids are at a loss and bring Kurathi Singi, a gypsy woman who comes from a tribe that has a proud tradition for foretelling the future. She reads the palm of the heroine and predicts that her long-cherished desire for the love of her Lord would be soon fulfilled. At this juncture, Singi's husband Singan who has been looking for her joins her. After an interesting domestic interlude between the gypsy couple the play ends.

Viralimalai Kuravanji is built on this type of story. Viralimalai is eighteen miles from Tiruchirappalli, in the erstwhile Pudukottah State. It is a well-laid-out village and rows of houses surround a hillock on which stands a famous shrine of Lord Muruga, i.e., Subrahmanya. The hill is the abode of hundreds of peacocks and presents a picturesque scene of natural beauty. The temple on the top lends added splendour.

The inhabitants, were for the most part, families belonging to an artistic community that has been traditionally responsible for the preservation of Bharatanatya, the classical dance of Tamilnad. Thanks to these families, the Kuravanji named after Viralimalai had an unbroken tradition of practical exposition for nearly two centuries.

On Mahasivarathri night every year, till some twenty years ago, the Kuravanji was staged as an all night show to large admiring crowds of nobles, officials and ordinary folk in front of the Mandapam below the foot of the hill. Almost every family in Viralimalai had a 'manyam' (heriditary endowment) for the dance art and two families in particular had special additional 'manyams' for the Kuravanji. It was their business to keep alive the tradition of the Kuravanji and this they did successfully until owing to sociological changes and other factors the traditional staging of the Kuravanji got abandoned some twenty years ago.

The present generation not having learnt the art at all, the songs, the music and the dance of the Viralimalai Kuravanji today live just in the memory of a few old women who had taken part in the play years ago when they were young. There was, however, a sixty-year old manuscript containing the test of a major portion of the Kuravanji songs. With great difficulty and after considerable amount of persuasion, I was able to collect the manuscript from the concerned families. Old ladies Srimathi Annammal and Srimathi Govindammal and Sri Ramachandra Nattuvanar had to be won over to sing the songs for being recorded on tape so that, with the help of the recordings, a traditional dance-drama could be reconstructed and the beautiful remnant of an ancient art preserved for posterity.

Author Unknown

The hero portrayed in this play is Subrahmanya Mudaliar, the Second Administrative Officer to King Vijaya Raghunatha Thondaiman (1730 to 1769) of Pudukottah State. The author of the work is unknown. The date of the work (around 1750) places it in the pre-Thiagaraja period and, as such is of great interest in regard to the ragas and melodies used therein. The ancestry of Subrahmanya Mudaliar is traced to Sekkizhar, the great Tamil poet who wrote the Periapuranam.

In the Viralimalai Kuravanji as in other Kuravanjis the hero never appears on the stage but is only spoken of. The well-bred heroine Rajamohini falls in love with the hero whom she has seen accidentally in a ceremonial procession. The love-smitten heroine appeals to the Moon, Manmatha and the Thenral, Southern Breeze, for fulfilment and entreats her maids Sakhi and Suradavalli to bring her over to her. They bring Kurathi Singi, who after describing the [illegible] predicts that her desires would soon be fulfilled. In the heyday of this Kuravanji, two Kurathis danced in the place of one for the sake of symmetry and they delighted the spectators with their song, dance and scintillating wit. The play ends with a very interesting discussion between the Kurathi Singi and her husband Singan.



Governor Bishnuram Medhi was the Chief Guest at the 'Viralimalai Kuravanji' recently staged in the City.

The Modern Presentation

The Viralimalai Kuravanji as reconstructed today is a happy combination of classical and folk traditions in music, dance and drama though the former predominates. The dance and music of Rajamohini are purely of the classical type while one does observe touches of folk traditions in the dance and music of the Kurathi. The dance and music of the Kuravan, Singan is semi-classifical and may be termed as stylised folk art.

This Kuravanji, after a lapse of more than fifteen years was presented first to the public of Madras at the Annamalai Manram by me in December 1958, as an authentic research piece, during the Tamil Isai Sangam festival.

Governor's Appreciation

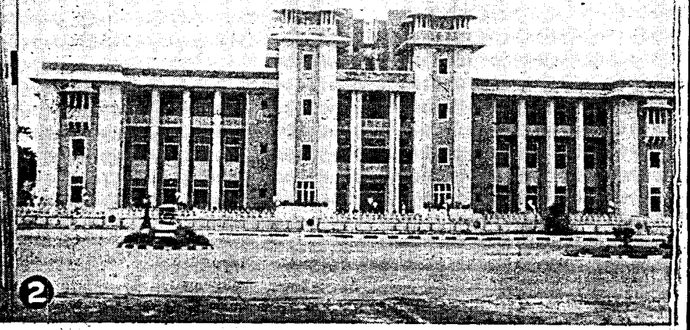
The Viralimalai Kuravanji was again presented to the public of Madras at the Mylapore Rasika Ranjani Sabha on July 27, 1961 by the artistes of the Nrithyodaya Art Centre with the benefit of aid from the Madras State Sangita Nataka Sangham which is considerably interested in reviving Kuravanjis and other dances connected with temples and their traditions. The presentation on this occasion had the added advantage of greater sophistication and showmanships lent to it by the superb dance direction of Natyakalakesari Vazhavoor Ramiah Pillai.

Governor Bishnuram Medhi who was the Chief Guest at the dance-drama was profoundly appreciative of the Kuravanji. Smt. Annammal, an old lady of Viralimalai who had herself played in the Kuravanji in days gone by, was present during the function. She had been specially brought to witness the dance-drama to the revival of which



Vice-President Radhakrishnan fulfilled a number of engagements during his recent visit to the South of which the opening of the Centenary Building of the Madras University was the major event. (1) He was greeted on arrival at the Airport by Governor Bishnuram Medhi, (2) Opening the University Centenary Building, (3) Inspecting the Model of the Building, (4) Laid the Foundation Stone for the Chingleput District Central Library Women's Annexe.

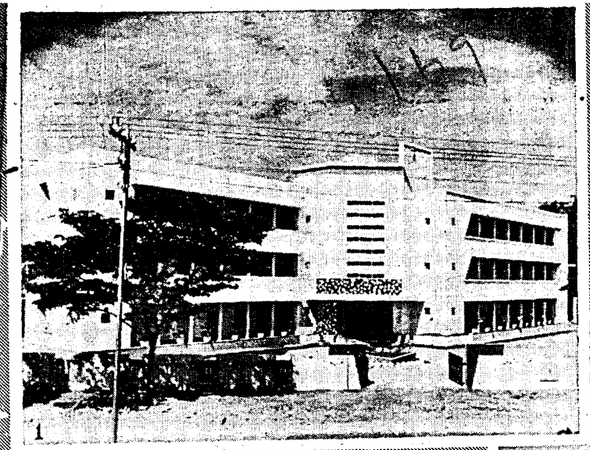




VICE-PRESIDENT'S visit

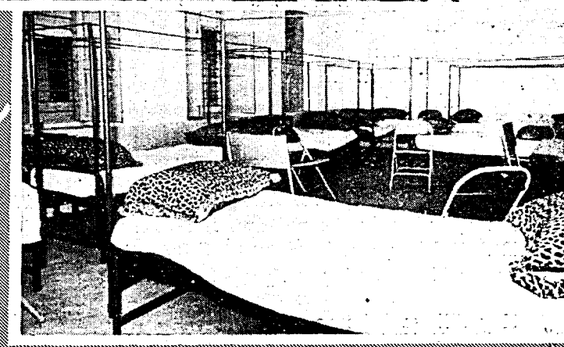




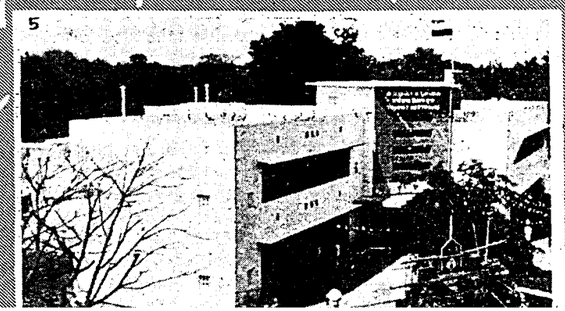


NEW Tourist homes









As part of the programme to provide good tourist homes for people with moderate means, two such rest houses were recently inaugurated in the State, one at Madurai by Chief Minister Kamaraj and another by the Union Minister for Transport and Communications, Sri. P. Subbaroyan. (1) and (5) The Madurai and Tiruchirappalli Rest Houses, (2) The well-furnished reception hall in the Tiruchirappalli home, (3) Large bed

Animal Husbandry in Third Plan

D. PATTABIRAMAN, *Director of Animal Husbandry.*

[*The progress under Animal Husbandry achieved during the First and Second Plans will be further consolidated and the work accelerated during the Third Plan. The Director of Animal Husbandry enumerates in this Article the Third Plan Schemes and the scope for development during the period*].

Before the launching of the Five-Year Plans, the scope for Animal Husbandry development was severely limited. During the First Five-Year Plan, with a modest provision of Rs. 56·28 lakhs, it was possible to make a start and the foundations for development were laid. The introduction of the All-India Key Village Scheme for intensive cattle development under which 15 Key Village Blocks were established, each covering about 2,000 cows and buffaloes of breeding age, the development of the District Livestock Farm, Pudukkottai, the establishment of a Sheep Farm for woolly sheep in Nilgiris and the starting of the stockmen course of 11 months' duration were the main achievements during the period.

The provision for Animal Husbandry was Rs. 217·48 lakhs during the Second Five-Year Plan of which about Rs. 200 lakhs have been spent. Substantial progress has been achieved during this period.

Key Village Scheme

The Key Village Scheme was intensified. In addition to the expansion of the Key Village Blocks started during the First Plan, 23 more Key Village Blocks each covering about 5,000 cows and buffaloes of breeding age were established in the breeding tracts. Nineteen Urban Artificial Insemination Centres were established to improve the milch cattle in urban areas. For the systematic utilization of the superior bulls produced in the Key Village Blocks, 46 Key Village Extension Centres were established in various districts, each centre with 50 bulls to cover about 5,000 cows and she-buffaloes of breeding age.

The calf subsidy scheme was intensified to ensure proper rearing of improved calves to maturity. In order to ensure adequate attention to the nutrition of the improved progeny a scheme for the development of breeds and fodder resources was introduced. Under this scheme Government Livestock Farms and seeds and grass slips were sold to the ryots at subsidised rates. Construction of silo pits was also subsidized to encourage conservation of fodder. Ten acres demonstration pasture plots were established in the Key Village Blocks in private lands by granting subsidies to the owners.

Livestock Farms

A District Livestock Farm at Chettinad, Ramanathapuram district, and a Sheep Farm at Kattupakkam, Chingleput district, were established. The existing farms were improved with additional buildings, soil conservation measures, sinking of more wells, etc. Four selected goshalas were also developed.

Twenty-eight Poultry Extension Centres with a foundation stock of 100 birds at each centre have been set up with a scope for expansion as Poultry Farms. Twenty Poultry grading centres were also started and 200 cocks of exotic variety have been distributed in each centre on exchange basis to grade up local stock. Private poultry breeders were encouraged by subsidies to develop their poultry farms and 253 farmers were also given six weeks training in Poultry Husbandry.

Sixteen sheep and Wool Extension Centres have been established for the development of sheep in compact areas. Pig breeding units and duck breeding units were introduced in some selected livestock farms.

Healthy Competition

Adequate attention to the control and eradication of cattle diseases was paid during the period. A mobile unit has been provided for each district to combat cattle diseases speedily and effectively and additional stockmen were appointed to assist Veterinary Assistant Surgeons in their work. Improvements of Veterinary Institutions were effected by electrification and supply of additional

In order to create a healthy competition among livestock breeders four State Cattle shows and 35 District Cattle shows were also conducted in addition to numerous village cattle shows.

To meet the increasing demand for veterinary personnel, admissions to the B.V.Sc. and the Stockmen courses were increased. A Post-graduate degree course (M.V.Sc.) was introduced in the Madras Veterinary College and additional staff and buildings were provided.

The Third Five-Year Plan provides for a sum of Rs. 352·25 lakhs for Animal Husbandry developments in this State. The progress achieved in this sphere during the First and Second Five-Year Plans will be consolidated and the work further accelerated during the Third Five-Year Plan period.

Significant Results

Since very significant results have been achieved in cattle development through the Key Village Scheme, it is proposed to further expand and intensify the various aspects of this scheme during the Third Plan period.

Twenty additional Key Village Blocks will be established each with ten Key Villages attached to cover about 10,000 cows and she-buffaloes of breeding age. 7,000 selected calves will be subsidized. Fifty additional Key Village Extension Centres will be established in the districts to grade up local cattle with superior bulls produced in Key Village Blocks. The scheme for the development of feeds and fodder resources will be further intensified. Steps to ensure economical use of available fodder and conservation of fodder will be undertaken. The increased production of nutritious fodder grasses and leguminous fodder crops will be encouraged by subsidies.

Towards the achievement of the objective of establishing at least one Livestock Farm for each district, it is proposed to establish three additional livestock farms during the Third Plan period. Two of the existing farms will be further improved and expanded with additional stock, staff, buildings and equipment. Twenty more goshalas will also be developed.

Mixed Farming

A scheme for the development of mixed farming will be introduced. Ryots will be encouraged through loans and subsidies to keep milch cattle, sheep and poultry to provide subsidiary income and derive the benefits of mixed farming by raising crops in suitable rotation so as to provide food and fodder. Elimination of scrub bulls will [illegible] all the districts. Cattle shows at State, District and Village levels will be conducted and fodder and milk yield competitions will be organized as an incentive for greater production.

Since cattle play a very important role in the economy of the agriculturists and sudden losses of cattle would result in disruption of their economy, a pilot scheme for Cattle Insurance, the first of its kind in India will be introduced in the State during the Third Plan period. It is also proposed to undertake detailed surveys of Animal Husbandry practices and arrange for registration of cattle in the breeding tracts.

Sheep development

In order to intensify sheep development, an additional sheep farm will be established in Ramanathapuram district and twelve additional Sheep and Wool Extension Centres will be established. Since pig development would augment our food production, two big breeding units and four big development blocks will also be established.

Sufficient emphasis has also been laid in the Third Plan on poultry development. The existing State Poultry farms will be expanded with a view to increase the production of eggs and birds. Twenty additional Poultry Extension Centres will be established and seven of the existing centres will be expanded into poultry farms with 500 layers each. A plant will be established for the manufacture and supply of ready made balanced poultry feed to poultry breeders. Intensive development of poultry will also be undertaken in all rural areas through the introduction of forty thousand exotic cockerels on exchange basis in the villages.

Chick hatchery

Sale of day old chicks at subsidized rates to villagers will be undertaken to encourage them to rear poultry. A chick hatchery will be established to augment the production of eggs and birds to meet the ever increasing demand.

The Madras Veterinary College will be strengthened by additional staff, equipment and buildings. The establishment of a State Livestock Research Station for conducting research into problems of Animal Husbandry, a Foot and Mouth Disease Laboratory for study and production of a suitable vaccine for control and eradication of this disease, hide flaying and curing centre and a mobile bone crushing unit for improving the value of hides and proper utilization of carcasses are also included in the Third Plan.

As a result of all the above programmes of work, it is confidently expected that Animal Husbandry development would have reached an appreciable standard by the end of the Third Plan.

Sea Weeds Serve Mankind

V. D. SPURGEON, *Deputy Director of Fisheries.*

[*Are sea weeds of use to man as are plants on land. The answer is ' Yes '. They serve man in more ways than is known. Where are the sea weeds found, how are they useful and what steps are the Government taking to utilise them are some of the points dealt with in this article*].

ees-gigantic and spreading like the banyan, towering the palm, small shrubs, herbs, creepers, climbers, ers and tender grasses represent the plant life on land, rms varying and in colours kaleidoscopic. The foliage lowers around not only add beauty and grace to the but also serve humanity in numerous ways.



inister Bhakthavatsalam planted a sapling at the State t School for training Foresters and Forest Home Guards he inaugurated at Vaigai Dam recently.

Just as on land, there are plants beneath the sea. They are collectively called sea weeds. Some of them are rooted and some are free floating. Some of them are so small that they can be seen only with the aid of the microscope. Sea weeds are scientifically known as *Algae* and according to the pigments present in them they are named as *Green algae, blue-green algae, Red algae* and *Brown algae.*

Where Abundant

Weeds of different kinds are found in good quantities all around Madras coast. They are more abundant particularly off coral islands like Krusadai and Rameswaram. Generally coasts of the maritime districts like Ramanathapuram, Tirunelveli and Kanyakumari are considered as potential sources of sea weeds.

Unlike fish, collection of sea weed is very easy. Sea weeds are washed ashore in large quantities. One has only to walk along the coast gathering the weeds. It is a common sight to see bulky lumps of sea weeds tossed on the shores of Rameswaram, Pamban and Krusadai, by waves and high tides. Heaps of weed dried or half-decomposed, are seen along the entire coast of Tirunelveli, Ramanathapuram and Kanyakumari districts. At present all these green matter from the sea is wasted or made only little use of here and there.

Varied uses

One may wonder in what ways sea weeds are useful. Sea weeds are however used by us in one form or other, knowingly or unknowingly. To mention a few, they are used in food articles, medicines, manures and cosmetics.

Of all the products of sea weeds, agar is the most important and the most widely used. For good agar yield *Gracillaria lichenoides* is considered to be the best type of sea weed. It is capable of yielding large quantities of agar of good quality.

The sea weed is collected in large quantities and dried up in the sun. Then it is ground lightly with a pestle and mortar. Next it is washed well. Again the bulk is ground into grains. These grains are kept soaked in soft water for four hours and then filtered. The filtered solution containing fine grains is then transferred to a container containing boiling water with a little pottassium bi-sulphate and left for some time.

Agar Solution

The potassium-bi-sulphate separates the protein and dirt and the matter so separated settles at the bottom. The upper clear fluid is taken and filtered. This is the Agar solution. This is poured on a shallow wide plate and left until it gets solidified. This is cut into bits of the size 9″ long 3—10″ depth. These bits are spread on a plastic net and dried in the sun. The dried bit is the final product Agar. It looks like a translucent glassy strand. Agar manufactured like this is found by experience, as in no way inferior in quality to the Agar imported from foreign countries.

Agar is used in the manufacture of edible dishes for the table. While preparing desserts like 'payasam', a little agar is added to obtain the correct consistency. Similarly in the preparation of delicacies like 'Halva' agar can be added to hasten solidification. To get solidification to the required standard is always a problem in jelly preparation. If a little agar is added, this difficulty is overcome. Agar is used in the manufacture of bread, cake, powder milk, ice cream, jam, etc.

Agar is used in medicines also. It is mixed in pills to regulate its dissolving capacity. For dressing wounds and cuts agar is useful. The very common Iodine is manufactured from the sea weed—Brown algae. From the same sea weed alginic acid is prepared.

Sodium alginite is another product of sea weed which is as important as ugar. It is widely used in the manufacture of cosmetics like face powder, snow, etc. In the production of greasy chemicals sodium alginite is used to maintain consistency and enhance keeping quality.

Shore-washed sea weeds form valuable and very nutritive fodder for cattle. In Western Countries feeding cattle with sea weeds is in vogue.

Good as Manure

Any sea weed can be converted into manure in the following way. The weeds should be dried well in the sun for days. Then it should be spread into a layer ½″ in depth and water sprinkled over it. Powdered cow dung should be spread over this layer to a depth of 1½″. Like this, alternating layers of weeds and cow dung should be piled up till the entire bulk is 4 feet high with a spread 6 feet in diameter. The heap so formed should be given a covering with wet clay. The clay covering should be 4 inch thick. Periodically the heap should be sprinkled with water. Left like this for two months the weeds get converted into manure of good quality.

Mineral Production in 1960

The value of mineral production in India in 1960 increased to Rs. 159 crores, according to the provisional estimates released by the Indian Bureau of Mines. The value of production in 1959 was Rs. 140·9 crores. This does not include the value of petroleum and atomic minerals prescribed under the Atomic Energy Act of 1948. The increase of nearly 13 per cent over the total value of mineral production in the previous year was mainly due to the increase in the output of coal, iron ore, bauxite, copper ore, china clay, dolomite, limestone and salt and the higher prices of gold bullion.

Consumers Own STORES

[As an organisation designed to secure for its members goods and services to their best advantage by reducing trading costs, consumers co-operative stores societies have become very popular. These societies appeal to all classes of people since all are consumers in one way or other. This article gives all the necessary information relating to the organisation and working of consumers stores societies and should be found exceedingly useful.]

A co-operative stores is an organisation of consumers designed to secure for its members goods and services to their best advantage by reducing trading costs. Unlike producers' societies which concern themselves with particular classes of persons in particular regions, stores societies appeal to all persons since all are consumers in one way or other. In this sense, it is open to the entire community to join these societies.

Stores Societies may be organised either for the benefit of the general public or exclusively for the benefit of community of persons such as public servants, mill employees and employees in other industrial undertakings. In fact, the organisation of this type of sectional stores has certain pronounced advantages, such as indentity of interests, homogenity of membership, mutual knowledge, etc.

Organisation

In organising a co-operative stores society, the first consideration is to ensure that the essentials of success are there. There should be a definite advantage to the members in the running of such a stores society. The loyalty of members, a scientific purchase programme in bulk at the producing centres, a steady volume of business and efficient management constitute the essential requisites for the successful working of a stores society.

The following are other points to be observed in regard to the registration of a society :—

(*a*) Sufficient amount of share capital should be forthcoming for running the Stores, say Rs. 5,000 in the Urban raea and Rs. 2,000 in the Rural Area.

(*b*) The District Co-operative Central Bank should be consulted regarding its willingness to finance the proposed society.

(*c*) At least a portion of the working capital should be raised by way of local deposits as evidence of the earnestness of the promoters without looking to the Central Bank for the entire finance.

(*d*) There should be suitable persons with requisite leisure and business acumen to take up the management of the stores and run its business.

Membership and share capital

Any person who is competent to contract and residing within the area of operations of the society is eligible for admission as a member of the society. It is also open to institutions like devasthanams, jails, hospitals, hostels, etc., to join as members of the society and make regular purchases from the society. In the case of smaller stores a minimum of Rs. 2,000 and in the case of bigger stores, specially in Urban areas, a minimum of Rs. 5,000 should be forthcoming as share capital. Ordinarily, the value of each share is fixed at Rs. 5. One of the effective ways of stabilising the position of stores societies is to enlist as many members as possible and build up a substantial share capital. The societies should normally depend to a large extent on their own share capital and deposits for running their business. They may however obtain cash credit accommodation from the financing bank subject to certain conditions.

Management

The executive management of the affairs of the stores vests in a Board of Directors elected from among the members by the general body of the society. The strength of the Board may consist of five or more members according to the size

he society. The Board can meet as often as is necessary transact business. The Board will attend to the following ns of work, among others, for carrying on the business of society:—

(*a*) The purchase of the required commodities in bulk at proper season from the producing centres.

(*b*) Fixation and regulation of sale price.

(*c*) Maintenance of proper accounts.

(*d*) Periodical verification of stocks.

(*e*) Appointment of the required staff such as salesmen, hier, etc.

(*f*) Proper display of goods handled and good salesnship.

The Board, may, if necessary, constitute smaller subamittees, like purchase and price fixation committee, ounts committee, etc., to run the business efficiently.

e ultimate authority

The ultimate authority in all matters relating to the tores, ts in the General Body. The General Body is vested with ong others, the following powers :—

(*a*) Election and removal of directors.

(*b*) Adoption of audit certificate.

(*c*) Passing of annual budget.

(*d*) Expulsion of members.

Every member is entitled to attend the general body eting and will have one vote. All questions in the General ly meeting are be decided by majority votes.

Co-operative stores sell commodities to members for cash current market rates. Some stores societies, especially se formed exclusively for employees in Government comcial bodies, etc., where the members get monthly wages salaries, sell on credit also subject to the condition that pay disbursing officers agree to deduct the members' s from their salary or wages every month and remit the veries to the concerned societies.

The requirements of members have to be assessed well in ance and proper arrangements made to purchase stocks ulk in the proper season from production centres as far as sible. The primary stores societies can get themselves liated to the co-operative wholesale stores functioning he district level in each district and purchase their requirent from the later. There should be adequate storage ilities where stock procured can be stored and released distribution as and when necessary. A judicious selection of articles to be handled by the stores should be made bearing in mind consumer tastes. Quality stuff and fair price are the other essential factors that develop loyalty of members to the institution. Salesmanship and shop-keeping also play a vital part in its successful running. The staff in the stores should be taught to practice the art of "service with a smile".

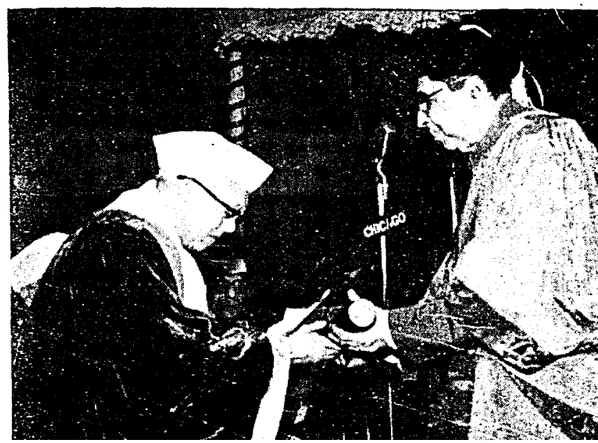
Profit distribution

The strengthening of reserves is one of the effective measures to put the system of co-operative distribution on a stabilised basis. Though under the Act the societies are required to carry only 25 per cent of their net profits to the Reserve Fund, most of the societies have provision in their by-laws to carry a larger percentage of their net profits, say 40 per cent, to the Reserve Fund. Besides, provision is also made for carrying not less than 10 per cent of the net profits to a business loss reserve by way of abundant caution. The balance is distributed by way of dividend to members, Common Good Fund, Building Fund, etc., according to the provisions made in the by-laws. An important feature in the stores societies is that a portion of the profit is given back to the members by way of bonus or dividend on purchases in proportion to the quantum of purchases made by each member.

Government Assistance

With a view to enlarging membership in stores societies and enabling them to have a larger turnover of business and thus stabilise their position, Government have permitted stores societies to sell to non-members, temporarily, till 31st December 1961.

Governor Bishnuram Medhi, Chancellor of the Madras University, conferring the Honorary Degree of Doctor of Laws on Sri. P. V. Rajamannar at the Special Convocation in connection with the opening of the University Centenary Building by the Vice-President Radhakrishnan.



Special staff has been sanctioned for the supervision of stores societies and Government have been exempting the societies from the levy of supervision fees year after year.

With a view to developing the activities of stores societies, import licences are given to these societies in respect of specified articles subject to certain conditions.

Preference is given to stores societies in the matter of allotment of Fair Price Shops and the distribution of scarce commodities by the State Government.

Development Schemes

Besides the above concessions, the following schemes have been drawn up for the development of consumers co-operatives under the Third Five-Year Plan.—

(*i*) As State participation in the share capital of 100 stores societies, Government propose to take shares to a maximum of Rs. 2,500 each in 100 stores societies selected for the purpose.

(*ii*) Under a scheme to revitalise stores societies, Government propose to provide financial assistance to 100 societies by way of subsidy for the appointment of Managerial staff on a graded scale of Rs. 900 per annum during the first year, Rs. 600 per annum during the second year and Rs. 300 per annum during the third year, for each society.

(*iii*) Provision of financial assistance to 50 societies by way of loan of Rs. 5,000 to each for installation of coffee grinding machinery.

(*iv*) Provision of financial assistance by way of a loan of Rs. 20,000 each to 20 stores societies for installation of oil crushing and grinding machinery.

The formal steps

The essentials for the organisation of a stores society have been indicated in detail. When once the need for organising a stores society is felt by a group of people at a particular town or place, the organisers should send a formal application to the Deputy Registrar of the circle requesting for the organisation and registration of a stores society. The Deputy Registrar will thereupon depute his staff to investigate into the matter, conduct an organisation meeting and complete the organisation proposals together with the draft by-laws, etc.

The chief promoter of the proposal should arrange to collect the initial share capital from intending members and invest it in the local co-operative central bank or an urban bank. On receipt of the organisation proposals in complete form, together with the draft by-laws, the Deputy registrar after due scrutiny will register the society and its by-laws and grant to the society free of cost a certificate of Registration bearing the seal of his office together with a copy of the by-laws as approved and registered by him. The Deputy Registrar will also depute one of his staff for the starting of the society after its registration. This person will arrange to convene a meeting of the members, explain to them the objects of the society and the by-laws adopted and then arrange for the election of the first set of directors and allotment of shares to the original signatories in the application. The proceedings of the meeting will be duly recorded in the Minutes Book and signed by the Chairman of the meeting. Thenceforth the stores society will have formally commenced working.

Guide Dogs for the Blind

The Guide Dogs for the Blind Association is expanding in Britain and more blind persons than ever before are to have dogs to guide them about the streets. When the association's third centre is opened this month at Bolton, Lancashire, 24 blind persons a month will be taught how to use dogs. A fourth centre is planned for Scotland.

The Association has been in operation for some 30 years and, as a result of its influence and activities, there are more than 700 blind people with guide dogs. Ideal dogs for guiding are Labradors, Alsatians and Boxers.

WEALTH FROM WOOD WASTE

J. DAYANAND RAO, *Forest Utilisation Officer.*

[*Use of waste wood as firewood and charcoal is uneconomic use of such wood when, considering the comparative poverty of the State's forest resources, they could be industrially exploited for conversion into boards, states the author of this article.*]

The area of potentially exploitable forests in Madras State is 0·14 acre per capita. This compares unfavourably with those of other countries like United States (3·0), Sweeden (7·9) and Canada (22·2). These figures indicate the very poor resources the Forests of Madras State afford.

It is therefore imperative that our meagre resources should be efficiently utilised. Maximum utilisation of wood waste and inferior species is therefore necessary.

Wastage in conversion normally occurs. Logging and sawing wastes range up to 50 per cent in the United States. In this 50 per cent, 25 per cent of the wood is left in the Forest to rot as logging waste and another 25 per cent is converted to waste wood during saw milling. In India however it is estimated that, that amount of wastage does not occur as much of it is used as firewood and charcoal. But this is an uneconomic use of waste wood which if utilised in a better way like converting into boards, would be far greater value. Thus the setting up of particle board or fibre board industries assumes great importance.

Hard Board

Hard board is produced from wood or such fibrous ligno cellulose raw material. The process consists of chipping and softening the chips under pressure by steam. Delignifying chemicals may be used. This is then defibred and wet or airfelted and then dried under heat and pressure in a hydraulic press. Binding materials may be used during such process.

Many species which are at present used only as firewood can be utilised for this purpose. In this connection it will be interesting to note that Asia produces only about 2 per cent of the world production of hard board and our country is producing a megre quantity.

However it has to be accepted that use of hardwood has not yet caught the imagination of the public in India where it is difficult to estimate the market. Hardwood is very popular in Europe and the United States.

The raw material

Location has a great bearing on the size of an economic plant. For India it is estimated that the minimum size for such a plant would be approximately 20—25 tons per day or approximately 6,000—7,500 tons per year. Such a plant would besides require 1,200 K.W. power per day.

Madras State offers excellent raw material for such a project in its wattle wood grown abundantly in Nilgiris and Palanis. In Nilgiris an area of nearly 16,000 acres is under wattle and this is being increased at the rate of 3,000 acres per year up to 1965. Similar is the case with the Palanis where also extensive work on wattle is on hand.

Similar is the case with the insulating board industries. Here also Asia is lagging far behind. Insulating board in India can be used for non-bearing house partitions, sound deadening acoustic tiles, roof decorating, etc.

Manufacture of Insulating board has been mentioned because this can be manufactured from bagassee. This bagassee must be available in good quantity in Madras State.

Chip Board

Chip boards as the name indicates are composed of distinct particles of chips, splinter, shaving, etc., which are binded together with an organic binder.

Use of chip boards are varied. A few of its uses are as Panel material for walls and ceiling interior and as care stock

r overlaid furniture and veneer board. Chip board is so versatile a material that it competes with the plywood ndustry.

The development of the chip board industry need not be lelayed. Madras affords a favourable location for such a plant. Suitable wood species such as Blue gum and wattle are available and a market for the product can be created.

Paper Boards

Practically negligible is the amount of paper board that is manufactured in Madras State. With the rapid industrialisation of this State, consumption of paper board is bound to increase rapidly.

Paper board is generally used for cartoons and general packing of merchandise.

The raw materials most commonly used are rice and wheat straw. Waste paper is also an excellent raw material.

The most important factor in production is water which would be required at the rate of 2 milllon gallons per day for the smallest economic unit.

It is expected that industrialists would come forward to utilise the available raw material and thus help in the industrial progress of the State.

Data on availability of raw material

Area of Bluegum already planted — 6,749 acres.
Area of wattle already planted — 26,586 acres.

Future programme.

Year.	*Area to be felled in acres.*	*Wattle yield of wattlewood at 20 tons per acre.*	*Area to be felled in acres.*	*Bluegum yield of Bluegum at 50 or 60 tons per acre.*	*Total yield in tons (Air-dry).*
(1)	(2)	(3)	(4)	(5)	(6)
1961	500	10,003	..	..	10,000
1962	500	10,000	..	..	10,000
1963	500	10,000	..	..	10,000
1964	700	14,000	..	..	14,000
1965	700	14,000	500	25,000	39,000
1966	700	14,000	600	30,000	44,000
1967	1,800	36,000	600	30,000	66,000
1968	2,000	40,000	600	30,000	70,000
1969	2,000	40,000	600	30,000	70,000
1970	3,500	70,000	200	10,000	80,000
1971	3,500	70,000	200	10,000	80,000
1972	1,500	70,000	200	10,000	80,000
1973	3,700	74,000	100	6,000	80,000
1974	3,700	74,000	100	6,000	80,000
1975	3,700	74,000	100	6,000	80,000
1976	1,800	36,000	700	42,000	78,000
1977	2,000	40,000	700	42,000	82,000
1978	2,000	40,000	700	42,000	82,000
1979	3,500	70,000	200	12,000	82,000

The following quantities of wattlewood will be available in Upper Palnis (Kodaikanal Region), which can be used for preparing chip boards.—

Year. (1)	*Expected yields in tons.* (2)	*Year.* (1)	*Expected yields in tons.* (2)
1957–58	4,000	1965–66	11,000
1958–59	9,500	1966–67	17,900
1959–60 and 1960–61	13,000 per year.	1967–68	21,600
1961–62 to 1964–65	7,000 per year.	1968–69	27,000
		1969–70 onwards	30,000 per year.

Police Village Development Scheme

[*Under the Police Village Development Scheme the Police enter villages not with rifles and lathis, but with altogether different armoury consisting of crowbars, pick-axes and spades. They enlist the villager's co-operation in an effort to improve the village and give it a new look. And when their job is finished the village does wear a new look on account of the improvements accomplished in the villages' roads, houses, schools, etc., thanks to their efforts. The work by the police under this scheme presents the policeman in a new role. This article gives the review of work done under the Police Village Development Scheme for the year* 1960.]

Development works were undertaken by the Police in all the districts. except Ramanathapuram, Tirunelveli, Salem and Coimbatore during 1960. The works taken up during 1960 were completed in Chingleput, South Arcot, Thanjavur Kanyakumari and the Nilgiris districts while in other districts the works undertaken will be completed during this year.

The position in respect of the remaining districts is as follows:—

In Chingleput district: In Gourikulam and Jabbarkhan villages, laying of a road (about a furlong) was taken up and completed. Madavakkam village was selected for construction of a Children's Park during 1961.

South Arcot District

In South Arcot district: A six furlong road was completed in Salai Agaram village. Mud road of one mile was completed in two villages viz., Melpathy and Arichanpalayam. Digging of a well and construction of a Children's Park were completed in Kudiraichandal villages.

In Thanjavur district: The laying of a road of about five furlongs was taken up in the Manakudy village and completed.

In Tiruchirappalli district: The formation of a grave road of 2½ furlongs was completed in the Pudur Uthamanur village. The formation of a playground, construction of a community hall and the construction of drainage are in progress and are likely to be completed in 1961.

Madurai District

In Madurai Urban district: The Inspector-General of Police has stated that the construction of a drinking water well, a bath room for ladies a recreation club and a play ground are in progress.

In Madurai North district: The construction of a road deepening of a well and repairs to the parapet wall, construction of a Children's Park, a volley ball court, tree planting and cleaning of the village of Vadugapatty are in progress.

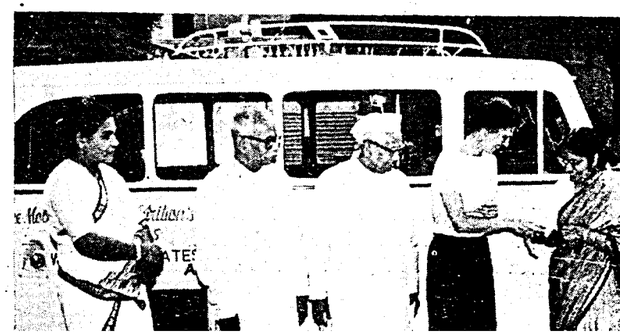
In Ramanathapuram: The Inspector-General of Police has stated that the formation of a road in Chinnedaipathy village of Sattur circle could not be done as the site had not yet been acquired due to the difficulties experienced in obtaining the consent of land owners to part with their lands. The Inspector-General of Police has stated that this work will be taken up, when the consent of all the persons concerned are obtained.

In Kanyakumari district: In Mandarampudur Agatees waram village, the construction of a community hall was taken up and completed from the contributions received from the public.

In North Arcot district: In October 1960, the work of constructing a building under Project Implementation Committee, Vellore, at Nanganadhi was taken up and is in progress.

nI the Nilgiris district: A recreation ground for the children of the Elementary School of Bettala village was taken up and completed.

Srimathi Sakuntala Subramaniam receiving the keys of the Mobile Nutrition Van from Mrs. Galbraith, wife of the American Ambassador to India, presented to the Guild of Service by the Wheat Associates of America for the use of the Mobile Extension Nutrition Programme.



Science in the news

[Everyday that passes in this Age of Science registers some important advance or other as a result of which new and improved techniques and devices emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments. Apart from advances in the Indian scientific field, interesting developments reported from the United Kingdom and the United States are also included]

Researches carried out on forage breeding at the Indian Agricultural Research Institute in recent years have provided information of considerable practical value.

The grasses mainly suited for the arid and semi-arid regions of the country are chiefly under study. In addition, work is also being carried out on cultivated fodder grasses.

By careful selection of Indian as well as foreign material it has been possible to isolate a large number of distinct varieties differing in character; forage yield, leafiness, nutritive value, resistance to heat or cold and seasons of active growth. Differences have also been observed within single species in chromosome numbers and some of these intraspecific chromosome races have shown many desirable features which are considered essential for good strains of forage grasses.

The hybrid Pusa Giant Elephant grass resulting from crossing of Elephant grass with cultivated bajra, it is found, can be propagated vegetatively by means of "slips". It yields twice as much forage as Elephant grass and has high protein content. The leaves are softer and more palatable than Elephant grass. Similarly by crossing an Indian species of anjan grass and related American species, a high yielding hybrid Pusa Giant Anjan has been produced.

Coconut Kernel

In experiments carried out by the Central Coconut Research Station, Kasargod, on steaming husked nuts to facilitate removal of the kernel from the shells it was found that this treatment proved very useful without causing any adverse effect on the copra and its oil content.

Experiments on the effects of temperature, humidity and air velocity on the drying rate of coconuts in the cup form revealed that the drying rate was a factor only of the rate of moisture diffusion to the outer surface and therefore on the temperature of drying. The other two factors apparently have little effect. Flow drier appears to be better suited than the cross flow drier for the drying of coconuts in the cup form. Above an air temperature of 60°C there was a tendency to get charred.

However, it was found that by employing an initial higher temperature at 70°C for the first eight hours and then completing the drying at 60°C it is possible to reduce the total drying time considerably without affecting the quality of the product. The milling quality of mechanically dried copra compared to sundried copra is now being studied at the Research Station.

Bhopal Clay

Investigations conducted at the Central Building Research Institute, Roorkee, indicate that Bhopal clay is suitable for producing a sintered type lightweight aggregate.

Light weight aggregate is used in all types of concrete construction where weight reduction, thermal insulation and fire resistance are desired. Of late, such aggregates are being produced with clay as a binder in place of cement. Also bricks bonded with clay develop, after firing, high compressive strengths and are more economical.

Little attempt has been made so far to exploit Indian clays for making lightweight aggregates. After extensive trials, a process has been developed at the Institute, which eliminates the use of sulphite lye and is applicable to a large number of clays.

Underground water movement

Scientists in Israel have tried out radio-active isotopes for tracing the movement of underground water and assessing underground water resources.

The reservoirs of underground water constitute about two-thirds of Israel's total supply and therefore contribute vitally to the development of Israel's Industry and agriculture. Better than the method of "marking" water with a dye or easily detectable chemical label such as salt or starch for tracing the flow of water below ground, isotope labelling and mapping its movement with Geiger counters proved effective.

Cheap, long life isotopes, non-injurious to the health of animal and plant life, were found to be radio-active iodine, cobalt and iridium charged chemical form.

The negative charge was repelled by the soil generally and therefore stood a far better chance of breaking through the positively charged soil. Small scale tests with radio-active iodine in the Carmel Range were successfully traced to neighbouring boreholes and they established that water tracing by isotopes could be conducted over a considerable distance.

Power from Tides

The ocean wastes 36,000 million kilowatt-hours every day in the tides. This lost energy corresponds approximately to all the power used by the earth's population in twenty-four hours—electrical, mechanical or animal power. Harnessing the sea, is, therefore, a very tempting prospect.

The dreams of the pioneers of tidal power have become a reality, says a UNESCO news report, after twenty years of research and experimentation. The Rance "tidal trap," capable of forcing the sea to lend a few crumbs of its colossal power, will supply an average of 544 million kilowatt-hours per year. The decisive element in this victory of science has been a strange pot-bellied machine weighing eighty-nine tons, with a four-bladed propeller at one end. It resembles a huge airplane engine.

The First Plant

The construction of the world's first tide-driven electric power plant, begun at the end of last year, will be completed in the spring of 1966 at the mouth of the Rance River near St. Malo, in France. It will take six years to close the estuary of this river in Brittany with a dike 2,600 feet (800 meters) long. Then twenty-four turbo-generator sets will go into service. Each of these sets, composed of a generator driven by a turbine in the form of a ship's propeller, will be housedin a submerged water-tight shell. Driven by water flowing at a rate of 635,000 cubic feet per second, this "battery" of turbo-generators will feed 240,000 kilowatts of current into the French power grid, both for industry and domestic purposes. (The kilowatt is a unit of electric power corresponding to 1·36 horse power. As an example, a light bulb can consume 100 watts, or one-tenth of a kilowatt.)

If all goes according to plan, even more daring undertakings will become possible. For example, the huge neighbouring bay of Mont St. Michel could be closed off. Then the sea would provide from ten to fifteen million kilowatts per second that is, fifty to sixty times more than the Rance tidal power plant.

Pitfalls

Astronomists, however, warn us that there may be a few pitfalls on the road to electricity from the sea. Tides are of astronomic origin because they are the result of the influence of the sun and the moon upon our planet. That tidal energy which is going to transform into electricity must be taken from somewhere. It is taken from the kinetic energy of the earth's rotation. The more tidal power plants are built, the more the earth's rotation speed will be slowed up.

This "breaking" will not be very serious. If we harness the equivalent of 1,000 million kilowatts of power, we will end up by losing about ten hours over 2,000 years. We have lost just about this much since the birth of Christ without generating electricity during that time. The energy was simply frittered away in the breakers.

Sulphuric Acid Production

Recent investigations by the Indian Bureau of Mines on the technical and economic aspects of utilizing the pyrite deposits of Amjore in Bihar for the production of sulphuric acid are reported in the July issue of *Research and Industry*, a monthly periodical published by the Council of Scientific and Industrial Research.

In India, almost all the units producing sulphuric acid are based on elemental sulphur which is now entirely imported. The projects for producing sulphur locally assume considerable importance in view of the rapidly mounting requirements of sulphur for the production of sulphuric acid. By 1965–66, it is estimated, India would be importing 400,000 tons of sulphur for production of sulphuric acid.

Studies have shown that the production of elemental sulphur by the Norwegian Orkala process would be economical in India if the pyrite is made available at Rs. 35 per ton.

Another possibility examined is the setting up of pyrite burning units as an adjunct to a steel project. The resulting iron oxide could be utilized for the manufacture of pig iron and steel.

Taking into consideration all factors the study report recommends the installation of chemical plants within a radius of 200 miles from Amjore to derive maximum advantage from the pyrite deposits there.

The Amjore pyrite deposits form the most promising source of sulphur in India. This locality is estimated to have a reserve of about 384 million tons of sulphide ore in an area of 48 square miles. About 78 million tons of these are proved reserves containing on an average 40 per cent sulphur.

Fuel Ash aids Farming

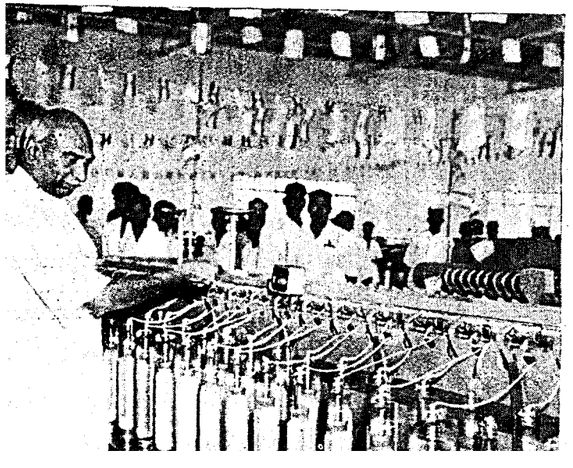
Useless marshes have been successfully reclaimed to form rich pasture land in the United Kingdom by means of fuel ash from a power station.

The cementing properties of pulverized fuel ash from power stations have already been established. The ash is used in a number of ways, including construction material for dams, highway embankments, power-station foundations, and as a "filler" for roads.

One of the latest examples of its versatility is in Flintshire, Wales, where a fertile field has been created from the marshes by means of ash from the nearby Connah Quay power station, which produces some 70,000 tons of fine ash each year. A mixture of water and ash was directed into a lagoon. The water was drained away through filters into the river, and the ash, when it reached the rim of the lagoon, was ready for levelling sowing and cultivation.

The first experimental 40 acres have been used for arable and grazing purposes with conspicuous success. Grass and clover have grown richly and sheep and lambs have thrived on the pasturage. Now cattle are to be introduced. The ground has also yielded good root crops, though so far cereals have not come up to standard. By October another 57 acres will be reclaimed for farmland and a further 70 acres are planned.

Chief Minister Kamaraj switching on one of the units inside the Ramanathapuram Co-operative Spinning Mills, Ltd., Srivilliputtur, recently inaugurated by him.



Apart from land contribution, the scheme, which may be extended to other low-lying ground in Britain near power stations, helps to relieve the ash-disposal problem.

Robot to aid Miner

A robot with its own built-in power supply is being developed as a by-product of fuel research work at Sheffield University.

The robot could be used in working conditions dangerous to man, such as putting out fires in hot smoky conditions or mining and shovelling coal in seams too narrow and deep for miners.

Professor N. W. Thring, head of the Fuel Department at Sheffield University, explained how the robot works. Its course of action is a simple chart which it scans through photo electronic cells and impulses produced and then translated into directions to drive and steer.

Professor Thring said these impulses can also make the robot carry out set tasks at appropriate times with the aid of an electronic memory and to make corrections to the original chart from information gained on the journey.

Exploring Space by Sound

An instrument for the radio exploration of space has been installed on a disused airfield at Defford, Worcestershire, by the Royal Radar Establishment of Britain's Ministry of Civil Aviation.

The instrument is a radiotelescope interferometer—a major addition to Britain's facilities for space research.

The interferometer is an instrument for measuring wavelengths, and the one at Defford will explore space by sound, "listening in" to the stars, the sun, moon, and planets as well as earth satellites and space probes.

The instrument consists of two giant radiotelescopes, each weighing 250 tons, which can be driven along double railway tracks and directed to any part of the sky. The instrument's parabolic reflectors are 82 feet in diameter, made of fine wire mesh, and can be operated over a wide range of radio wave lengths which can track any radio source as it moves across the sky.

D. Napier and Son (a subsidiary of English Electric) and Pan Britannica Industries have developed a new type of aircraft, the Agricultural Gyroplane, for use in crop-spraying operations.

The Gyroplane is a small, light aircraft in the autogyro category, with a rotor like that of a helicopter. The pilot sits in the open, thus having all-round vision, which makes crop-spraying in small fields much simpler. The machine is claimed to be easy to transport and fly and, when necessary, can be repaired under the most primitive conditions.

Pan Britannica Industries is now preparing to undertake operational evaluation of the concept both in static tests and in practical tests on farms. At the same time, both companies are carrying out a comprehensive study of the Gyroplane's operating costs compared with those of a fixed-wing aircraft.

It is believed that the new aircraft will cut operation costs by half. Production on the Gyroplane will, however, not begin until the vehicle's potentialities have been fully analysed.

New Carding Device

A new device that reduces cotton carding waste in textile mills by more than half has been developed by the United States Department of Agriculture's Southern Research and Development Laboratories at New Orleans, Louisiana, called the SSRL Granilar Card, it has already been installed in more than 70 cotton mills. These users report it saves 50 to 60 per cent of fibre normally discarded as waste in the carding operation.

Simple and inexpensive, the Granular Card is a non-moving cover that replaces an elaborate assembly of moving parts—called "flats"—on standard textile carding machines. "Granular" describes the underside surface of the fixed cover that comes into contact with the cotton in the carding process. It weights but 200 pounds compared with the 1,000 pounds of the assembly of flats it replaces and does a better job of "carding" disentangling the fibres before they are spun into yarn. Completely sealed, it eliminates a major source of dust and "fly" found in textile mills. Maintenance is inexpensive, only a single part being subject to wear.

Cotton Fibre Maturity

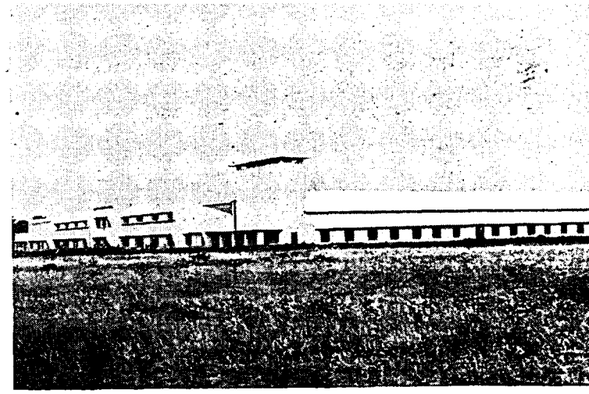
An improved technique for determining maturity of cotton fibres has been developed by United States Department of Agriculture (USDA) scientists. They have proved that an instrument named the Micronaire can be substituted for the present costly, time-consuming tests for measuring the maturity of cotton fibres.

Fibre maturity has an important effect on appearance of yarns and fabrics. Immature fibres aid formation of tiny tangles, fail to accept dyes uniformly, and increase waste.

In USDA tests the Micronaire has accurately measured the rate of air at a given pressure passing through a standard volume of cotton, the finer the fibres the slower the rate of air passage, thus gauging maturity.

Ultrasonic Milk Tester

Three dairy scientists recently invented a device that simultaneously tests milk for butterfat content and for



A view of the Ramanathapuram Co-operative Spinning Mills, Ltd., Srivilliputtur.

percentage of non-fat solids. It was demonstrated at the University of Wisconsin. The instrument, called the Darisonometer by its inventers, measures the fat and solids content of the milk by means of electronics and ultrasonics —sound waves of extremely high frequency, higher than humans can hear.

It works on the principle that sound waves move at different speeds through materials of differing composition—faster through solids than liquids. The instrument measures the speed at which the sound waves move through the milk and the velocity is recorded on dials showing percentage of solids-no-fat and butterfat. The method has been found extremely accurate.

Seasoning of Hardwoods

A new method of drying lumber—called solvent seasoning —may open the way to wider use of the world's hardwoods, according to California timber experts. The method, developed at the University of California's Forest Products Laboratory, has been used successfully to dry tanoak sapwood to ten per cent moisture content in 25 hours with relative freedom from seasoning defects. Normal seasoning by air-drying and kiln-drying methods takes months.

In the new process the green boards are stacked vertically in a vapour-tight extraction chamber and a hot solvent—acetone heated to 130 degrees Fahrenheit—is circulated over the timber by means of a pump at atmospheric pressure. The acetone removes water and chemical extractives as it travels through the boards. By continuous distillation, the acetone is removed from the chamber and then recirculated over the timber after purification.

Killing the Hurricane

The United States has its first hurricane hunter in space—a weather satellite capable of photographing the destructive life of a hurricane from birth to death.

With the unprecedented view provided by a satellite, scientists are hopeful of discovering how hurricanes are born and perhaps eventually a method of dissipating the storms before they pick up force.

If the satellite gives advance warning of the approach of even one otherwise undetected hurricane it could bring about tremendous savings in human life and property that otherwise might be lost.

The new 285-pound weather satellite, Tiros III, rode into space aboard a three-stage Delta rocket fired on July 12 from Cape Canaveral, Floridia.

It was the third in the Tiros (Telivision Infra-Rets Observation Satellite) series of the National Aeronautics and Space Administration (NASA) and the forerunner of, the operational " Nimbus " satellite system scheduled for 1962 and 1963. Several Nimbus satellites will be in orbit simultaneously to provide global weather coverage.

New method Food Freezing

A new method of preserving foods by freezing them at extremely low temperatures has been patented in the United States. Frozen foods packed by this method have already been shipped from New York to such far-distant lands as Japan and Ceylon and have arrived in perfect frigid condition as much as six weeks after the time they were frozen.

The process employed, which is relatively simple, uses liquid nitrogen, which boils at the extremely low temperature of 320 degrees below zero Fahrenheit. Filtering through the wrapping material, the nitrogen evaporates when it touches the relatively warm surfaces of the food. The resulting nitrogen gas drives all the air from the food's airtight container, and the frozen food is then sealed.

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THE DIRECTOR OF INFORMATION AND PUBLICITY

Fort St. George, MADRAS-9.

New Operation to cure Common Deafness

A new cure for the most common kind of deafness has been evolved from techniques developed by a British surgeon working in hospitals in South Yorkshire, England.

Deafness has a variety of causes ranging from ear infection to mechanical damage. Its incidence is world-wide and some 20,000,000 to 30,000,000 people are estimated to be affected.

Otosclerotic deafness is most common, and it is this kind that can be cured completely by operation. This condition is half as common in men as in women, in whom the onset of the disease is often accelerated by pregnancy. It is estimated that there are between 8,000,000 and 10,000,000 cases of otosclerotic deafness in the world (200,000 in Britain), with a large number of undiagnosed cases in India and Africa.

Mr. P. H. Beales, consultant aural surgeon to a group of South Yorkshire hopitals, described in an interview something of the disease and of the success he has been achieving with the operative technique he has evolved to cure the condition.

Operation Technique

Otosclerotic deafness is caused by the random growth of soft bone on and around the innermost sounding-board of the ear, which is ulitimately responsible for transmitting sound vibrations from the eardrum across the tympanic cavity to the nerve complex that feeds the brain. Growth of a soft bone makes this vital structure incapable of responding to, or transmitting, the vibrations it receives.

An operation to cure this condition is carried out under a special microscope that was invented in Britain. It involves moving to one side the eardrum and the bony link in the hearing chain, removing the soft bony deposits and cutting out the defective membranes. New tissue is then fitted by grafting-in a small piece of vein taken from the back of the patient's hand. The hearing chain can then be replaced, usually with a connection made of wire or polythene tube.

In Mr. Beales' technique, to avoid complications that can arise with synthetic materials, a permanent and accident proof contact is made with the tissue by bringing back into contact with it the prongs of the original bony structure.

Mr. Beales has now performed about 100 of these operations on patients selected from the 2,000 or so of these cases existing in his area. So far, 80 per cent of cases treated have recovered their hearing after having been completely deaf.

Radio Pills aid Diagnosis

" Radio Pills ", which are being used for research in hospitals in Sheffield, England, are expected to produce better techniques for early diagnosis of bodily ills, particularly those of the digestive tract.

The pills are a British development of a Swiss idea. They are already in commercial production as tiny cylinders half-an-inch long by a quarter-inch in diameter, but researchers at Sheffield prefer to make their own, and the radio receivers to go with them. The Sheffield pills are the same size as the commercial product, but have pressure-sensitive plates made of silver-plated metal giving be"~ performance than the plastic alternative.

Dr. B. Ross, of the surgery department at the Rc Infirmary, Sheffield, said that using a kind of pill t transmits information on pressure, they have found tha is the stomach which is slow to recover its contract rhythm after abdominal operations. Other parts of canal recover in a much shorter time. As a result, it been possible to devise better feeding arrangments wl bypass the stomach, make the patient more comforta and speed his recovery.

Chief Minister Kamaraj greeting Mr. Galbraith, American Ambass to India, who called on him at the Secretariat during his visi the City recently.



Dr. Ross said that using pills to collect information on pressure rhythms associated with known diseases such as duodenal and stomach ulcers, it is hoped soon, by recognizing characteristic rhythm patterns, to diagnose these diseases more positively.

By developing radio pills capable of transmitting information on temperature or acidity within the body, it should be possible to evolve methods of diagnosis for other ailments. Dr. Ross said they expected to have an acidity-detecting pill in use soon.

Irradiated Syringes

Hypodermic syringes sterilized by exposure to nuclear radiation are being used in a large-scale programme of anti-poliomyelitis injections now being carried out in the Liverpool area.

So far, around 300,000 injections have been administered, and it is anticipated that this month at least as many more will be given. A further similar batch will follow a few months later. The bulk of the syringes used in the programme are radiation-sterilised.

These plastic syringes are made completely germ-free by subjecting them, each in an airtight container, to radiation in a lerge gamma-irradiation unit known as a " package irradiation plant " in the United Kingdom Atomic Energy Authority's research laboratory at Wantage, Berkshire.

Irradiation does not make the syringes radioactive.—Disposable syringes—used once only—avoid cross—infection risks and speed up the rate at which patients can be treated. The syringes are mass-produced, and cost per injection is comparable with injections using traditional syringes which have been cleaned, repacked, and resterilized.

Gamma-radiation sterilization is used because it is highly efficient in destroying germs. It does not affect plastic material because it does not raise the temperature of the irradiated object by more than a few degrees.

Rare Lung operation

A unique operation has saved the life of a woman near death from blood clots in her lungs. The operation, first of its kind reported in the United States, involved surgery to remove the clots while a heart-lung machine took over the work of the patient's heart and lungs.

The life-saving surgery, performed by three Texas doctors, in Houston, required 15 minutes. The woman returned home to her normal household task just two weeks after the operation. An account of the surgery is reported in a recent issue of the Journal of the American Medical Association.

The achievement, the Journal said editorially, " should be considered another milestone in cardiovascular surgery " and the technique " may lead to saving many similar patients who are otherwise doomed to almost certain death. "

In the operation the doctors opened the main pulmonary artery leading to the lungs and withdraw the clots with instruments and suction. They repeatedly collapsed the lungs to remove clots lodged deeply in the smaller branches of the lung's arterial network.

Except for a mild fever the first three days after the operation, the patient convalesced in a " smooth uncomplicated " manner, the doctors said.

Many persons suffering massive blood dots in the lungs die almost instantly, but it is not uncommon for some to survive one or more hours.

The trio of doctors operated on the 37-year old woman 42 hours after an examination showed the clot attack was imminent. The decision to operate was made at midnight. Two hours later the heart-lung machine was readied and hooked up to the woman's lungs and heart, and the operation performed.

Previous attempts to clear up the condition by surgery have been generally unsuccessful, the doctors said. However, they said a successful operation was performed last year on a male patient without use of a heart-lung device. The man's body temperature was lowered with ice packs and his blood circulation halted briefly.

Guanethidine

Successful testing of a new orally administered drug has shown in test studies that it is capable of controlling severe high blood pressure, a group of three American physcian reported in the Journal of the American Medical Association.

The physicians say that the drug, guanethidine, represents a new approach to the treatment of high blood pressure. It differs radically from other drugs now being used for the condition, because it acts on the arteries and veins rather than on the brain and nervous system.

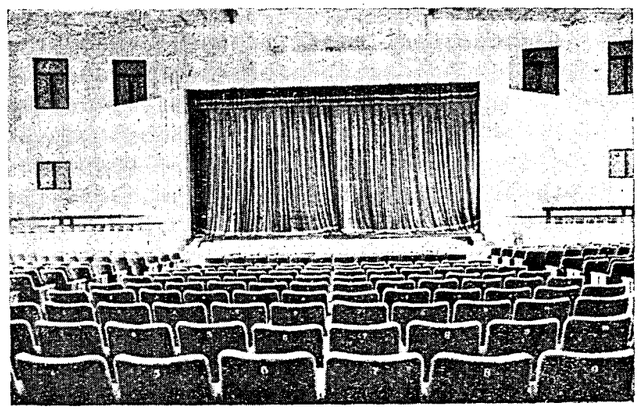
In their test study, the physicians observed 16 patients for periods of one to eight months. Guanethidine gave " good control in fourteen of the patients, with minimal side-effects and no toxic manifestations, " they reported.

Epilepsy Drug

A drug known as Diamox Acetazolamide, long used in treatment of the eye disease glaucoma, appears to be effective against epilepsy, the convulsive nervous disorder that afflicts some 10,000,000 persons around the world. In a five-year study with 178 epileptic children at the Blue Bird Circle Children's Clinic, Houston, Texas, the drug was found considerably to reduce the number and severity of seizures. Researchers suggest that Diamox causes a build-up of carbon dioxide in the brain, thus interfering with nerve impulses in such a way as to reduce convulsions.

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A THEATRE THAT CHILDREN LOVE



The Children's Theatre in the Government Estate, Mount Road, is a place that children love. Every week-end, films that educate children are exhibited here mixed with comic cartoons that delight them.

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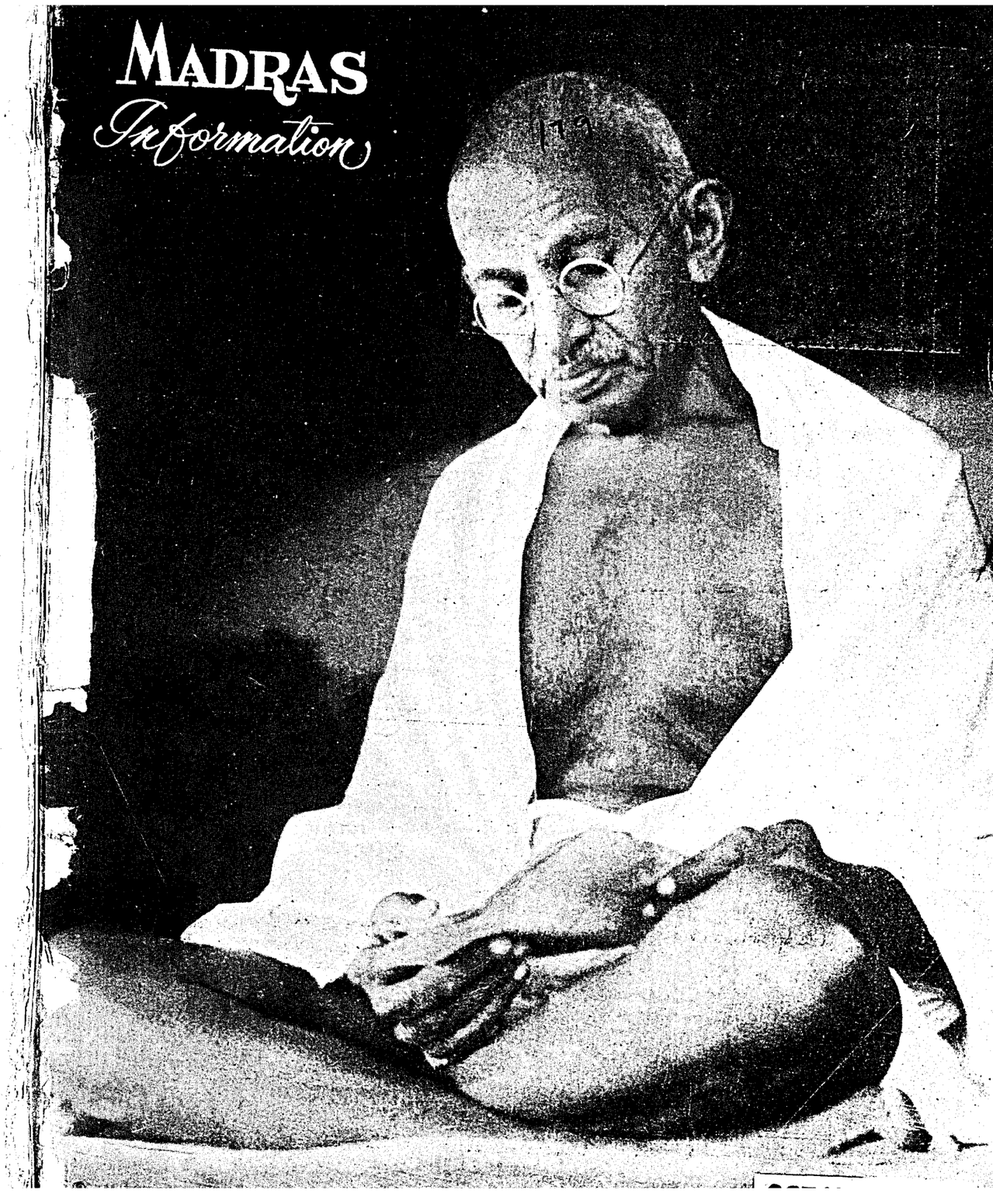
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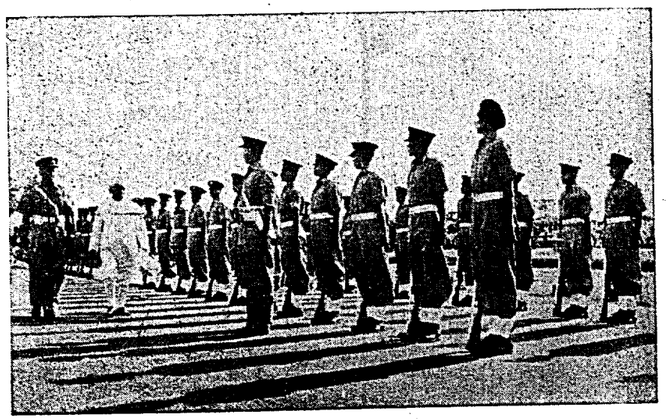
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MADRAS *Information*





Governor Bishnuram Medhi taking the salute at the Guard of Honour presented in front of Fort St. George on Independence Day.



Governor Bishnuram Medhi, Kerala Governor Giri and Chief Minister Kamaraj in happy conversation during the Independence Day Celebrations.



Chief Minister Kamaraj laid the foundation stone for an overbridge in Washermanpet, on the Tiruvottiyur High Road, on Independence Day this year.

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MADRAS INFORMATION

OCTOBER 1961

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This month's cover

October 2 marks Gandhi Jayanthi. Decentralization of power by the vesting of more power in the Panchayat was part of the major ideology of the Father of the Nation. Fittingly enough, on his Anniversary this year, the process begun last year of covering the entire State with panchayat unions is being successfully completed.



HOW MANY GRAMS IS A SEER?

Metric Weights have come into use. Prices are expressed in terms of Metric units. And yet, transactions involve irksome calculations.

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WORKERS' Education



SRI R. VENKATARAMAN, *Minister for Industries.*

The worker is the main instrument through whom the Plan targets have to be achieved. Hence, it is important that workers' education schemes be designed to enable the worker become plan-conscious and productivity-minded. Thus stated Industries Minister Venkataraman in the course of his speech initiating discussion on the problem of "Workers' Education" during the Tenth Annual State Conference of Social Work held recently in the City. This contains the text of the Minister's speech.

Of late the concept of Workers' Education has assumed special significance and importance in all countries. With growing industrialisation and the changing concepts of social justice, the important role played by the worker in the national economy is increasingly realised. Workers' education enables the worker to play this role more effectively and fruitfully. It is only when the worker is enabled to give his best in the cause of industrial development that the social wealth of any country can go up and result in the rise of the standard of living of all, including the workers.

In short, Workers' Education is an investment in human resources. It not only seeks to develop professional skills, but brings enlightenment, broadens the perspective of the worker, leads to better employer—employees relations and results in increased productivity. Illiteracy and ignorance impair the capacity for effective participation in any democratic undertaking. Education makes the worker think independently, face problems boldly and arrive at solutions by himself by proper reasoning instead of through dogmatic approach.

Workers' Education Schemes in India would enable the worker to become plan-conscious and productivity-minded. The worker is the main instrument of the targets of the Plan. He must be made to feel the heavy responsibilities he has to shoulder for making this country an industrially developed one. He must be able to make willing contribution and sacrifices towards increasing the quantum of the National Product, which will in turn maximise the goods and services that all, including the worker, can enjoy.

Workers' Education is a very broad and extensive term and it primarily includes at least 3 or 4 distinct fields, viz., (1) literacy and post-literacy education (2) vocational or technical education, (3) trade union education, education on labour problems and labour legislations and (4) citizenship training.

Thus, Workers' Education is not merely confined to literary education. It is not even industrial relations education or trade union education. It is an all round education aimed at developing an integrated personality in the worker.

Long History

Workers' Education has had a history—nearly of a hundred years. In the United Kingdom the Workers' Education Association is a voluntary organisation which has been offering educational programmes to workers with the assistance of University Lectures, Trade Unionists and with grants from Government. Four resident colleges in Britain offer one and two-year courses for workers and of these Ruskin College at Oxford primarily gives social science background for trade union leaders. Workers' Education Programmes in the United States have received impetus from organised Trade Unions, Universities as well as from the United States Government. The Workers' Education Movement has recorded progress in Canada, Scandinavia, Yugoslavia and other countries.

In India, Workers' Education programmes are conducted by: (1) the Central Board for Workers' Education;

(2) certain voluntary agencies like ICFTU Trade Union College at Calcutta ; (3) a few workers' organisations, and (4) a few State Governments.

Central bo.

The Central Bo... .or Workers' Education is an autonomous body constituted in the Ministry of Labour and Employment, Government of India. The Board consists of representatives of workers, employers, educational bodies and Govern... .

The Workers' Education Scheme of the Central Board envisages three stages of implementation namely, training of a cadre of top-level organisers and field officers known as Teacher-Administrators ; training of selected workers and trade union officials as worker-teachers ; training of workers at Unit level, by the trained worker-teachers.

The Teacher-Administrators are whole-time employees of the Board. On completion of their training, they are posted to different re...onal centres and entrusted with the work of training se...ted workers in whole-time training courses of three months' duration in batches of about 25 persons. The workers so trained are known as " Worker-Teachers." The training is a continuous process, each centre turning about 75 to 100 trained worker-teachers in a year.

The Worker-Teachers, on completion of the training, revert to their own factories or other places of employment and conduct programmes for the rank and file of the workers largely outside the working hours. They are paid a honorarium for their work on behalf of the board. They are actively assisted in their work by the Teacher-Administrators by close supervision, demonstration and advice.

Chief Minister Kamaraj, open...d the Madhar Sangham Building and inaugurated the Police Industrial Co-operative Society during a recent visit to ...uddalore N.T. In the picture, he is seen lighting the ' Kuthuvilakku ' in the Madhar Sangham.



Considering the fact that workers' education is more a Trade Union reponsibility in most of the Western countries, this Scheme has also provided for the Trade Unions to take up these education programmes and rules for sanctioning recurring grants, up to a maximum of 75 per cent of the expenses of Rs. 10,000 on non-capital expenditure have been framed.

It may be of interest to point out that the Central Board for Workers' Education which is an autonomous body constituted by the Ministry of Labour and Employment *more or less on the model suggested by the Indian Conference of Social Work in* 1957 *has opened* 12 *regional centres*, each one under the charge of a Regional Administrative Officer. Some regional centres have opened sub-regional centres for catering for particular areas. In Madras region also it is proposed to open a temporary sub-regional centre at Coimbatore shortly. In some places residential centres have also been opened. Workers belonging to different factories and different towns are brought together and made to live together. A part of their expenditure on boarding and lodging is met by the Board.

Training Programme

Till the end of July 1961, some 1,172 worker-teachers and 10,928 workers have been trained, in India. The Madras Centre has completed two courses of worker-teachers training of three months' duration, and the third course is in progress. Fifty workers drawn from 40 different establishments from both private and public sectors have already been trained and 27 are under training. The trained workers have reverted to their own factories and they have started 25 unit level classes, covering roughly 600 workers.

It would be seen that workers' education should help to arouse curiosity in the worker and quicken in him the process of learning so that he would be enabled to appreciate his responsibilities and relate his duties, hopes and fears to the larger task of national development that is in progress. Again, it will be necessary that adequate literature should be produced so that the workers may have the right type of material for study. While a general programme of workers' education should cover workers in a big way and as rapidly as possible, there would be need to explore the desirability of evolving special programmes which would cater for the special needs of certain sections, i.e., advanced courses for trade unionists.

Curriculum

The curriculum includes Plans and the role of labour in the Plans, Productivity, Industrial Relations, Labour Legislation, Wages, History of Trade Unionism in India and foreign countries, Trade Union Philosophy, Discipline and Co-operative movement, etc. Instead of the traditional lecture method only, active teaching methods are adopted and the student is made to fully participate in the class. Two-way communication method is adopted. Every lecture is followed by a group discussion on the subject where the students discuss their view points and have their doubts cleared. Qualities of leadership are also developed by making one among the group the leader to control and conduct the discussion on right lines. Seminars and debates also form a very important part.

Role playing is also used as an aid. In role playing the participants are given the details of a situation. They are then allotted parts and given some general guidance but the actual words spoken are usually extemporised. The role players then act out the situation and finally they and the audience discuss the play and the problems it raises.

Field work, study visits to various factories and trade union offices, screening of films bearing on labour problems, charts, etc., are used as instruments for direct observation of actualities and they add greatly to the studies which might otherwise be too academic. In these visits to the various factories the workers see for themselves various new things being created by their co-workers and this enables them to take legitimate pride in themselves. Similarly films make a deep impression on their minds and direct observation of conditions existing in other parts of the world or other States make them feel that they must also come up in life. These aids are all the more useful in the case of illiterate workers.

Creative Education

The methodology of Creative Education propounded by Dr. Miss Payne has also been integrated in the scheme. This is on the simple premise that man is basically good. Lack of proper communication is the cause of tension in the world and only by originating properly with affinity and understanding the reality of the situation, communication can be effective.

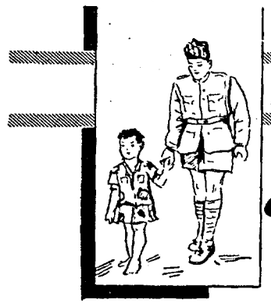
The ICFTU Asian Trade Union College run at Calcutta, the Workers' Education Association formed at Bombay and the Workers' Training College at Indore arrange courses on Trade Unions, Industrial Relations, Law, etc., for Trade Union Workers. The Uttar Pradesh Government organized a special short-term course for Trade Union representatives in 1957.

I am sure that the participants in this discussion would bring to bear their knowledge and experience to the discussion and help formulate constructive suggestions for promoting Workers' Education. They will no doubt also indicate the lines on which in their view, it should develop and the manner in which the enthusiasm of trade unions, employers and others concerned could be generated and canalised.

Employees' State Insurance Medical Benefit to families

Medical benefit under the Employees' State Insurance Scheme has been extended to the families of insured persons in Salem, Tiruppur and Udumalpet areas with effect from September 2, 1961, covering about 16,390 family units. Medical benefit has already been extended to the families of insured persons in Tiruchirappalli, Cauverynagar, Dalmiapuram, Rajapalayam, Sivakasi and Ranipet from August 15, 1961. With the extension of medical care to families of insured persons in all these areas, about 33,240 family units will be benefited.

The Government of Madras have made arrangements for the administration of medical care to families in these areas. The family of an insured person, consisting of the spouse, minor legitimate and adopted children dependant on the insured person and the dependant parents, if the insured person is a male, will be entitled to all the medical benefits on the same scale as the insured person except hospitalisation.



POLICE AS guardian of youth

SRI F. V. ARUL, *Deputy Inspector-General of Police.*

The Police department should, in its essence, function as a social service organization and a great deal of stress should be laid on its responsibility as guardian of the juvenile. This was an aspect of police duty on which Sri F. V. Arul, Deputy Inspector-General of Police, dwelt at length while presenting a paper at a sectional meeting of the Tenth Annual State Conference of Social Work held in the City recently. This article contains the substance of the "Paper".

The Police philosophy is a positive one of aiding and assisting all instead of a negative one of repression and prosecution. Unfortunately, to many people, the word 'Police' is almost synonymous with suppression. The general public pictures the policemen as a guardian of the law relentessly pursuing law breakers with a view to bringing them to book. This stern and negative concept has been reproduced by the Press, the cinema and in literature. Of course, it is the duty of the Police to see that offenders are punished but it is no less their duty to attempt to prevent people from becoming offenders. It is inconceivable that one should have curative without preventive medicine. Prevention and cure are two aspects of the same problem.

There are other reasons for extending the action of the police to that of prevention. To begin with, prevention is far cheaper than suppression and its consequences. For instance, one may take the common example of the into: cated man leaving a tincture shop. The Police Offi who gets a bit curious about the man and escorts h home in order to see the sort of home life he leads bef taking action for prosecution will have done his towards the welfare of the community as a whole. this simple act he may prevent possible tragedy, sufferi ill-treatment, or perhaps even the break up of a hon Many examples could be given. But that is not all.

The other Being

In every policeman, there is another being which is v human. If a policeman is kept constantly at suppress work, it is a waste of his humanity. His field of activit should be widened so that his best instincts are utili which in turn will bring him inner satisfaction. performance of protective work by the police improve its relations with the public. The public impressed with the work of the police in the field of r safety. This type of service should be extended to ot fields of poilce work so that the people may gradu understand the police and not remember it only from point of view of its unpleasant aspects.

The Police department should, in its essence be a so service organisation and a great deal of stress should laid on the social service which it renders to youth. period of adolescence between school leaving age and time when a young person settles down as a respons citizen is a critical period of his life. It is then that cha ter building, physical training and other aspects of heal manhood must be cared for.

Industries Minister Venkataraman, declared open the Seva Sangham Girls' Training Institute and Hostel at Gandhinagar recently.



The street has always been a favourite playground of children of all ages. This is natural. The lack of play fields due to speculation in building sites in all urban areas inevitably drives the children into the streets. They know that they will find their friends there, freedom to move about and things and people to see, as the street is the gateway to independence and the mirror of life.

But the mirror is two-sided. After dark, the road assumes a different aspect. Trouble and temptation lie in wait for the unwary. The trouble lies in the fact that many of these young persons are not only under no restraint but are vulnerable to the group psychology of the 'gang'. Therefore, both the police and social service agencies have the duty to increase their protection of youth and thus safeguard their future. This is in keeping with the declaration of the rights of children drawn up by the United Nations, which says that children should be able to develop in a normal and healthy fashion physically, intellectually, morally, spiritually, and socially, in liberty and dignity and that they should be able to grow up in an affectionate and understanding family atmosphere which favours the harmonious development of their personality.

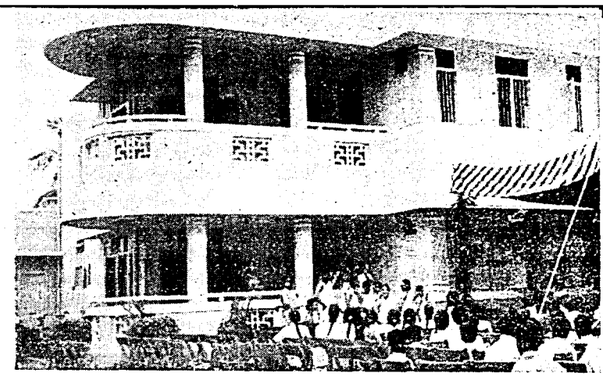
Boys' Clubs

In the field of social service to youth by way of protection, the police officer holds a privileged position. Walking the streets both day and night, the arbiter and judge of dozens of incidents each day he is excellently situated to intervene at the first signs of juvenile maladjustment or any threat to their best interests. One of the characters in a recent book says, "I became a policeman so that I could be in the midst of life". Occupying such a vantage position, the policeman must raise barriers between predisposition and opportunity, which will have the two-fold action of "cleaning up" the roads and public places and safeguarding young persons in danger.

One positive measure of social service which the Police could render to youth is the organisation of Boys Clubs. As a matter of fact, this has been done not only in Madras City but in all the districts of the State. The basic principle underlying the conduct of such clubs is that the moral sense of children is naturally and inherently good and all that it needs is the opportunity for growth and development.

Freedom the Principle

The Boys Club, therefore, provides recreation as an attractive alternative to the street corner. It provides a building of some sort where young persons will find space, light, a variety of equipment and possiblities for new activities which their own poor homes can never provide. The principle followed in these police Boys Clubs is freedom from compulsion. Unless one wishes to rear a race incapable of exercising its freedom, always awaiting orders from some higher authority, one must preserve



A view of the Seva Sangham Girls' Training Institute at Gandhinagar.

a part of life in which youth is offered the widest possible variety of freely chosen occupations. There are obvious attractions about compulsions; it would bring even the most unwilling within the range of beneficial activities. But the price would be the loss of that freedom to choose for oneself which should be allowed to be cultivated even from the years of adolescence.

Second only to freedom from compulsion is variety of interest. It is important to remember that there are more differences of temperment and interest in young people between the ages of 14 and 18 than in younger children or in older men or women. No social service for youth can be fit for a democratic society which does not admit of a variety of forms of expression. Muddle is bad but utter neatness is a deadly peril. It should be the aim of every youth organisation to encourage that rich variety which flows from diverse personalities for such variety is the substance of true life.

Overcoming Prejudice

Membership of all police Boys Clubs is free. The only condition which is imposed is a pledge on the following lines. "I promise that I will endeavour to be honest, straight forward and manly in my daily life and that I will do all that I can to promote the best interests of the Club".

Leadership comes naturally to the police officer as he is accustomed to accepting responsibility and is usually a good organiser. He is familiar with the seamy side of life and so there is tolerance in his make-up. Boys are inclined to think of the police as hostile to the spirit of youth a sort of spoil-sport. There is a sense of antagonism, a feeling that the police exist to suppress them and that therefore they should bait them. The Boys Club sponsored by the police help overcome such prejudices and aid winning over an important element of the population to the side of law and order.



Home Minister Bhakthavatsalam,- addressing the Agricultural Development Conference held in the City recently at the Information Centre.

One must guard against the youth attending these Clubs being " preached at ", for nothing sets up in youth a mood of antagonism sooner than the suspicion that they are being got at for the purpose of moral improvement and that what is being done for their recreation is only a device for such purpose. What must be realised from the beginning is the importance of really and genuinely keeping the idea of " moral uplift " out of the club. The aim, instead, should be to encourage youth to cultivate activities for their own value.

One other way in which the police can render social service to youth is by constituting a specialised unit for dealing with wayward youth. The nucleus of such a specialised unit has been recently set up in Madras City. Members of such a unit should be chosen from amongst serving officers and their choice should be governed not only by the interest in the work and special abilities which they have shown during their careers but by their psychological make-up, moral outlook and balance.

To avoid the possibility of mistake, it would appear essential that candidates should have to pass an aptitude examination and a psychological examination. Youth in danger and delinquents are not like other children. The knowledge of their problems and education is a science in itself, built up slowly with the help of criminology, psychology and sociology. The solution would be to have the candidates for such specialised police units to be taught at an institute of criminology.

Specialised duties

Generally speaking, the duties of Juvenile Aid Police Units are the following :—They will take charge of all juveniles and first offenders immediately after arrest and cause their production in court or the institution to which they are committed; will maintain contact with the Approved and Borstal Schools and Probation Officers to keep track of offenders who continue to retain their criminal propensities, and advise the regular police on action in respect of those who revert or are likely to revert to crime ; will participate in or organize measures to counter criminal influences in high delinquency areas of cities and towns by promoting development activities, recreational facilities, boys clubs, and other youth activities and by advising the regular police on action against corrupting influences in these areas ; will enforce the provisions of the Reformatory Schools Act, Borstal Schools Act, Probation of Offenders Act and Children's Act, in respect of juveniles and first offenders, and in respect of erring parents or guardians who are liable for the acts of such juveniles or offenders and will conduct cases against juveniles in the Juvenile Courts and assist the Juvenile Courts in their work.

Women Police

The association of women police with such specialised units will be extremely helpful. The variety of tasks and duties of a Junvenile Aid Police Unit requires both male and female members. It is perfectly in keeping with woman's nature to perform duties essentially protective in which she can use both her heart and her knowledge of social work.

In a system where all juvenile cases are handed over to the specialised unit, it might appear tempting at first sight to relieve all other departments of police of any responsibility for protective work in relation to youth. This will be tantamount to over-simplification of matters. The Juvenile Aid Police Unit has neither a de facto nor de jure monopoly of juvenile cases. The general police will more often than not find themselves confronted with situations in which they become immediately responsible for children. In such situations they cannot shirk their responsibilities. The protection of youth is every police man's business before it becomes the business of some specialised unit of the police.

Another Way

Another way in which the police of the State has sought to render social service to youth is by organising schools for children. Recently, in one district, such a school was raised to the standard of a High School. Free mid-day meals are being provided in these schools for all the children. It is easy to imagine these tiny-tots growing into manhood and womanhood retaining a lasting affection for the police, for it is the wise, sympathetic and understanding policeman who is the true friend of all youth. The humble work, which he does, is of vital importance in containing a form of social malaise which is constantly increasing. The greater application to it will result in greater social service to a vital segment of society.

Increasing Productivity

Role of Technical Training

In this article presented in connection with Technical Training Week observed recently, the author Dr. Nabagopal Das, Director-General, Employers' Federation of India, emphasises that technical training not only increases the efficiency of the worker but also accelerates economic development.

The most crying problem in industry to-day is how to increase productivity. While industrial production has registered a spectacular increase over the past ten years (the index shot up from 100 in 1951 to 137·3 in 1957 and to 169·2 in 1960), the same cannot be said of productivity. No doubt productivity also has increased (according to a survey made by the *Eastern Economist* productivity increased from 114·2 in 1951 to 131·7 in 1957), but as the figures themselves show, the rise in productivity has not been commensurate with the rise in production.

It must be emphasised at the very outset that the worker is not a complete master of his productivity. The tools and machines used, the techniques followed, the nature of the raw materials consumed and the technical organisation of the factory where the works have, in most cases, more influence on productivity than the physical or mental efforts the worker makes. A distinction should also be made between machine-paced and man-paced work. When there is an automatic machine, productivity or even efficiency is controlled more by the machine than by the man. Negatively, increase in productivity should not always be identified with harder work on the part of labour, nor decrease in productivity with slackness.

The Factors

What are the factors which affect the productivity of labour? These may be classified broadly under three heads :

(*a*) General factors, (*b*) technical factors and (*c*) human factors. Under " general factors " would come items like climate, geographical distribution of raw materials, organisation of the labour market, degree of unemployment, labour shortages and labour turnover. " Technical factors " will include standardisation of work and material, wear and tear of machinery, quality and amount of machinery available, distribution of labour as between different operations, degree of integration within the factory, and control over raw material. Equally important are the human factors ", such as labour management relations, social and psychological conditions of work, wage incentives, physical fatigue and the technical aptitude of the labour force.

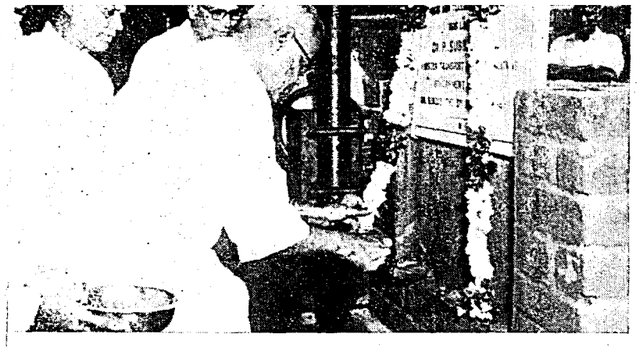
It is this last item in the third set of factors which is being underlined in the ensuing National Technical Training Week. If the efforts made in our country during the past decade have not raised industrial productivity to the extent desired, part of the failure must be attributed to the shortage of technically proficient personnel.

Efficiency increased

When we speak of technically proficient personnel, we refer to men (and women) at all levels—those who plan, organise and supervise production as well as those who fall within the category of workmen. While technical education at the former level can help to redress shortcomings in the organisation of production, training at the lower level increases the efficiency of the worker. Increased productivity through the application of new methods of production can be achieved only if workers at the lower level also are adequately equipped in technological and organisational methods.

Finance Minister Subramaniam, handing over the Souvenir brought out in connection with the release of the 1008th publication of the Saiva Siddhanta Works Publishing Society to Sri T. P. Meenakshisundaranar, who presided over the function.





Dr. P. Subbaroyan, laid the foundation stone for the Post and Telegraphs Staff Colony at Teynampet during his recent visit to the City.

Experience has shown that, if new methods of production are applied in the absence of adequate technically trained personnel, productivity does not increase, because of the poor operation and maintenance of machines, the limited exploitation of basic resources, etc. In some underdeveloped countries, the overstressing of capital shortage has led to the neglect of technical training and education, with the result that economic development has not proceeded at the pace at which it should have done.

Many Steps

It is fortunate that in India at least, the importance of technical training for the personnel engaged in industry has not been lost sight of. Technical education was assigned an important place in both the First and Second Five-Year Plans and the Draft outline of the Third Plan has re-emphasised that "the assessment of manpower requirements and the training of technical personnel are among the basic conditions for economic development". Many steps have been taken to expand the facilities for training the large number of technical personnel required for industry. There has been considerable progress, during the past ten years, both in the number of technical institutions and in the out-turn of qualified technicians, as would be evident from the following table:—

	1950	1955	1960
Number of Engineering Colleges and Polytechnics.	135	179	294
Annual out-turn ..	4,676	8,516	15,707

There has been a similar increase in the number of institutions and annual out-turn, in the category of junior technical schools, vocational training institutions and schools for various arts and crafts.

Bearing in mind the increased tempo of economic development during 1961–62, the Planning Commission has assessed the requirements of technical personnel during the Third Plan period as follows: degree holders, 45,500; diploma holders, 80,000; craftsmen for engineering trades, 750,000; craftsmen for non-engineering trades, 350,000. Corresponding programmes at various levels have also been drawn up to meet these large requirements.

These are steps in the right direction. Even so, the percentage expenditure on technical education in relation to total expenditure on education will be much lower than in the developed countries of the West. Secondary classical schools and colleges outnumber technical schools and colleges by at least 5 to 1—a figure which provides a sad contrast to the state of affairs prevalent in the European countries.

One way in which the gap can be bridged is by industrialists expanding and developing their apprenticeship training programmes. At present, most of them train young men for their individual requirements only. It would be desirable and necessary for them to take a broader view of the country's needs and organise apprenticeship training schemes for others as well. As far as small units are concerned, they can form group schemes as in the U.K. and thus help increase the supply of technical personnel.

A word of Caution

A word of caution may be uttered at this stage. While expansion of facilities for technical training is most welcome, the quality of training must not be watered down. It has been the general experience of many employers that the technically qualified persons coming out of the colleges and other institutions to-day are not up to the mark. The reasons for this state of affairs should be investigated and appropriate steps taken at least to arrest further deterioration. For example, adequate economic and social incentives must be offered to the teachers in technical institutions. Money should be spent on expanding and improving existing well-established institutions rather than on setting up a large number of poorly equipped and badly staffed new institutions.

The point that requires emphasis is that technical training not merely increases the efficiency of the worker, but also accelerates economic development. On the one hand, the stepping up of productivity enables the worker to earn more and spend more. On the other hand it increases the resources of industry and enables more of such resources to be set apart for further development.

Can the expert administer?



Top management is important and competent men should be put in charge and this includes the specialist also. Classifying the administrator broadly as specialists and lay administrators and then posing the question whether the expert should be allowed to occupy the highest position in administration is not quite the correct way of looking at the problem. Thus declares Professor M. S. Thacker whose interesting talk "The Expert—on top or on Tap" recently broadcast by All-India Radio is reproduced in this article.

Administration is a wide term covering a variety of jobs which require expert knowledge and skills in several different fields of human activity. The bank manager, the head of a commercial firm, the chief of an industrial establishment, the boss of a research organisation, the secretary of a government ministry—all are administrators, but the experience and equipment required for each one of these positions is different and the field of work of each distinct and separate from those of others.

There was a time when anyone with a certain amount of general education and a fund of common sense could take on any job in administration, but the days of such naive simplification are gone. The business of government and industrial and commercial enterprise are so diversified, that for each type of administrative job a person must have, special talent and aptitude and some specialised knowledge of the techniques and processes involved in his field of work.

The amount of expert knowledge required varies from job to job. For some, say, like the manager of a mine, specialised technical knowledge of the particular field and skill need to be acquired over a long period. For others, a person intelligent and possessing common sense, can acquire the required specialised knowledge while on the job itself. Some large commercial houses select young graduates of promise fresh from universities for positions of executive responsibility. Governments select young men on the basis of various competitive examinations. These young men acquire knowledge and skills of administration in the organisations.

No one will dispute the need for experts in most organisations. A research organisation might need a legal adviser; a production unit must have the services of a cost accountant. The functions of such experts are advisory. Experts required for giving advise on matters arising incidentally out of the activities of an organisation would function only in that capacity. But the man at the top in a research organisation will be a scientist; in production an expert in that field.

Competent men

With the broadening and diversification of functions, one might be tempted to classify administrators broadly, as specialists and lay administrators. The top position in an organisation, say, an industrial concern, is occupied sometimes by a general administrator; sometimes by a specialist. This sometimes creates a flutter "Eyebrows are raised". And the question is aked. "Should the expert be on top or on tap? Should he be allowed to occupy the highest position of administration and direct the day-to-day affairs and determine matters of policy? Or, should he be subordinate to the general administrator, tendering advise whenever called on to do so and keeping merely an alert watch the rest of the time? Would it not be enough if the expert is consulted occasionally on specific points?"

When the question is posed in this way, one might get the impression that we have two distinct groups of men to choose from for top management positions. That, however, would not be the correct way of looking at the

Incidentally, it is often said that we are faced with a serious shortage of specialists and therefore they should not be 'wasted' on managerial or administrative work. Is there not a shortage of competent administrators also? The point is if top management is considered important, and if so, let us put competent men in charge (whether they be specialists or otherwise).

Various public services such as police and revenue collection have naturally to be manned by members of the relevant services. In specialised organisations, such as research laboratories, the expert has to assume the responsibilities of management. So would be the case in regard to highly technical departments dealing with design and development. In between, there are a number of other services or organisations where administrative responsibilities and expert knowledge and experience of particular fields are closely interlinked.

While there are instances where the expert obviously must be on 'top', there are instances where he has to be content with being on 'tap'. The problem arises where a choice lies between a lay administrator and an expert. The top position in a modern industrial undertaking can be taken as an example.

Qualities needed

To deal with this what might appear as a vexed question, one must have a clear idea of the qualities required of the person for these positions. In addition to specialised knowledge and skill, the head of an organisation has to have certain other qualities. He should be a good judge of men with a broad understanding of their motives and urges, a leader who will not only be followed by his men but who can spur them to action with ethusiasm and zeal. He must be endowed with a flair for organisation and in times of crises, he must have the capacity to rise to the occasion and take bold decisions. Above all, he must have robust common sense which will carry him through periods of stress and strain. The most successful administrators are these who are blessed with these qualities in abundance.

If one objectively analyses these qualities, two facts emerge. Some may possess these qualities innate in them but there is nothing to prevent a capable person from acquiring them gradually in the school of experience. They are not the special monopoly of the lay administrator. The expert or specialist may also be born with such qualities or acquire them. In fact, the expert, through the disciplining of his mind is in a better position acquire them, if he does not already possess them.

The general impression, fallacious though, is that a specialist takes a lopsided view of things, that his mind is so much preoccupied with his own field of interest that he is not able to view ideas, events and men in their proper perspective. This is true not only of some specialists but also of some non-specialists. It is not characteristic of any one class of persons. The history of recent progress is replete with instances of experts, who have proved to be efficient organisers and administrators.

Whether a specialist makes a successful administrator or not depends on two factors, on his ability as an expert and on his qualities as a leader of men. The fact that a particular specialist has failed as an administrator cannot be held to prove any point.

A Classic Conflict

Here it would be relevant to refer to the conflict between two well-known personalities who were as great in administration as in science, Sir Henry Tizard and F. A. Lindemann, who later became Lord Cherwell. C. P. Snow has given a picturesque description of the personal differences between these two at a critical period of British history. Sir Henry Tizard started his career as a research scientist, taught at Oxford, and eventually became a top level scientific administrator in the Government with power and influence in determining national policies.

At the beginning of World War II, Tizard was asked to prepare a defence plan against aerial bombing; the Air Ministry set up a committee for the Scientific Survey of Air Defence with Tizard as Chairman. Tizard realised with characteristic foresight, backed by his expert knowledge, that the only hope of saving England was to support fully the development of what later came to be known as Radar. It redounds to the credit of Tizard, that he succeeded in making the Defence Services accept it in all faith and sincerity. Within a very short time, the Tizard Committee was asking for millions of pounds for Radar, and getting them without the batting of any eye.

ndustries Minister Venkataraman, addressing the Fourth Conference on Industrial Housing held recently at Rajaji Hall.



But in this affair, Tizard incurred the severe wrath of indemann. Like Tizard, Lindemann had started his career s a scientist, taught for a while at Oxford and then finally oved away from science. Very soon he became a trusted iend of Winston Churchill and strongly opposed Tizard's lan to develop Radar.

he lesson

On a later occasion, however, Tizard was not able to arry his point. Lindemann, despite the opposition of izard, made the British Government accept his plan of rategic bombing of German working class houses. His laim was that given a total concentration of effort, it ould be possible to destroy 50 per cent of the houses in ll the larger towns of Germany. Tizard was overruled nd strategic bombing was carried out with all the strength he country could muster. The final result proved it mistake; Lindemann's estimate had been ten times oo high.

The story of the conflict between these two great personalities exemplifies the qualities which a successful expert on op should have and the pitfalls he should avoid. Whereas izard backed Radar on solid technical grounds as the only olution for England in her hour of crisis, the strategic ombing as suggested by Lindemann was a wasteful effort; ie was being swayed by personal prejudices and differences.

We live in an age of experts and specialists. There is no organisation today which can do without experts, if it is to be progressive and dynamic. In some organisations it is necessary to have the expert on top; in others, he may be there to tender or render advice.

Scientific research and highly technical organisations would need the services of specialists on top. Yet another example is the Military Organisation of a country. While broad questions of defence policy are decided by Government the execution of these policies that involve vast administrative responsibilities has to be carried out by the Service Chiefs.

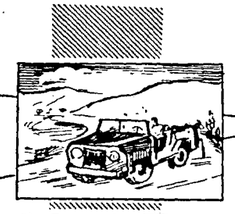
One hears that a general administrator is free from temperamental characteristics one meets with in specialists or learned persons. It is also said that a general administrator thinks of short term solutions; an expert, on the other hand, because of his professional equipment and knowledge is able to look beyond the present, and has a foresight of what the future holds. These are points of view which often are overstated because of prejudices or the coveted authority that goes with a top position? I would not dilate on this. But, a fact one must accept is that the expert and the administrator must learn to have a healthy respect for each other's role. Without this mutual regard, there is bound to be tension between the two groups resulting in the weakening of the organisation.

Developing subsidiary food products

The Union Government has drawn up several programmes for the development of subsidiary, supplementary and diversified food products. These schemes envisage the promotion of diversification of the average Indian diet in order to improve its nutritional content. The aim was not only to use the natural foodstuffs available but also other nutritious foods derived from raw materials which had hitherto not adequately been used, and foods saved from wastage by means of processing and preservation. The proposals also include a campaign to promote suitable dietary habits, avoidance of waste and popularization of balanced-diets.

In the Third Five-Year Plan, it was proposed mainly to undertake the setting up of plants for the production of edible groundnut flour and the Indian Multipurpose Food, the dissemination of information regarding the techniques (both industrial and home-scale) of preservation, dehydration, etc., of perishable foods and the setting up of demonstration units in this connection and the propagation of improved techniques for the par-boiling of rice.

Combating emergencies IS AN ART



Emergency relief measures cannot always be provided with the best of equipment and situations may arise when rescue operations will have to be conducted with the aid of make-shift substitutes that are readily available. The trainees at the Central Emergency Relief Training Institute at Nagpur receive both theoretical and practical instruction in the novel art of combating emergencies. This article gives an account of the Institute and its work.

In a vast country like India, calamities may and do occur in widely separated areas, and *ad hoc* relief measures arranged at short notice are not always efficient or adequate. To station a permanent emergency relief machinery at every place is neither expedient nor desirable. The need was, therefore, increasingly felt to have a standing countrywide organisation which could render emergency relief promptly and efficiently according to a pre-arranged plan based on a proper appraisal of needs and resources.

In April 1956, the Union Home Minister announced in Parliament the proposal to set up an Institute with the object of having "a trained set of people who will minister to the needs of men and women in the hour of trail". The Central Emergency Relief Training Institute was started a year later in Nagpur.

Queer Spectacle

The Nagpur Institute presents a queer spectacle to the onlooker. In the stretch of land facing the Institute, there are jeep trailers loaded with a mechanised boat and a couple of ordinary oar-boats, a variety of improved floats made out of rubber jackets, charpai cots, empty kerosene tins and motor tyres. Call it the art of improvisation, but this is what the trainees are supposed to master. In an emergency, every equipment may or may not be available; it is the art of improvisation that must prove equal to the challenge. The trainees study here rescue operations with the best of equipments and also take lessons in improvising substitutes from out of readily available common material.

Till July 22nd 1961, the Institute trained and fanned out all over the country a reserve force of 1,250 trainees. These include young I.A.S. and I.P.S. officers, Deputy Collectors, Sub-Divisional Officers, Block Development Officers, school and college teachers, home guards and representatives of well-known social organisations.

No Rigid Formula

Ten miles away at Kamptee, the N.C.C. Officers Training School trains batch by batch teachers and lecturers drawn from all the States in the country. These pre-commission course officer cadets are given five days' intensive training in emergency relief. About 1,500 N.C.C. officers have had the benefit of this training so far.

The Institute is there to train administrators, planners and instructors—three categories—in the technique of emergency relief. The reason is obvious. Natural calamities differ in nature and magnitude. As such, there cannot be a rigid formula of action. The trained imagination of the man on-the-spot can and should prove equal to all emergencies.

The Institute, through training of imagination and practical lessons, helps him to achieve the maximum results with the available material in the shortest possible time. For this reason, the class of administrators is the first to be trained. Then come police, home guards, N.C.C. officers, school teachers, college lecturers and social workers.

The Emergency Man

The Emergency Man has to make himself the best planner. He must foresee and forestall. He must assess in normal times the type and magnitude of various calamities which could possibly come to his town, district or State. He must know the danger zones, their stretching expanse and also the safety spots and secure places.

The quickness of his action and its ultimate success depend upon his thorough knowledge of the part where he could be required to act. Left to his administrative skill, he can determine the number of vehicles required to fight the calamity by way of warning-publicity, evacuation, transport and rescue and the ways and means of commissioning that number at once. In this encounter with emergency, he must overcome panic and confusion. The publicity machinery is, therefore, the first to be mobilised; then goes into action his army of civilians. The next and final phase of the drama is emergency relief operations.

Relief Measures

Though calamities differ in type and magnitude, they have good many features in common. The relief measures have, therefore, to conform to a pre-determined pattern. These include rescue of casualities, repairs to buildings and other structures and salvage of property, debris clearance, restoration of essential services, removal of the affected persons to safer zones, traffic control, emergency feeding, sheltering and clothing of the destitute and the homeless, provision of essential supplies and water, first-aid and medical attention, emergency sanitation, prevention of epidemics, care of animals, identification and disposal of the dead and, above everything, prevention of confusion.

The Institute imparts theoretical and practical knowledge in all these specialised subjects. The complete story of the achievement of the trainees in the widespread floods of this year is still to unfold itself. But the Institute today is more determined than ever before to attain a greater perfection in its science.

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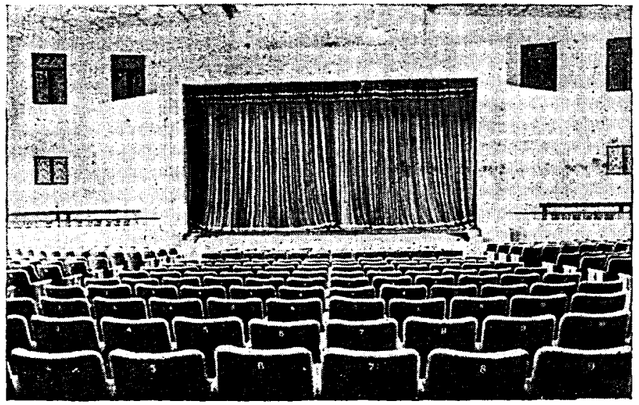
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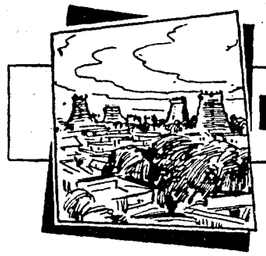
A THEATRE THAT CHILDREN LOVE



The Children's Theatre in the Government Estate, Mount Road, is a place that children love. Every week-end, films that educate children are exhibited here mixed with comic cartoons that delight them.

It is a joy to watch their innocent faces aglow with pleasure after enjoying the shows at this luxury theatre.

Hundreds of children attend the shows at this theatre and have a happy time. Why not send your children too ?



IN AND AROUND MADURAI

SRI S. NATARAJAN

Madurai is one of the few Indian Cities which have maintained intact the links with the past. There is no other place in South India where the visiting foreigner, anxious to have an insight into the religious life and traditions of the Hindus, would be so well rewarded.

Centrally situated, Madurai is the second biggest City in Tamilnad. This ancient City, unlike other Indian cities, has survived the ravages of time and has escaped spoilation at the hands of the Moslem invaders. It has been for the last two thousand years the focal centre of Dravidian culture and civilisation. European scholars refer to Madurai as the Athens of South India. History reveals that Madurai had commercial dealings with Babylon, Greece and Egypt.

As the seat of the Tamil Sangam, it attracted all the scholars of the South. Famous Tamil poets yearned for recognition from the Madurai Tamil Sangam and were not satisfied until their works had obtained the hall-mark of this academy.

The history of Madurai is intimately bound up with the history of South India. The word "Madura" means 'sweetness'. Tradition has it that Siva was so pleased with the City that he sprinkled nectar (Madhu) over it and hence the name.

Historical Past

Megasthanes, the Greek Ambassador at the Court of Chandragupta Maurya (320 B.C.) has described Madurai as being ruled by a Pandyan Princess. This City was well known to the Romans and Greeks. Ptolemy has mentioned Madurai as the seat of the Pandyan kingdom in the South. He refers to "Modoura" as the Mediterranean Emporium of the South. This place is mentioned in Kautilya's Arthasastra and also in the edicts of King Asoka.

In the fourteenth century, Malik Kafur, one of the Generals of the Emperor of Delhi, invaded Madurai and set up a Muhammadan dynasty. Madurai later became a feudatory of the Vijayanagar Emperor who restored to ruled this kingdom in the medieval period (1559-1781). They gave to Madurai a succession of strong and able rulers who brought peace and prosperity for a period of 200 years. It was during this period that the modern City of Madurai was planned. The layout of its main streets was determined according to the laws of the silpa sastras. The important rulers of this period were Viswanath Nayak, Tirumalai Nayak and Rani Mangammal.

The old City of Madurai was razed to the ground in 1840 and a new one was formed. Madurai was first constituted as a Municipality in 1835.

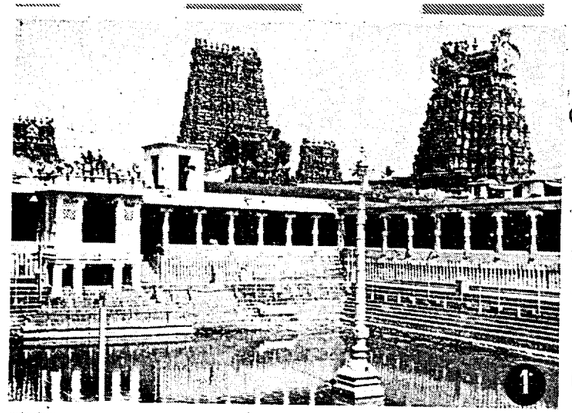
Magnificent Temple

The magnificent temple of Goddess Meenakshi is of course the centre of attraction in the City. This temple is closely associated with the history of the Pandyan Kings. Its architecture and sculpture have excited universal admiration and are considered the richest and most beautiful specimens of their kind.

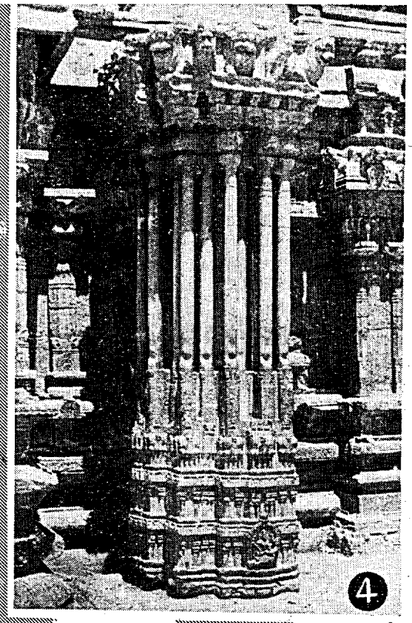
The temple, built in the heart of the City is in the shape of a parallelogram. A folk song compares Madurai to a lotus, the shrine being the centres of the flower.

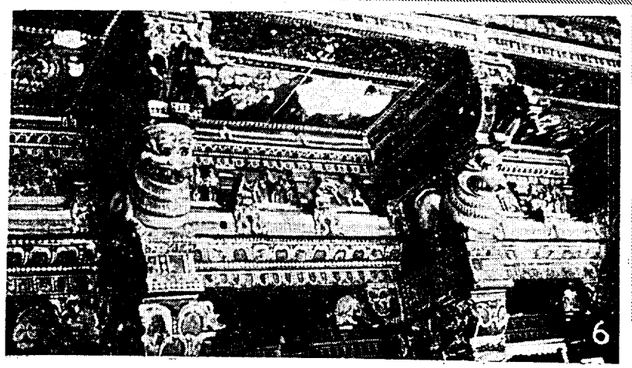
The temple has nine towers all rich in ornamentation. The towers at the entrance on the four sides are particularly big towers. At the foot of the northern tower, in the inner 'Prakaram' there is a musical pillar carved out of a single block of granite which when tapped emits the "Sapta Swara" the seven different musical notes.

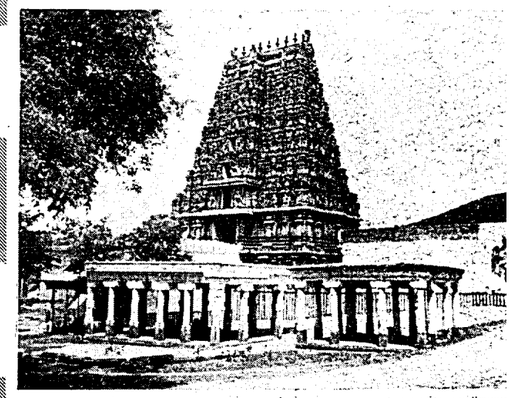
Much of the sculpture inside this great temple has a distinctive character which has attracted the attention of scholars and visitors alike. The thousand-pillar hall introduces several beautiful sculptured figures to the visitor

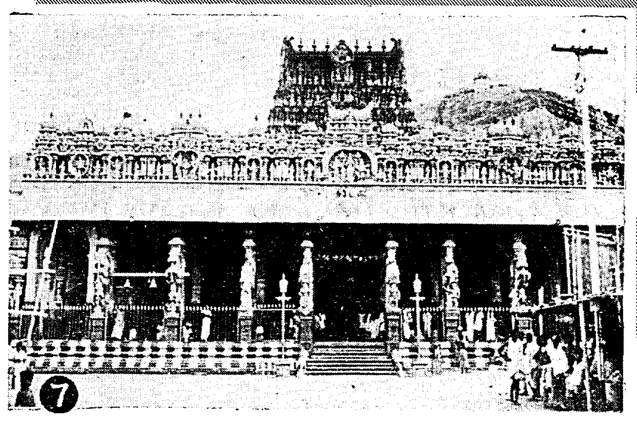


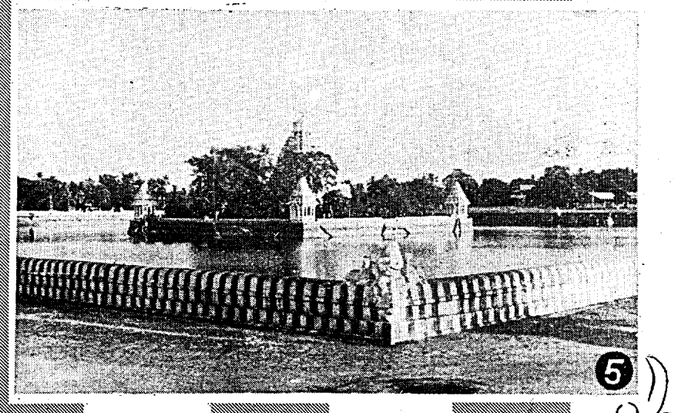


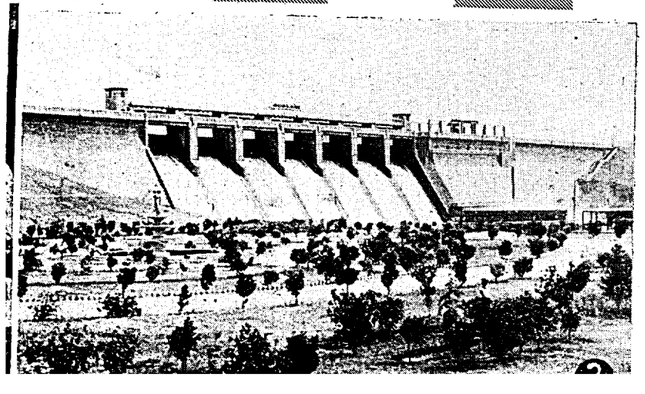












CRADLE OF TAMIL CULTURE





The greatest attraction of Madurai, seat of Tamil learning and culture is the Meenakshi Temple, temple of temples in Tamilnad. (1) View of the temple with tank in the foreground. (4) Musical pillar. (6) Beautifully carved ceiling. (8) Rare and unique Vinayaka with breast and cloven hoof. (2) Tirumalai Naik Mahal. (3) Vaigai Dam. (5) Mariamman Teppakulam. (7) Tirupparankundram. 9) Alagarkoil. (10) Suruli Falls.

basket, the swooping warrior complete with local weapons, other figures masculine and feminine or semi-divine are all monuments testifying to the high artistic skill of the ancient sculptor. In the Pudumandapam may be seen life-like representations of the ten famous kings of the Nayak dynasty.

The temple is famous for its fine collection of jewels, some of which are of priceless value. Many of the ornaments have a history dating back to several centuries. The total value of the jewels, at a conservative estimate, is in the region of about one million rupees.

In front of the sanctum sanctorum of Lord Siva is the Velliambalam (Hall of Silver) where a beautiful silver-plated figure of Lord Nataraja stands. An unusal feature of this idol, is that here the right foot is lifted instead of the left, whereas, in almost all the temples in India, it is the left foot of Lord Nataraja that is depicted as lifted in a dance pose.

Tamil Sangam

Madurai was the cradle of Tamil literature. Tradition has it that there were two Sangams constituted to promote the language. Out of the works brought out by these Sanghams, only one work (a Tamil Grammar) now exists. Although little is known historically of the two Sanghams, a third Sangham is said to have lasted to the end of the second century A.D. Many of the literary productions of this Sangham are still extant. Of these, the 'Thirukkural' and the 'Silappathikaram' have won world-wide recognition.

At the north-western end of the Siva shrine is the chapel of the Tamil Sangham. The new Madurai Tamil Sangham was established in 1901.

Places of interest

Thirumalai Nayak Palace.—Thirumalai Nayak Palace has been declared by competent authorities to be the largest and most perfect specimen of palace architecture. There is an agreeable combination of Hindu, Mohammadan and Gothic architecture.

Below the 60 feet dome of the palace is the "Swarga Vilasam" or throne room. This room may be compared with the great audience hall in the Mughal palace at Delhi. The audience hall in Thirumalai Nayak's hall is of polished granite with an ivory enclosure. In this enclosure stood the jewelled throne. Now the throne is not there.

Tumkum Bangalow.—This is a beautiful architectural relic of Thirumala and is in the same style as the palace. The noteworthy feature of this Bangalow is the Lotus Hall so called from the ceiling which represents an inverted lotus in bloom.

In Goripalayam, there is a large mosque which contains two tombs of the Sultans of Delhi. It is a most sacred place of Muslim worship in Madurai.

Thirupparangundram.—This sacred place is situated four miles south of Madurai. The Mohammedans claim that the name is properly Sikkandar malai after the Fakir Sikkandar who was buried at the top of the hill. This place was formerly an outpost of Madurai and figured in several of its wars but today it is famous for its temple dedicated to Lord Subramania.

The shrine is a rock-cut one. The horse court of the temple is a fine example of Nayak architecture. This is a place where Hinduism and Islam thrive side by side on terms of great intimacy.

It is stated in mythological tradition that the City of Madurai was once about to be destroyed by a gigantic elephant, a snake and a cow, all created through mantric powers by the enemies of the Pandyas and which were however mysteriously turned by Siva into rocky hills. These hills now surround the City in their real shapes; Anamalai (Elephant hill), Nagamalai (Snake hill) and Pasumalai (Cow hill).

The temple at Alagarkoil is situated in very picturesque surroundings amidst the ruins of an ancient fort. Nakkirar, a Tamil poet refers to this place as "Pazhamuthir Cholai" in his poem "Tirumurugatrupadai".

Karuppannaswamy, the God of the Kallars and the eighteen steps leading to his temple are held in high reverence by devotees and it is claimed that nobody will dare to tell a lie inside this temple.

The hill which is about 1,000 feet high is famous for its holy spring called 'Silambaru' and "Noopura Gangai". A picturesque two-mile route leads the visitor to a mandapa at the summit where bathing facilities are available. The Kalyana Mandapam of Alagarkoil contains many beautiful sculptures on its pillars which are fine specimens of Nayak Art.

Annuppanady.—To the student of archaeology, the City of Madurai and its environs afford ample opportunities for research. In the village called Annuppanady, two miles from Madurai town, some earthenware jars containing a number of human bones were unearthed. The villagers stated that it had been an old custom of the village to bury living men when they grew old and became a burden to others. The jars which are of varying sizes are are most of them 5 feet in height.

Vaigai Dam

The Vaigai Dam located about 40 miles west of Madurai City and on the route to the beautiful hill station of Kodaikanal and the Periyar lake, the famous game sanctuary of the South, has developed into a popular tourist centre. The dam-site is connected well by roads from Theni, Periakulam, Andipatti and Kodaikanal in Madurai district and is therefore easily accessible to visitors.

Kodaikanal.—The generous splendour of the summer days is nowhere so gorgeous as in Kodaikanal which bids fair to challenge the right of Ootacamund. For true lovers of nature, Kodaikanal provides, within a comparatively small circumference on the hill, varied charms. There is a picturesque lake with facilities for boating. It contains delightful spots for excursions and picnics.

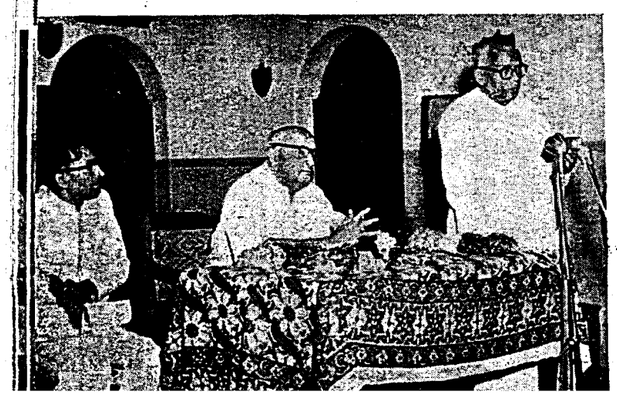
Suruli Waterfalls.—The waterfalls at Suruli in the Kumbam valley are being developed as a tourist centre. Well-laid out roads and bathing facilities will certainly attract more visitors to this falls.

Another place where we can see Hindu-Muslim unity in worship is Palani. This famous temple is situated on a hill 450 feet high. There are 659 steps. Apart from being a place of pilgrimage, it is celebrated for its rich landscape and beautiful surroundings. The Muslims call the God here "Palani Baba" and offer him scented bathi. They offer their prayers at a special niche set apart in the inner wall at the back of the sacred idol set in the sanctum sanctorum.

The idol is said to have been made of a combination of the nine basic herbal plants found in the hilly area surrounding the Palani region, and milk and other offerings poured over it as a part of worship and ritual are considered to acquiremedicinal value. This idol of Palaniandavar was set up by Saint Bogar. There is a separate Samadhi in the outer prakaram dedicated to this Saint.

Madurai has stood in the forefront in the freedom movement and it is noteworthy that Gandhiji visited Madurai and Palani and opened the famous temples here to Harijans.

Home Minister Bhakthavatsalam, inaugurated the "Information Forum" of non-official organizations at a function in the City precently. Dr. P. V. Cherian, Council Chairman, resided.



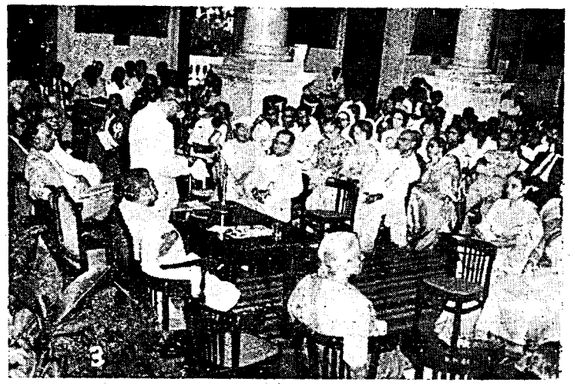


Dr. Panjab Rao Deshmukh, Union Minister for Agriculture and President, National Agricultural Fair 1962, recently addressed the first meeting of the Local Advisory Committee at Chepauk.

Shark Repellent

A simple colour-blindness test with a shark has proven so disastrous to the big fish that scientists wonder if they have accidently discovered a powerful shark repellent. The finding was reported at the Pacific Science Congress in Honolulu by Dr. Eugenie Clark of the Cape Haze Marine Laboratory at Sarasota, Florida. Dr. Clark had been testing a lemon shark's responses to square and diamond-shaped targets in a pool when she decided to see if changing the colour of one target to yellow would make any difference. As was customary, the trained shark approached the target, but a few feet away it stopped short and did a back flip out of the water. Then it swam frantically in tight circles, refused to eat, and within a few weeks died.

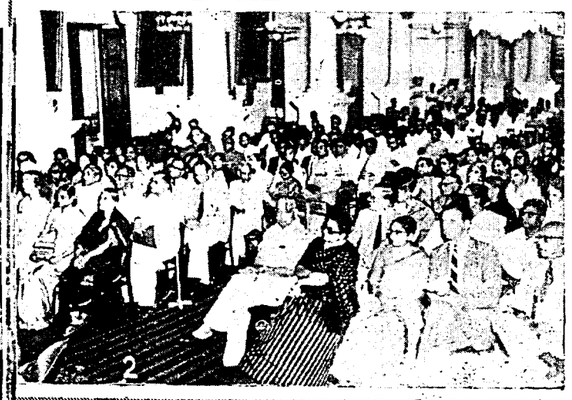






(1) and (2) Governor Bisnuram Medhi addressing the three-day Tenth Annual State Conference of Social Work inaugurated in the City recently by Union Minister Gopala Reddi; a view of the audience. (3) Industries Minister Venkataraman addressing the panel on 'Workers' Education'. (4) The Chief Secretary addressing the panel on 'Social Welfare and Panchayat Raj'. (5) Governor with invitees at Raj Bhavan where he gave a tea party to the delegates.

SOCIAL WORKERS' MEET





An Explanation

Inclusion of Unsold Bonds in Quarterly Draws

This explanatory note is intended to clarify to the public the justification for the inclusion of unsold prize bonds in the quarterly draws.

The Prize Bonds Scheme of the Government of India has been so drawn up that the number and amount of prizes are determined wtih reference to each complete series of Prize Bonds. Accordingly, every series consisting of 1 lakh units of Rs. 100 bonds carries 40 prizes amounting in all to Rs. 92,000 to be awarded every quarter and every series of 10 lakh units of Rs. 5 Bonds carries 278 prizes amounting in all to Rs. 46,000.

The Prize Bonds Scheme further provides that all series from which any bonds have been sold will be eligible for participat.on in the draws held after the expiry of two calendar months from the month of their sale but in the event of an unsold bond or a bond sold within two calendar months immediately preceding the month of the draw winning a prize, that prize will not be awarded.

No disadvantage

As the number and amount of prizes are linked with each series of bonds put on sale it is not possible to confine the draws and declare the prizes in respect of sold bonds alone. Nor would it be desirable to ignore the partially sold out series until they are fully sold out for participation in the draws as it would seriously diminish the chances of bond holders of these series of winning a prize for no fault of theirs.

Further the inclusion of unsold bonds in the draw does not operate to the disadvantage of the purchaser or reduce his chances of winning a prize as each holder of bond, whether from a fully or a partially sold out series, gets the same number of chances for winning a prize.

An Analysis

The followng analysis of the results of the four Prize Bonds draws held so far shows that the prizes won by the Bond holders have, by and large, been more than what they would have been entitled to on a proportionate basis on the sold bonds.

	Prize Bonds Rs. 100 denomination.		*Prize Bond Rs. 5 denomination.*		*Total.*	
	Number.	*Amount.*	*Number,*	*Amount.*	*Number.*	*Amount.*
First Draw.						
Percentage of bonds sold	33·6 per cent	33·3 per cent	53·6 per cent	53·6 per cent		40·8 per cent
Percentage of prizes won by the public ..	33·75 per cent	33·54 per cent	54·54 per cent	54·48 per cent	52·22 per cent	41·16 per cent
Second Draw.						
Percentage of bonds sold	35·4 per cent	35·4 per cent	59·7 per cent	59·7 per cent		44·2 per cent
Percentage of prizes won by the public ..	36·50 per-cent	35·58 per cent	60·79 per cent	58·03 per cent	58·05 per cent	43·71 per cent
Third Draw.						
Percentage of bonds sold	35·4 per cent	35·4 per cent	59·6 per cent	59·6 per cent		44·4 per cent
Percentage of prizes won by the public ..	33·75 per cent	36·55 per cent	60·75 per cent	62·36 per cent	57·84 percent	46·16 per cent
Fourth Draw.						
Percentage of bonds sold	34·79 per cent	34·79 per cent	73·98 per cent	73·98 per cent		49·97 per cent
Percentage of prizes won by the Public ..	31·84 per cent	36·33 per cent	73·17 per cent	73·10 per cent	68·95 per cent	50·56 per cent

Working of the Factories Act

A short review of the working of the Factories Act in the State during the year 1960 is given in this article which takes note of the number of factories covered by the Act, the general structure of industry in the State, the accident rate in factories and the steps taken for their prevention, etc.

There were 5,843 factories covered by the Factories Act, 1948 at the beginning of the year 1960. The number of such factories at the end of the year 1960 was 5,884 of which 5,670 factories were in commission as against 5,667 in commission during 1959. The average daily number of workers employed in these facotries at the end of the year was 320,115 as against 317,679 workers at the end of 1959. In the Public Sector, there were 172 factories employing, at the end of the year, 39,754 workers as against 167 factories employing 41,671 workers at the end of 1959.

Out of 5,884 factories which were on the registers during the year 1960, 3,134 factories were inspected once, 553 factories twice, 69 factories thrice and 8 factories more than 3 times.

The inspectors also made 1,267 Sunday inspections, surprise inspections, special inspections and night visits to factories to check employment of workers outside the specified hours of work and on their weekly holidays. They also inspected 146 unregistered factories.

Industrial Structure

The rice mills continued to occupy a dominant position in the industrial structure of the State but they only employed 15,079 workers while 459 cotton mills including cotton ginning factories employed 119,341 worker The largest number of factories are concentrated in Coin batore, Madras, Madurai and Tirunelveli. The Factori in Coimbatore employ the largest number of worke and the districts of Madras, Madurai and Tirunelve come next.

The Coimbatore district is the most highly industrialise district in the State. Cotton Mills including ginnin factories and engineering works predominate in tha district. Cotton Mills, Transport, Printing Press an Engineering Works figure prominently in the industria set up of Madras City. Textile Industry, Rice Mills an Printing Press predominate in Madurai district and Cotto Mills, Ginning Factories and Match Industry in Tirunelve district.

Revenue Minister Manickavelu, who recently laid the foundation stone for the servants quarters of the Kasturba Gandhi Hospital, Triplicane, inspecting a model design of the proposed buildings. Works Minister Kakkan, is also seen in the picture.



Safety Measures

The percentage of casual workers employed varie from factories to factories. The workers are all organise into Trade Unions and, therefore, very few workers are nov engaged on a casual basis. To a certain extent in seasona factories such as rice mills, dhall and oil mills, quite a number of workers are non-permanent as they are daily paid. Most of the workers who have completed 240 days attendance enjoy benefits such as leave with wages and maternity benefits. Thus there has been no discrimination between temporary and permanent workers in payment of wages and other benefits enjoyed.

Fencing and guarding of machinery continued to receive the active attention of the Inspectorate with the result that a major portion of their time was devoted towards advising and instructing the managements of factories in the upkeep of fences and guards. Inspectors acted in their advisory capacity explaining the necessity and type of guards to be provided in order to secure compliance with the statutory provisions. The advice tendered by the Inspectors of Factories received due attention from the managements of factories and fencing and guards for dangerous parts of machinery, etc., were provided and maintained fairly well in almost all factories.

The Inspectors were asked to give talks on safety and on prevention of accidents to supervisory personnel and workers. Arrangements are being made for procuring film strips on safety for exhibition to workers. An album containing photographs of intrinsically dangerous parts of machinery has been compiled and supplied to all the Inspectors of Factories who will make use of it when they give talks on "Safety and Accident Prevention" to supervisory personnel and workers.

The managements of factories are as much responsible as the factory inspectorate in enforcing the provisions of safety and the prevention of accidents in factories as accident prevention work is essentially a team work. With a view to creating incentives among the workers, necessary circulars have been issued to managements of factories employing 100 or more persons recommending grant of awards to workers making valuable suggestions regarding safety. There is a proposal to set up a Regional Labour Institute and Safety Centre. As an initial step in setting up this Institute a workshed in the Industrial Estate, Guindy, has been taken up for display of certain exhibits. In the building that is to be put up, different sections on industrial safety, health and welfare of workers will be established.

Downward Trend

In 1960, the total number of accidents in all factories was 16,680 as against 17,816 in 1959. Of these accidents, 19 proved fatal as against 33 in 1959. There was thus a decrease in the rates of accidents. Though the downward trend in the accident rate is not appreciable, yet, this was possible on account of the factories section of the Labour Department, having been relieved of the burden of enforcing the non-technical Acts, devoting more attention towards this important item of work (viz.) accident prevention in industries. The constant propaganda on prevention of accidents by way of talks undertaken by the Chief Inspector of Factories and the Inspectors of factories has had its effect to an extent in reducing human suffering in industries.

During the year 1960, the number of man-days lost due to industrial accidents was 117,631 as against 144,911 in the year 1959. There was thus a decrease in the number of man-days lost compared to last year.

Common Causes

Analysis of accidents by causation disclosed that ' struck by falling body', 'slipping on or striking against objects', 'power driven machinery', 'handling of goods', 'use of hand tools', etc., were some of the causation groups responsible for a large number of accidents. Lack of supervision, instruction, misunderstanding, non-observance of simple precautions while handling goods by the workers and the failure of the managements to take sufficient care to provide for the workers working at heights with sufficient safeguards to prevent falls were the main reasons for the fatal accidents.

The managers of 186 factories were prosecuted during the year as against 360 factories during 1959 for non-compliance with various provisions of the Factories Act, 1948. Two hundred and seventy nine prosecutions were launched against them. Two hundred and twenty nine cases ended in conviction and an amount of Rs. 8,197 was realised as fine.

Maternity Benefits

The number of factories which employed women and the average daily number of women employed therein during 1960 were 2,183 and 42,474 respectively as against 2,016 and 42,999 respectively during the previous year. One thousand eight hundred and sixty six claims were made for the grant of maternity benefits during the year as against 1,983 in 1959. One thousand one huudred and thirty nine claims were accepted and the total amount of maternity benefit paid by the employers of women workers exclusive of benefits paid by the Employees' State Insurance Corporation was Rs. 1,21,393-96 nP. during the year as against Rs. 85,301-87 nP. during 1959.

Cultural Halls in mofussil areas

The Union Ministry of Scientific Research and Cultural Affairs has commended to all States a scheme for the construction of cultural halls in the mofussil areas. The cultural hall will be used for music, drama, dance and discussions and other cultural activities. It is envisaged that these halls will be used for a minimum of four functions every month—two for men and two for women. The scheme envisages a Central grant of 25 per cent of the total building cost, the other 75 per cent being raised by the State Governments by themselves or in co-operation with the public.

SECOND National Agriculture Fair

The Second National Agriculture Fair is proposed to be held in Madras from January 14th to February 20, 1962. The first Fair held in Calcutta was an outstanding success. The idea underlying the organization of these Fairs which are planned to rotate from one part of the country to the other is to give all Indian farmers the opportunity to get acquainted with the latest developments in the field of Agriculture. This article gives an account of the Bharat Krishak Samaj, the national organization of farmers, under whose auspices the World Agriculture Fair and the First National Agriculture Fair were held and details relating to the Fair to be held in Madras.

Bharat Krishak Samaj, the national organization of the farmers of India, came into existence as a result of a Conference of Ministers of Agriculture, Animal Husbandry and Co-operation, and representatives of farmers which was held at Srinagar in July, 1954. The Conference, which was convened by the Union Minister of Agriculture, Dr. Panjabrao Deshmukh, carefully considered the difficulties which were being experienced in furthering the progress of agriculture, particularly in the field of agricultural extension, and decided that it was necessary that a professional organization of the farmers be brought into existence in the country. As a result of this decision, the Bharat Krishak Samaj came into being during the later part of 1954, and the First Convention of the Farmers of India was inaugurated by the Prime Minister of India, Shri Jawaharlal Nehru, in April 1955.

American Ambassador Galbraith handing over a token package of Milk Powder to Chief Minister Kamaraj, while Education Minister Subramaniam happily looks on, at a recent function in the City Harbour to mark the gift of the first consignment of Milk Powder and other articles as part of the CARE programme for aid to the Madras Midday Meals Scheme.



The Bharat Krishak Samaj is a non-political, non-official and non-sectarian organization of the farmers of India. It has just completed six years of its existence and, during this short period, has established its branches in all the States of the country in addition to initiating efforts in several directions to serve farmers and farming in India.

Annual Conventions

The national convention of farmers, which is held annually by the Samaj in different parts of the country, affords opportunity to thousands of farmers from various States to come together and exchange ideas on important problems affecting their profession. Many vital decisions taken during these conventions and during seminars on important subjects pertaining to farming have been implemented. The Samaj has brought into existence the National Agricultural Co-operative Marketing Federation, which has undertaken the responsibility not only to import the seeds and fertilizers needed by farmers, but also to assist them to export the commodities produced by them. Besides, it has , recently, set up the Farmers' Co-operative Bank of India and established a college for the rural population near Delhi. The latter institution has started functioning from the begining of July, this year. The Samaj also organized, for the first time in history, an Afro-Asian Conference on Rural Reconstruction. This was inaugurated by the President of India at New Delhi on January 18, 1961 and was attended by representatives of the Governments and farmers of over 23 countries and such international organizations as the Food and Agricultiral Organization of the United Nations, the International Federation of Agricultural Producers, the International Co-operative Alliance, etc., etc. This Conference, which was a great success, is expected to be the forerunner of a new era in the rural reconstruction activities of the two Continents.

Bold decision

Along with the Annual Convention of farmers, the Bharat Krishak Samaj held an agricultural exhibition, in which the Ministry of Agriculture and the various States Departments of Agriculture displayed the progress made in the field of agriculture and allied sciences. The standard of display in these exhibitions was so poor, and the need for such exhibitions in a country like India, where the national economy is largely dependant on agriculture, so great, that the Bharat Krishak Samaj took the bold decision to organise an International Food and Agricultural Exhibition in New Delhi. The broad objective behind launching this adventure was that this would provide the much needed opportunity not only to farmers, but also to agricultural experts and Community Development and extension workers, to know the progress which had been made in the field of agriculture and allied sciences not only in India, but in other parts of the world also.

The Calcutta Fair

But the more important object underlying the launching of such a venture was to provide an opportunity to the various States and others to lay the foundation of and later develop a proper agriculture exhibition which the country badly lacked and which was greatly needed. An agricultural exhibition is the most reliable and quick visual aid to convey information to farmers, who are mostly illiterate and cannot, therefore, take advantage of the large volume of literature that is produced by the Ministries and the Departments of Agriculture in the country. The first World Agriculture Fair, as it was called, was thus held in New Delhi from December, 1959 to February, 1960 and was visited by over 3 million people including a large number of farmers coming from all parts of India.

Emboldened by the success achieved in the organization of the World Agriculture Fair and with the object of providing continuity to the idea of developing a proper agricultural exhibition in the country, the Samaj took the decision to hold an annual National Agricultural Fair which may rotate from one part of the country to the other and give an opportunity to the farmers in the various regions to get acquianted with the rapid advances which were being made in the field of agriculture and allied sciences. The Prime Minister, who had always been appreciative of the Samaj's efforts for organizing the World Agriculture Fair also made a mention of it in his address to the Conference of Ministers of Agriculture, held in New Delhi last year. This gave additional encouragement to the Samaj to initiate action towards the organization of the First National Agriculture Fair in Calcutta.



Chief Minister Kamaraj, inaugurated the third anniversary of the Last Grade Government Servants' Association celebrated recently in the City.

It was originally proposed to hold the first fair in Madras, but it was discovered that a big Industries Fair was to take place in the City during the winter of 1961. It was for this reason that Calcutta was chosen as the venue of the first fair and, with the whole-hearted co-operation offered by the Chief Minister of West Bangal and his Government, the fair was acclaimed as the biggest and finest ever held in that city. This fair enabled over 2 million visitors, a large number of whom were cultivators, not only from all parts of West Bengal, but also other States of the country, students of Agriculture, research and extension workers, experts connected with agricultural research and community development, etc., to get a view of the progress made in the field of agriculture and allied sciences in various parts of the country, Eleven States of the Union of India, several Ministries of the Government of India, the U.S.S.R., the Federal Republic of Germany, the Embassy of Japan and the trade in agricultural machinary, plant protection and equipment, plant-food, etc., participated in this Fair to make it a big success.

Madras 1962 venue

The Second National Agriculture Fair is proposed to be held in Madras from January 14 to February 20, 1962. Like the First Fair held in Calcutta, the second one will also be a National Food, Agriculture and Rural Industries Exhibition. It will display details of the progress made in all fields of agriculture, including animal husbandry, horticulture, forestry, co-operation, etc., etc. It will provide the fullest scope to the Ministries of the Government of India and Indian States, the Central Commodity Committee, reasearch institutions, boards, commissions, organizations, manufacturers, distributors and others, to exhibit their acheivements and display their products. The Fair will have a National Sector, a State Sector and

a Rural Industries Sector. About 12 States are expected to participate in the State Sector. The biggest participant of the Sector will be the host State of Madras, which is planning for extensive display of the progress achieved in all fields of agricultural science in the State. One may expect some very picturesque pavilions, depicting not only agriculture, but also the culture of the various States of the Union. A pavilion exhibiting the famous breeds of cattle in the country will be a very distinctive feature of this Sector.

In the National Sector, the Union Ministries of Food and Agriculture, Information and Broadcasting, Scientific Research and Cultural Affairs, Railways and Commerce and Industry are expected to participate. The Ministry of Agriculture is proposing to display the advances made in all important crops which are grown in the southern zone of the country. In the National Sector we shall also have extensive displays put up by the Fertilizers' Association of India, illustrating the production and use of fertilizers. The Agricultural Machinery Association of India and manufacturers of all machinery used by the Indian farmer, the manufacturers of plant protection chemicals and equipment, plant food and allied industries will provide a very big attraction in this Sector. The exhibition of small implements will be a new set-up of the Agricultural Machinery Association of India.

International Section

In the Rural Industries Sector, the Khadi and Village Industries Commission is expected to put up a pavilion to demonstrate important rural industries of the country, Weavers' Co-operative will be the other participants in this Sector.

The Fair will also have an International Section in which one may expect very impressive displays to be set up by the United States of America, the U.S.S.R., the Federal Republic of Germany and Japan and certain other countries. They will provide not only some unusual attractions, but also instruction with regard to certain important aspects of the agricultural life of those countries.

The Fair will have a very representative and attractive shopping centre, which will comprise over 200 stalls, affording an opportunity to the small trader to display his wares. One may expect traders from all parts of India to take part in this Centre. Among the attractions for children will be a big children's park with cycles and tricycles giving them a chance to gain traffic consciousness, battery-driven cars and merry-go-rounds, which have never been displayed hitherto in the City before. A theatre and many open air cinema inside the Fair will add further attraction to it.

The Ministry of Community Development and Co-operation have already informed the Development Commissioners in the various States of South India to send farmers in large number to visit the Fair.

The Eighth National Convention of Farmers will also be held in Madras in the second week of February 1962, when farmers from all parts of the country will have an opportunity to see the Fair in this beautiful City.

Houses for industrial workers

The Government of India have authorised the State Governments to undertake construction of houses, under the Subsidised industrial Housing Scheme, for Industrial workers, whose employers contribute to State Funds, 25 per cent of the prescribed cost of these houses.

This step has been taken in view of the difficulties experienced by some industrial employers in regard to the title of the land, framing building costs and estimates, mortgaging the houses built for workers to the Government and administering the housing colonies built by them. So far employers desirous of building houses for their industrial workers, could obtain 50 per cent of the approved cost as loan and 25 per cent subsidy under the Subsidised Industrial Housing Scheme from the State Governments. The remaining 25 per cent was the employers' own contribution to the cost of construction, which was to be undertaken by the employers themselves.

The houses, to be built by the State Governments, under the revised arrangements will be offered, in the first instance, to the workers of employers who have contributed to the cost and the State Governments will be responsible for their maintenance and administration.



Numerous scientific developments, new techniques and improved devices are daily emerging in this Age of Science to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature notes such developments. Apart from Indian scientific advances, interesting bits from the United Kingdom and the United States are also included.

Begun in India only a few years ago, during the Second Plan period, research on the application of atomic Energy in agriculture has already to its credit the production of better varieties of crop plants through the induction of mutations and the standardisation of improved fertiliser practices through radio-tracer studies. Control of pests and diseases and preservation of vegetables are other lines of work now being conducted at the Indian Agricultural Research Institute, New Delhi.

The Informal Consultative Committee of the Ministry of Food and Agriculture was centrely told that seeds and flowers of a wide range of crop plants were being treated with Gamma rays at the I.A.R.I.'s Gamma Garden, with neutrons at the Apsara Reactor of the Atomic Energy Establishemnt, Trombay, and with radio active isotopes such as radio phosphorus and radio sulphur. The facilities provided by the Gamma garden are being made use of by various Central and State agricultural research institutes.

New wheat variety

From among the mutations already induced, a new wheat variety, named NP. 836, has been developed. This has well prominent awns (bristles found on the flowers), unlike the parent strain which is awnless. NP. 836 is rust resistant and suitable for cultivation in parts of Bihar and West Bengal. Indian farmers prefer awned varieties of wheat, since birds do not attack them so readily.

Several mutants with short and striff straw have also been obtained in wheat through the application of atomic energy. Such varieties do not fall down under conditions of

In tobacco, a mutation leading to increased leaf-area has been obtained in the variety *Natu* ; this mutant is now undergoing trials in the Guntur district of Andhra Pradesh where it is extensively cultivated. Mutations of breading interest have been isolated in cotton potatoes, tomatoes, maize, jower and citrus. Seeds of teak and other forest trees have been irradiated and are now being studied at the Forest Research Institute, Dehra Dun.

Disease Immune Jute

Crosses between related species of plants, never before successful, can now be made by using pollen grains treated with radiation. A cross made in this way between two jute yielding species, *Corelorus olitorius* and *C. capsularis* has paved the way for developing a new jute variety, possessing a white fibre, immunity to diseases and pests and adaptability to a wide range of environmental conditions.

Through the use of insecticides and fungicides "labelled" with radio active atoms, better methods of controlling pests and diseases are being worked out. The possibility of sterilising some important insects, such as the bed bug and the malarial mosquito, through the use of radiation is being investigated.

In regard to the preservation of vegetables, it has been found that treatment with suitable doses of gamma rays prevents potatoes and onions from sprouting, thus considerably extending their storage life.

Electricity Conducting Glass

heated almost to its melting point and then treated with tin chloride. This process, it is claimed, causes the glass to become a permanent conductor of electricity. Glass treated in this way loses some of its transparency and a slight iridescence becomes noticeable. Tests show that it may be used for the production of the windscreen of motor cars and aeroplanes enabling the glass to be heated by a small electric current thereby preventing the formation of ice. The glass may also be used for heating of rooms and offices. Tests have shown that the application of heat has very little effect on the conductivity of the glass and as a result the glass can be used effectively as a resistance material in electronic equipment. It may also be used in advertising and instrument panels.

The process is said to be cheaper and in many ways simpler than that used so far for the production of electrically conductive films on the surface of glasses. The electrical conductivity is caused by formation of a thin film of tin oxide anchoring itself to the silica net work on the surface of the glass.

Fibre Glass Bus

An experiment in the use of fibre glass which may have far-reaching effects on future omnibus body construction, is being carried out by a coach factory at Lowestoft, England. The body hull, with the exception of the floor and entrance steps, of a new single deck omnibus, has been manufactured entirely from glass fibre bonded with polyester resin. The object of the experiment is to see if there would be worthwhile savings in construction, maintenance and operating cost if fibre glass is used in production of omnibus body. There may be other advantages like quieter running of the omnibus owing to the non-resonant nature of the bonded glass fibre, and greater comfort in both hot and cold weather because of the very low thermal conductivity of fibre glass compared with aluminium and other metals.

Dr. P. Subbaroyan, Union Minister for Transport and Communications, inaugurated the new 8000-line Central Telephone Exchange in the City recently.



A mountain over 9,000 feet high, says a Unesco report, has been discovered in the Indian Ocean 550 miles south-east of Ceylon by scientists aboard the Soviet oceanographic research ship "Vityaz" charting the ocean floor. The mountain is a volcanic cone with several peaks, the highest of which lies about 5,000 feet below the ocean surface. The crew of the vessel named the mountain "Afanasi Nikitin", after the first Russian traveller to sail the Indian Ocean.

The discovery was made during one of the two expeditions carried out by the "Vityaz" as part of the programme to explore the Indian Ocean at present being organised by the International Committee for Oceanographic Research and in which many nations are taking part.

During the voyage, Soviet scientists also attempted to ascertain the thickness of the earth's crust which, according to their findings, is about five miles in the middle of the Indian Ocean.

Sugar Processing

A British firm is marketing a new instrument to eliminate the severe corrosion caused by small amounts of sugar in the feed water of boilers used by sugar-processing firms all over the world. Invented by the British Sugar Corporation, it will sound the alarm when the sugar content of water exceeds 2 parts in 1,000,000 of water.

The operation of the instrument depends on detecting photoelectrically the darkening produced when an aniline dye is added to water containing very small amounts of glucose. If 10 parts of glucose are present in 1,000,000 parts of water, the colour produced is deep blood-red, almost black. The instrument automatically samples boiler water every 12 minutes, adds a small dose of sulphuric acid to the sample—enough to convert it to glucose—boils it, and finally adds caustic soda to neutralize the acid and the dye (tetrazolium salt).

The pink colour produced is measured by a photoelectric cell which causes the alarm to ring if the colour is darker than it should be. With automatic operation, the instrument enables continuous watch to be kept on boiler water and cuts out expensive and time consuming laboratory analysis.

Solar Energy

Solar energy and the conquest of hunger were among the many problems tackled by Britain's Tropical Products Institute last year. A report just published in London by the Department of Scientific and Industrial Research shows that particular attention was given to immediate uses of the sun's heat in less-developed tropical areas.

An experimental flat-plate water heater was among the many systems tested during the year. During trials on the roof of the institute's London laboratories, a 2-metre-square collecter plate heated 180 litres of water to 60°C with an average of only four hours' sunshine.

Trials were also begun on an improved type of solar still for purification of water. The first model of this still is being tested in Malta, and a modified version is being built.

Other developments include temperature switches for controlling flat-plate water heaters by automatically stopping and starting a pump according to the hotness of the sun.

Relieving Malnutrition

A major project was concerned with using vegetable protein for the relief of malnutrition in underdeveloped territories of Africa and other parts of the world. The institute found that groundnuts were a particularly useful source, and that current production would more than meet the nutritional needs of African children. They also began a study of the economic problems of using groundnuts, such as making groundnut meal for human consumption, raw-material costs, problems of distribution, and what to do with the large quantities of oil which would result from large-scale processing.

One line of inquiry and research involves surplus fruit crops. A note has been circulated on the development of outlets for bananas by processing. Until recently, the only banana product with a regular market in international trade has been the dried fruit, or "figs", for which outlets have always been limited, with little room for new production. The report says: "There would appear to be scope for new methods of dehydration in the improvement of banana products if the process can be operated economically with this fruit . . . .

"Should the processing of bananas develop to any great extent, there would become available quantities of skins, the utilization of which might make a significant contribution to the industry. With this object in mind, an investigation has been started at the institute on the banana skin as a possible source of chemicals for industrial or other use."

Identifying Hardwoods

Forestry laboratories the world over will benefit from the success of 25 years of British research into the problem of identifying commercial hardwoods simply and quickly. The final result is a text of anatomical features for indentifying hardwoods plus a system of some 900 "card keys"—cards bearing in punched-hole form the characteristics of about 380 commercial hard timbers.



Chief Minister Kamaraj, receiving the silver lock and key from donor M. M. Parameswara Iyer, who has gifted a building in Purasawalkam to the Corporation for running a Child Welfare and Maternity Centre.

This was devised at the Department of Scientific and Industrial Research's Forest Products Research Laboratory, and published recently as Forest Products Research Bulletin No. 46 together with the 900 indentification "card keys".

The bulletin and cards have been produced mainly for the trained wood anatomist. The anatomical features used in the identification of hardwoods are defined clearly and concisely, and illustrated by more than 80 photomicrographs of wood structure.

Regional examples of the woods covered include: India and South-East Asia—teak and rosewood; West Africa—all mahoganies; East Africa—special-purpose hardboards; and Latin America—rosewood, boxwood, mahogany, greenheart, and lignum vitae.

The Atlas Computer

Computers costing a minimum of £. 2,000,000 each and claimed to be the most powerful in the world are now being manufactured in Britain. Known as Atlas computers, they are the result of years of research and development by Manchester University and Ferranti, Limited, a long-standing partnership which designed and built the world's first commercially available computer more than ten years ago. Compared with this early machine, Atlas is a thousand times faster, is of unique design, and is available at a competitive price.

A pilot model has been working since 1960, and the first production model of a comprehensive Atlas is now being installed at Manchester University. A second machine has been ordered by Britain's Atomic Energy Authority to speed the nuclear research programme. It will be installed for use by the National Institute for Research in Nuclear Science at Harwell, where it will be used first to investigate the complex behaviour of nuclear reactors. Several universities will also have access to the machine for research in a variety of fields.

wide variety of additional equipment can be attached he central computer. Atlas thus becomes a general-ɔose computer equally suitable for scientific calcula-s and commercial data-processing.

he speed of the computer is almost the speed of light hich is, in fact, the maximum speed at which signals travel in existing types of electronic computing circuits. s made possible because of three new design features.

ut perhaps the most revolutionary aspect of the com-er is a supervisory system that automatically makes its decisions in regulating the flow of work through the hine. It allocates the resources of the computer to k on several programmes simultaneously in such a way t the whole machine is operating at maximum iency.

ctronic Navigator

new, airborne electronic device which, the makers m, will make an aircraft independent of outside navi-ional aids has been developed in Britain. It is a digital nputer known as DEXAN (Digital Experimental Air-ne Navigator), and forms the basis for a new "electro-navigator" which will work solely within an aircraft l at all times feed the pilot accurate information on his ual position.

The system has been designed and built by the General ctric Company Limited as part of a programme for Ministry of Aviation in conjunction with the Royal craft Establishment at Farnborough, Hampshire. Teams the company's electronics laboratories and at the Royal craft Establishment have produced an experimental nputer which has been put through intensive tests abroad omet 1-A airliner It can handle more than 300,000,000 ms of information a minute.

DEXAN carries out continuous navigational computa-ns on information from a Doppler radar and gyro-npass carried in the aircraft, but this is only one of ny jobs the computer could be made to perform.

Discussing the effectiveness of the system, which has n evaluated by the Ministry of Aviation, the General ctric Company says that during one hour of flight more n 17,000 million digital operations have to be carried correctly by DEXAN. Analysis of the results has wn that DEXAN performed its functions with a high ree of accuracy and reliability.

eel Process control

A Sheffield (England) steel works is the first in the world to employ an electronic digital computer for the control of an actual steelworks process. The computer has been installed at the billet mill of Samcul Fox & Co., Stocksbridge, Sheffield, for the control of cutting up steel billets up to 450 ft. long.

The firm states: "A major problem in dealing with billets of this length is to avoid wastage, the lengths required varying from 30 ft. down to 18 in. Previously it was the practice for billets to be cut at the judgment of the cutter—a job calling for considerable skill. By using the computer, however, the necessary calculations can be made very much faster and with greater economy than by a human operator".

The sequence of operations is that the billet length is measured during the final passage through the mill, and this length is fed into the computer. Details of the customer's requirements have already been set up on the input board of the system by the cutter and, within seconds, the computer completes its calculation based on the information and transmits the result to the various cuttings.

Plastic Bricks

Plastic bricks introduced by a North England firm will, it is claimed, provide houses to outlast those traditionally built with bricks and mortar. The bricks, which have been patented, are made of chemically fire-proofed polyester fibre bonded to a central insulated material of unconnected molecular structure. They can be so treated that the colour scheme will last the life of the house.

It is believed that the price of a house built in this way will be more or less than the same as that of a normally built house. Heating costs are expected to be lower because of the use of insulation material, and the electrical wiring and water pipes can be incorporated in the insulated skin. The firm envisages the possibility of manufacturers producing a do-it-yourself kit for home house-builders.

Unmanned Weather Station

An automatic, unmanned weather station, powered by atomic energy, has begun operating on Axel Heiberg Island in northernmost Canada. It covers a previously blank area on U.S. and Canadian weather maps. Every three hours the station automatically transmits reports on temperature, wind, and barometric pressure. Expected to operate two years before refuelling, it is powered by a pound of strontium-90, whose heat of radio activity is converted into electricity. The strontium-90 is sealed in insoluble and corrosion-resistant materials. The station was designed and built for the U.S. Weather Bureau and the Atomic Energy Commission.

Drugs From New Organic Compounds

The current research work in the field of organic chemistry concerning the development of drugs and the synthesis of organic compounds, with potential uses in medicine or industry, is described in a number of research papers published in the latest (July) issue of the Journal of Scientific and Industrial Research, published by the Council of Scientific and Industrial Research.

Organic chemists at the Haffkine Institute, Bombay, have been working on the preparation of derivatives of thiourea possessing better anti-tubercular activity than the parent substance. Of the 25 compounds synthesized, one compound has been found to inhibit the growth of the tubercle bacilli. Similarly, from isonicotinic acid, a well established drug in the treatment of tuberculosis, derivatives, called isonicotinic acid hydrozones, have been synthesized and tested at the Central Drug Research Institute, Lucknow. Some of these new compounds have been found to possess activity comparable to that of isonicotinic acid, and, in addition, they are three to four times less toxic.

Investigations on the synthesis of local anæsthetics, more potent but less toxic than the ones now in use, are in progress in the Chemistry Department of the Banaras Hindu University. Ten new derivatives of thiazolidones, as these chemicals are termed, have been synthesized and pharmacological tests have shown two of the compounds to be highly effective as local anæsthetics.

Two other research papers in this issue of the Journal describe the synthesis of a group of organic compounds similar to some colouring matter present in plants—flavones, isoflavones and flavanoids. Many potential uses have been reported for these compounds. Some of them possess activity similar to that of vitamin P. the deficiency of which causes the capillaries of blood vessels to become more permeable. A few are poisonous to fish and others exhibit antioxidant properties and are able to prevent rancidity of oils and fats. A series of 19 isoflavones have been synthesized in good yield in the laboratories of the Department of Chemical Technology, University of Bombay.

Rare Surgical Technique

A British apparatus which enables a patient for a heart operation to be cooled to 10° to 15°C, under which conditions the heart and brain are protected from injury by their own cold state has been manufactured by the surgical division of Allen and Hanbury, Ltd., of London. "It means, in effect, that the surgeon is operating on a 'dead' person. Under 'profound-hypothermia' (as the state is known), the heart stops pulsating and is absolutely dry", a spokesman for the manufacturers states:

"Surgeons can use this condition of the patient for from 50 to 60 minutes, after which time reheating is started and he is brought back to 'life'." The equipment is called "the Westminister profound-hypothermia apparatus".

The technique was developed in the department of experimental surgery at the Westminister Hospital, London. The method differs from that employed by the heart-lung machine, in which artificial oxygenation is used and the heart continues beating during the operation.

A film has been made of one successful operation, and was shown at an international symposium in Paris in July. It will be made available free of charge to surgeons and hospitals overseas through depots and agencies of Allen and Hanburys throughout the world.

Radiation Sterilization

A British medical firm, Smith & Nephew Associated companies, Ltd., has bought an electronic accelerator costing about £100,000 to extend research in the radiation sterilization of surgical materials supplied to hospitals. Research made possible by the electronic accelerator, which should be in use in a year, will help in the fight against infection in hospitals.

In collaboration with the United Kingdom Atomic Energy Authority, Smith and Nephew Research, Ltd., has studied the principle of radiation sterlilization by using gamma rays from a radioactive isotope. Further researches into this method are in progress.

The electron accelerator method uses high-speed electrons produced by a cathode. The machine bought by the company will produce electrons with energies up to 4,000,000 electron volts at a power output of 4KW.



Dr. P. Subbaroyan, Chief Minister Kamaraj and others going round the new Central Telephone Exchange.

Radiation methods such as these enable even sealed and packaged articles to be sterilized successfully and without any radio activity risk to anyone handling them afterwards. The electron accelerator will not only be used as a research tool, but will provide a pilot plant to supply quantities of surgical materials in a sterile condition to hospitals.

Emergency Lung Service

Two small boxes are kept at London Airport ready to be placed aboard an airliner and rushed to any part of the world in the event of an emergency. Each box contains an electronic "lung" known as the Barnet Ventilator, which has frequently been used to save the lives of patients suffering from respiratory diseases.

The firm which keeps the 'lungs' at the airport operates a round-the-clock service which ensures that they can be flown to any part of the world with minimum delay. A spokesman for the firm said: "We have often had emergency calls for a 'lung' from doctors in Britain and overseas. But we needed fast means for getting them from Buckingham (where they are made) to their destination. Quite recently a 'lung' was unavoidably delayed or over five hours, and so we have decided to keep two at London Airport just to meet such eventualities."

Removing Lung Clots

Three surgeons at the Baylor University College of Medicine have added modern technique to an old form of operation so that it now shows promise of saving patients destined to die suddenly of blood clots in the lung. The old method, developed by the European F. Trendelenburg in 1908, is known to have saved only 16 lives in Europe and the United States. During this time uncounted

The 17th survival, achieved by the Baylor trio came through the quick use of a heart-lung machine. For 15 critical minutes while clots were being removed from the pulmonary arteries, blood circulation was shunted away from the lungs and into the oxygenating machine. Thus, the patient was adequately supplied with oxygen, and the surgeons were able more easily to perform their work without being hampered by the flow of blood through the pulmonary arteries.

Detecting tuberculosis

A simple skin test for detecting tuberculosis has been reported by Dr. Sol R. Rosenthal and the Lederle Laboratories of Cyanamid International. The testing equipment consists of a plastic cylinder, shaped like a thimble, which holds a set of steel prongs on which tuberculin has been dried. Tuberculin is a substance derived from the tuberculosis germs. When the skin reacts to it the patient may be tubercular and should undergo more tests. The prongs are pressed against the patient's skin and then can be thrown away, along with the cylinder. Readings of any reaction can be made after 48 hours, the same time span as in the widely used Mantouck test, in which tuberculin is injected between the layers of skin of the forearm.

Preventing Cattle Disease

Researchers at the University of Oklahoma have found that feeding cattle an antibiotic supplement can keep them from catching anaplasmosis, a disease known to infect cattle in many areas of the world. The mortality rate has been as high as 58 per cent in infected herds. In experiments on a select group of test animals placing minute amounts of the drug aureomycin chlortetracycline in the feed was found to keep them free of the infection. All cattle not fed the antibiotic contracted the disease-carrying parasites which invaded their red blood cells. While the disease occurs the world over, it is especially prevalent in warmer climates. It is characterised by anaemia, fever, loss of appetite, loss of weight, and yellow membranes.

Measuring blood flow

A machine which can measure accurately the speed and volume of blood flow without opening a blood vessel has been developed by two University of Chicago scientists. Their Direct-current Electro-magnetic Flowmeter, now ready for laboratory use, they say, is accurate within five per cent. The scientists report the flowmeter can determine the effect of various drops on blood flow and on

Food from Tidal Lands

This article seeks to correct the general impression that tidal lands would not be adaptable for agriculture. Experience elsewhere as in India has shown that tidal, marshy lands can be reclaimed by simple treatments and at small cost.

A belt of tidal lands runs almost all along the coastline in India. This includes the river deltas and the several backwaters biting into the coastline. By far the largest land stretch that comes under this category is the Sundarbans in West Bengal and the estuaries of the Cutch peninsula come next. Hitherto these had hardly been considered fit for any use. It is noteworthy that in certain parts of the country, entrepronours have launched agricultural practices in this type of land with varying success. But no concerted effort appears to have been made, nor a rational approach to the problem has been attempted to salvage them for gainful use.

By far the major portion of tidal lands lies at the sea level or down to three metres (10 feet) below it. Close to the sea or connected with it, they are subject to saline action.

Main Requisite

For proper utilisation of such marshy lands, the main requisite is formation of bunds isolating a convenient number of blocks of sizes varying from 40·4 hectares (100 acres) to 809 hectares (2,000 acres) with water courses in between. Earthen bunds can safely resist the water pressure which varies with the tide levels around the bunds.

After isolating the blocks, the water inside the bunds is pumped out into the intervening canals and the entire area drained for agricultural operations.

The reclaimed soil should be analysed and suitable manure should be applied for making up the deficiency of soil nutrients. Such a technique has been adopted in the San Francisco bay in the United States by reclaiming nearly 121,406 hectares (300,000 acres), and on the Kerala coast nearly 40,470 hectares (one lakh acres) of tidal lands.

The question will naturally arise how in a tidal area fresh water can be supplied for successful cropping. Normally, cultivation in this part can be done throughout the year if fresh water is available.

However, it is only during the monsoon, say between June and September, that there will be assured fresh water-supply from rainfall. It is, therefore, possible to take a monsoon crop without much difficulty. If reservoirs can be constructed for water-supply during the non-monsoon months, such storage can be utilised for another crop in the post-monsoon period.

An advantage which this proposal presents is the complete elimination of canal and canal structures for loading water from the storage to the fields, the field level being all below the sea level. The intervening canal space between blocks would remain filled up with fresh water during monsoon periods. Irrigation requirements will be met by drawing water from the canals through pipe holes across the bunds.

Even if major storages in the high reaches of a river are not possible, there is still scope for maintaining fresh water from rains that collect in half of the blocks in the tidal area by bunds and using the same for the remaining half of the blocks parcelled out from the tidal lands. This, therefore, enables quick results being achieved without large scale investment on major engineering structures.

Employment Scope

On a modest estimate it appears possible to develop tidal lands to the extent of nearly eight lakhs hectares (two million acres) in India. Rockening on a crop yield of half a ton per acre per crop annually, reclaimed lands can be expected to yield 1,016,050 metric tonnes (one million tons) of foodgrains. The main engineering work involved being earth bund formations, it gives scope for a large number of local, unskilled labour to be employed. It also lends itself to comparatively quick results in raising food crop.

On an average an investment of about Rs. 750 per hectare (Rs. 300 per acre) will be enough for completing the project, and the total capital investment will be Rs. 60 crores over a period of five years. Most of this investment should be in the form of loans to the cultivators themselves for making bunds and other preliminary works, reimbursible in 15 years.

Plan Results Speak . . . .

The Village and the Farm are the country's life-lines. It is here that the two Five-Year Plans have produced the most striking results in Madras State.

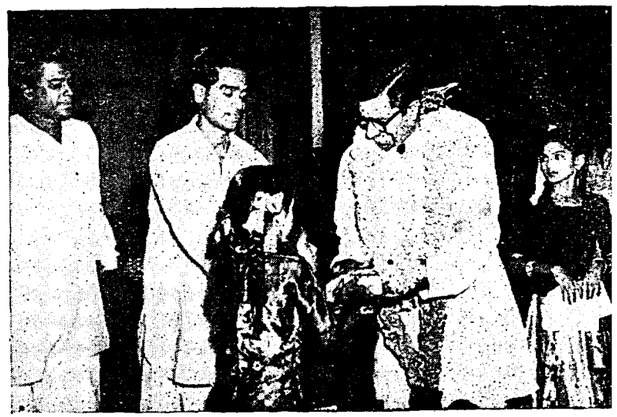
More than 10,500 villages out of 18,000 villages have been electrified, over a lakh power pumpsets are used in farm operations, almost every village with over 300 population has a school, many good roads provide links with the outside world. Advice under the Community Development Programme has been availed of in cultivation methods with excellent results.

New industries and factories that have sprung up in neighbouring townships have provided gainful employment to village surplus population.

The peasant in Madras State to-day is happy. There is now a new confidence in his face and a new spring in his gait, thanks to the Plans.



Governor Bishnuram Medhi inaugurating the Fifth Prize Bond Draw at the Rajaji Hall on September 4, 1961.



Finance Minister Subramaniam, who presided over a flood relief variety entertainment held by members of the Madras Radio Listening Children's Club at the Children's Theatre recently, is seen receiving a sum of Rs. 1,001 representing the proceeds.



A music item during the variety entertainment held by members of the Madras Radio Listening Children's Club.

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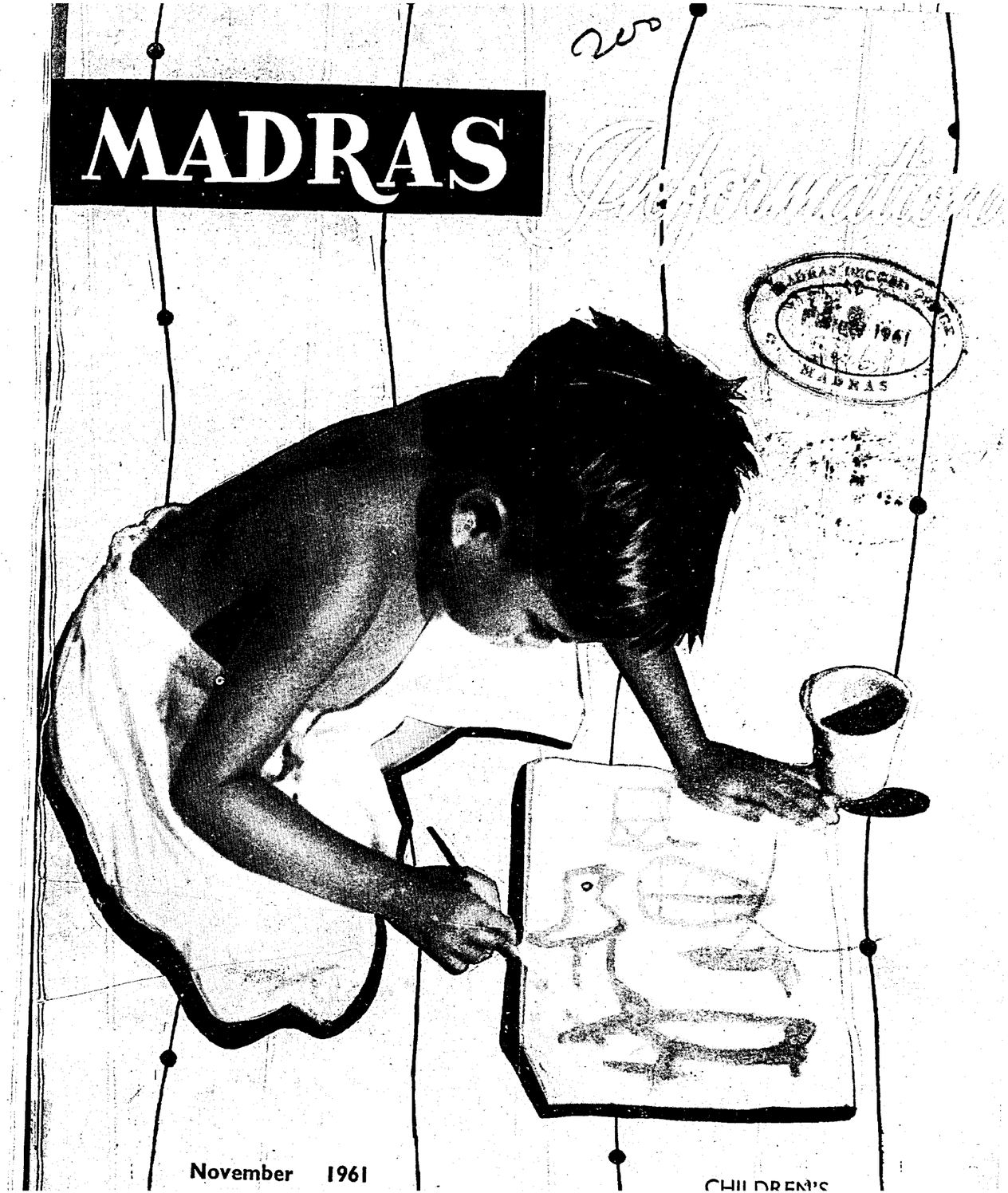


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MADRAS



November 1961

CHILDREN'S

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There are Excellent Reasons why the Traveller down South finds Madras State a veritable Paradise for Tourists.

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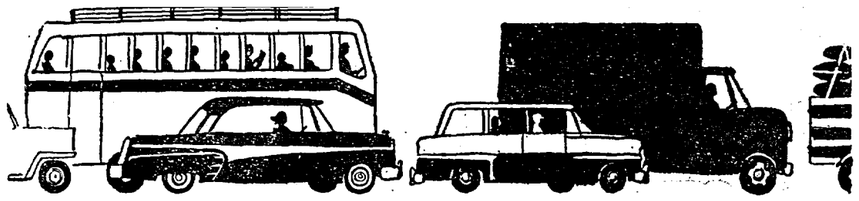
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This month's cover

This month's issue is brought out as a Children's Number in celebration of Children's Day falling on November 14. Naturally our cover theme is the child of to-day, diligent and studious, who will develop into the ideal citizen of tomorrow.



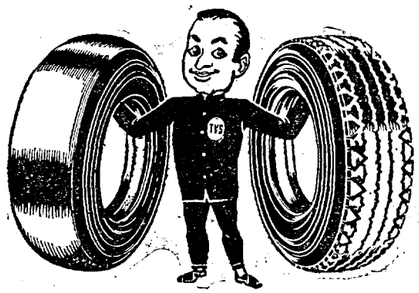
Road Transport Services maintained in spite of tyre shortage

TYRE RETREADING HELPS TO KEEP VEHICLES MOVING

Certain categories of truck tyres are in short supply. With the present volume of tyre manufacture, it may not be possible to meet in full even the replacement needs of Road Transport. Shortage of new tyres has become inevitable.

Today the retreading industry has assumed national importance. It is estimated that last year over 400,000 tyres were retreaded in India saving road transport operators nearly Rs. 21 crores.

Retreading can do much more: If tyres are retreaded in time, that is, when the tread is just wearing smooth, they can be retreaded over and over again; many truck tyres can be retreaded as many as three times. Retreading will not only save money for the operator, but may avert rationing and control of tyre supply.



TVS

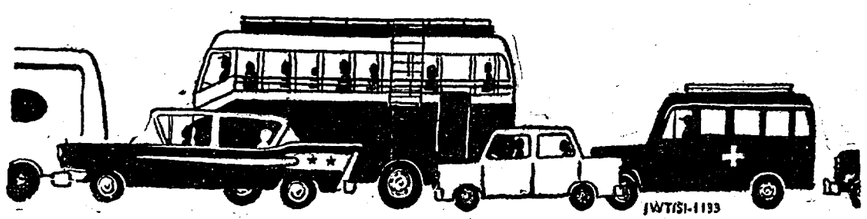
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To The Citizens of Tomorrow

SRI JAWAHARLAL NEHRU

[The Prime Minister Sri Jawaharlal Nehru is very fond of children and has very great faith in them as the citizens of tomorrow. It has become customary to celebrate his birthday as Children's Day and in connection with his birthday falling on November 14 this year selected passages from some of his writings addressed to children are compiled and offered for their benefit in this article.]

Our own country is a little world in itself with an infinite variety and places for us to discover. I have travelled a gerat deal in this country and I have grown in years. And yet I have not seen many parts of the country we love so much and seek to serve. I wish I had more time, so that I could visit the odd nooks and corners of India. I would like to go there in the company of bright young children whose minds are opening out with wonder and curiosity as they make new discoveries. I should like to go with them, not so much to the great cities of India as to the mountains and the forests and the great rivers and the old monuments, all of which tell us something of India's story. I would like them to discover for themselves that they can play about in the snow in some parts of India and also see other places where tropical forests flourish.

A voyage of discovery

Such a trip with children would be a voyage of discovery of the beautiful trees of our forests and hillsides and the flowers that grace the changing seasons and bring life and colour to us. We would watch the birds and try to recognize them and make friends with them. But the most exciting adventure would be to go to the forests and see the wild animals, both the little ones and the big. Foolish people go with a gun and kill them and thus put an end to something what was beautiful. It is far more interesting and amusing to wander about without a gun or any other weapon to find that wild animals are not afraid and can be approached. Animals have keener instincts than man. If a man goes to them with murder in his heart, they are afraid of him and run away. But if he has any love for animals, they realize that he is a friend and do not mind him. If you are full of fear yourself, then the animal is afraid, too, and might attack you in self-defence. The fearless person is seldom, if ever, attacked.

Perhaps, that lesson might be applied to human bei also. If we meet other people, in a friendly way, they a become friendly. But if we are afraid of them or if show our dislike to them, then they behave in the sa manner.

These are simple truths which the world has known ages. But even so, the world forgets and the people one country hate and fear the people of another countr and they are afraid, they are sometimes foolish enou to fight each other.

* * *

I like being with children and talking to them and ev more, playing with them. For a moment I forget tl I am terribly old and that it is a very long time ago sir I was a child.

This beauty and life

I hope you will be more sensible and open your eyes a ears to this beauty and life that surround you. Can y recognize the flowers by their names and the birds their singing? How easy it is to make friends with the and with everything in nature, if you go to them affecti nately and with friendship. You must have read ma fairy tales and stories of long ago. But the world its is the greatest fairy tale and story of adventure that h ever been written. Only, we must have eyes to see a ears to hear and a mind that opens out to the life a beauty of the world.

* * *

I know you are all fond of stories. But I would li you to be acquainted also with the story of India. Tl story was not written in ink, but by the deeds of gre men. It was later that some authors collected fa and wrote the stories of leaders and their activities.



GAMES

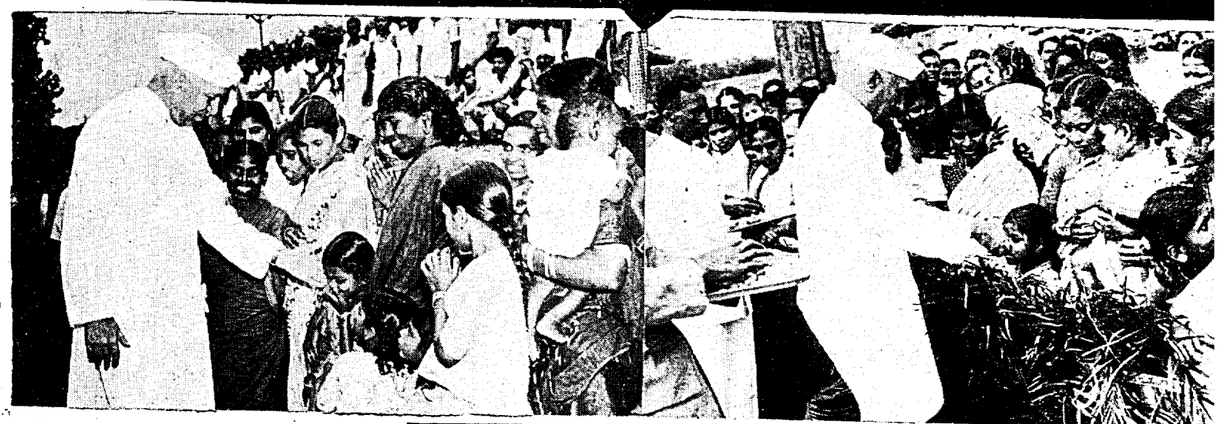


DRAMA





THE PRIME MINISTER WITH





DANCE



AINTING

THE WORLD OF CHILDREN

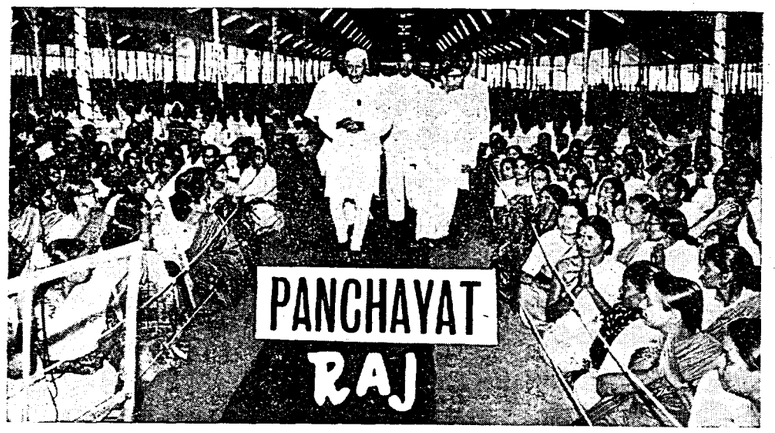




Children



Prime Minister Nehru, who is 72 on November 14, 1961, seems to grow younger with the passage of time. Providing in himself a perennial example for every child to emulate, the Prime Minister seldom misses an opportunity, in the course of his crowded engagements, to pause and exchange a joke with children or demonstrate his affection for them. Pictures show the Prime Minister happy in the company of children whom he met during his recent visit to the South.



SRI BISNURAM MEDHI, *Governor of Madras.*

The change in the organizational structure brought about by the close link between the Panchayats and the Panchayat Unions in the new system of local administration brought about by the Madras Panchayats Act, 1958, is of great significance says Sri Bisnuram Medhi, Governor of Madras. The text of his presidential address in connection with the historic two-day conference of panchayats recently inaugurated in the City forms the subject matter of this article.

Ever since Independence, it has become the nation's gigantic task to build a new India by formulating and implementing successive Five-Year Plans in order to achieve a balanced development of the country in all spheres of activity and to give a better life to everyone by raising the standard of living of the common people. The main aims that have guided our planned development are the building up by democratic means of a rapidly expanding and technologically progressive economy and the ushering in of a social order based on justice offering equal opportunity to every citizen. Everyone in this country is both a witness to, and a partner in, the great revolution that is taking place now in every field of human endeavour. Apart from establishing basic industries and undertaking large scale projects, high priority has been given to agricultural production with a view to achieving not only self-sufficiency but also much higher production in order to meet our demands even during years of unfavourable seasonal conditions.

Our targets in agricultural production have to keep pace with the growth of population and meet the increasing demands for more food and better food. It is necessary to rouse the consciousness of our peasants and cultivators and enlist their willing and active co-operation in the matter of reaching our targets of food production and also in the matter of controlling the rapid growth of population. It is also essential to mobilize public participation in our development programmes under the Five-Year Plans in an integrated manner along with the National Extension Service Scheme of Community Development. It has been increasingly felt that these can be achieved only by a major change not only in the organizational structure of local administration, but also in the entrustment of functions and resources therefor. Thus, the scheme of progressive democratic decentralization has taken shape and the Panchayat has become the self-governing unit of local administration which can play a very important role in the implementation of the vital sectors of the National Five-Year Plan.

Roots in the Past

Panchayats as units of local self-Government have been known in Tamil Nad from ancient days. The Vaikunthaperumal temple in Uttiramerur in Chingleput district contains the most valuable documents on the wall of its plinth throwing a flood of light on the system of Village Government and village administration by the assembly, the qualifications for membership, etc. It will be evident from the contents of this inscription which is more than one thousand years old that the system of administration by the 'Sabha' with its various committees was more ancient than the date of the inscription itself. The inscription is a

Royal Order received by the village regulating the constitution and administrative set-up of the 'Sabha' and its committees and setting forth in detail the procedure for election of members.

It would be interesting to know that the village was divided into twelve hamlets and there were further divisions into wards and the residents of each ward elected representatives through the 'pot-tickets' system. The inscriptions throw light on the rules relating to the conduct of elections, qualifications and disqualifications of candidates, the manner of their choice, appointment of committees, maintenance of village accounts, etc. From these, it is clear that village panchayats had their roots in the hoary past and flourished as centres of corporate life and culture.

Seeds of Democracy

These institutions which, has elements of incipient democracy in them, were destroyed during the early years of the rule of the East India Company. The credit for realizing the importance of shaping new measures towards revival of these institutions goes to Lord Ripon whose resolution of 1882 regarding the association of non-officials in the administration of local institutions led to the passing of the Local Boards Act, 1884, which provided for the constitution of "union boards" for small towns and large villages mainly for the purpose of looking after village roads, sanitation and lighting. Though about 400 union boards were established, it must be remembered the members of these union boards were all nominated.

Subsequently after the visit of the Royal Commission on decentralization, one thousand informal panchayats were established but the position of these panchayats was weak and unsatisfactory as they had no statutory basis. The introduction of simple and elastic legislation to call these panchayats into existence was advocated and election of members to the panchayats was provided in the Madras Village Panchayats Act of 1920 which was the next important measure in the history of local self-Government in this State. The Panchayats were supervised by a Registrar-General and the late Sri N. Gopalaswami Iyengar who became the first Registrar-General played a very significant role in bringing about this enactment. The number of Panchayats by 1928 rose to three thousand.

Background of legislation

By an Act of 1930, the panchayats were brought initially under the Taluk Boards and subsequently under District Boards on the one hand and the Government on the other. The year 1950 saw the passing of the Madras Village Panchayats Act and this was in effect a step towards the implementation of Article 40 of our Constitution which enjoins that the State shall take steps to organize panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-Government.

The future of local administration in Madras State became a subject for further discussion with a view to raise the general standard of efficiency of Panchayat administration and also to cover the entire State with panchayats. The individuality of the village panchayat and its organic contact with the people of the village should be continued and it was felt that at the same time another common organization should be set up for a larger area to take over functions which could not be performed by individual panchayats and to provide other services effectively.

In 1957, a Cabinet Committee was appointed to consider the matter. The Committee recommended, among a number of major changes, the setting up of Panchayat Unions at the development block level. The process of democratic decentralization became the subject-matter of study by a team appointed by the Committee on Plan Projects set up by the Planning Commission which discussed with the State Government its conclusions regarding the future pattern of local administration in this State. The need for a vigorous democratic institution to take charge of all aspects of development work in rural areas was keenly felt. There was a large measure of agreement between the conclusions of the Study Team and those of the Cabinet Committee.

Enlarged functions

The proposal for the abolition of District Boards and the setting up of Panchayat Unions at Block level were embodied in a revised White Paper and placed before the Legislature which set up a Joint Committee of both the Houses of the Legislature with adequate representation to all parties. A draft Bill embodying the proposals after detailed discussion was approved by the Committee, and was passed by both the Houses of the Legislature by active

Sri V. V. Giri, Governor of Kerala, who presided over the 274th Inauguration Day of the Madras Corporation recently is seen in the picture distributing a prize on the occasion.



The principal construction material for most highways s natural soil. The road or bridge is placed upon it and the mbankments are made of it. The soil bed combined with he road pavement should therefore be designed to keep lown the intensity of traffic forces transmitted to he soil at such low value that permanent deformation s avoided. The object of research now is o find the maximum stress that each type of these soils vill carry without significant deformation, and secondly, he load spreading property of various materials, relating heir thickness to the traffic forces and properties of he soils. One way in which this is done by the plate earing test on the subgrade, as the one recently carried out n Mount Road in the City.

The research activities in soils section comprise ssessment of strength of soils in foundation beds, examining ways of improving bearing power of soils and investigating ow soils can be stabilised as an integral part of the road tructure. Particularly for developing low cost roads o serve rural areas much advance has been made after xtensive studies on soils and low grade aggregates with he bituminous materials, cement and lime and other vaste products like fly ash now increasingly available in actories.

Bitumen Surfacing

Almost all the main lines of communications constituting over 7,000 miles are now provided with black topped surface and maintenance of these sections of roads consumes annually over 10,000 tons of bitumen costing about 30 lakh rupees. Every year further mileage is required to be treated with bituminous surfacing to meet the pressure of increasing motor traffic and the requirements of developing interior areas. Along with the problem of increasing mileage, there is the deterioration of surfacings caused by weather resulting in the disintegration of the bitumen coating and stones parting on account of the destructive action of traffic. Bituminous coating does not stick on well with some aggregates and it gets separated by moisture and gets whipped out under traffic. So it has become important to make economical use of the bitumen with a view to extend not only the mileage of roads but also their useful life and that within the limited allotment of funds. In deciding on the best means of using bitumen a wide range of alternatives is available in the materials; in the way they are combined and in the overall thickness of construction.

Uniform Texture

So research is to be taken up firstly in the combination of base and surfacing required for differing conditions of traffic and subsoil and secondly in the design of durable surfacings which will maintain a uniform non-skid texture throughout their useful life. This involves studying of the effect of weather and traffic on the binders and treated aggregates, testing of the suitability of the stones and offering of suitable designs for such pavements.

The Highways Research Station is also studying presently the possibility of using the Tar that may become available as waste in the Neyveli Lignite Fields, for road construction projects, in replacement of the bitumen now being imported.

Bridges and Load limits

In Madras State until recently lorries and load transport vehicles were permitted with a laden weight of five tons. This limit has been raised to nine tons and now there is a persistent demand for allowing heavier loads of 12 tons and over. But the culverts and bridges on the roads are the links which decide the load limit ultimately. These were constructed in the past, some of them over 100 years ago. Their carrying capacity is not definitely known.

For assessing the strength of these bridges investigations consisting of (1) mathematical analysis, (2) laboratory tests on models and (3) actual load tests on bridges are to be taken up. Some of the load tests conducted in the past by the Highways Research Station include the one on Uppodai bridge at Sathur in 1959 and another more recently, on Napier bridge with heavy vehicles of Neyveli Lignite Corporation. Some more load tests on bridges will be conducted shortly in Salem district. The data collected from these load tests help to arrive at criteria for estimation of the strength of the existing bridges to permit heavier loads and to evolve improvements in the design of bridges.

Numerous culverts and bridges on our roads are either narrow or weak and will have to be reconstructed or replaced. Every year a sizable amount of expenditure on roads is being diverted to reconstruction of existing bridges or for new bridge constructions. These programmes will have to be gone through expeditiously to avoid delay and inconvenience to traffic flow. The conventional methods of bridge and culvert construction involve considerable time lag at every stage, from the foundation to superstructure. A suitable method to speed up this construction process has been found quite necessary. An appropriate way of doing this in these days of rising prices, continued scarcity of certain materials and dearth of skilled labour, is prefabrication of the units in a central place and assembling them at the site. This method offers the right solution for the quick and economical construction of bridges and culverts. A start in this direction has already been made for construction of culverts on the National Highways.

Concrete mix

The main construction material in these structures is concrete. Concrete has all along been mixed in 1: 2:4 proportion by volume developing an ultimate strength of about 3,000 lb/sq. in. To effect economy and to control the uniformity, concrete mix is now prescribed in terms of strength standards. With prestressed concrete entering largely in bridge construction, concrete in strength varying, between 8,000 to 10,000 lb/sq. in. will have to be produced involving testing of aggregates for strength, voids and density, in the design of the mix.

The traffic on our roads is increasing in volume, weights and speeds are also going up and streets designed for limited traffic capacities are becoming congested causing traffic delay and accidents. It has become necessary to devise methods of avoiding traffic congestion, to facilitate quicker movement consistent with safety. The subject is complicated involving as it does the road, the vehicle and the road user. What is needed is collection of data and analysing the data statistically. These are accomplished by surveys carried out with special reference to traffic volume speed and movement and by studying requirements of intersections, junctions and parking conveniences. Such a survey, was conducted recently on Mount Road by the Highways Research Station.

Underlying Causes

The design of roads and road structures till recently was based largely on traditions and experience. Research seeks to discover the underlying causes of success and failure by investigating the mechanics of the road structure, the stresses caused by traffic and weather and their distribution through layers of road crust, and the most economical combinations of sub-base, base and surfacing and the effects of strong and weak sub-grades.

This sums up broadly the activities of road research now inprogress in the State and how it helps in the planning, design, construction, operation and maintenance of the various road systems in producing permanent, safer and more economical roads and road structures.

Games for Crippled Athletes

From many parts of the world crippled athletes went to Britain recently for the International Games for Paraplegics organized by the Stoke Mandeville Hospital, Buckinghamshire.

Contestants—Victims of infantile paralysis, the war, or road accidents—were thought until a few years ago to be hopeless cases. Now they competed in all types of events—archery, darchery (a specially devised adaptation of darts and archery), swimming, table tennis, fencing, basketball, snooker, weightlifting, throwing the javelin and putting the shot.

The games were inspired by Dr. Ludwig Guttman, Director of the Stoke Mandeville Hospital's spinal-injury unit. Dr. Guttman has spent years studying the physical, psychological and social advantages of sport for the disables. He started the games in 1948 between teams of disabled ex-servicemen. Four years later, a team of Dutch ex-servicemen entered.

Since then, the scope of the games has expanded enormously. Last year, the games reached the peak of their achievement when they were held in Rome after the Olympic Games. Twenty-one countries took part.



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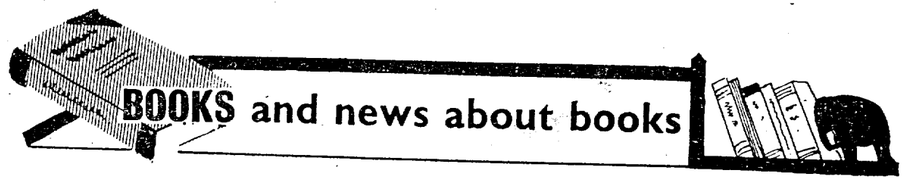


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To meet the need for finding in one place the main lines of India's foreign policy, the Publications Division of the Ministry of Information and Broadcasting, has brought out a book entitled " India's Foreign Policy ".

The book is a compilation of selections from official records of the Prime Minister's speeches and statements in Parliament, replies at press conferences and addresses elsewhere in India and abroad. It covers a period of 15 years from September 1946, when the Interim Government was formed, to April 1961. The majority of speeches and addresses are extempore. In the case of a few, translations from the original Hindi have been used.

The speeches are grouped in thirteen sections. The first ten outline the basic concept of the country's foreign policy and trace the evolution of a specific policy in consonance with these concepts and to meet emerging situations. The last three deal with India's relations with individual countries in Asia and Africa, Europe and America.

The foreign policy of India, according to the Prime Minister, is not of his making but is rooted in her geography, history and culture, as well as the manner in which she attained freedom under the leadership of Mahatma Gandhi. He also points out that the emergence of India from long dependence into freedom is of major significance to Asia and to the struggle for freedom elsewhere. For this reason and because of her schooling in non-violence, India stands for co-existence and opposes war, which in the nuclear age, would be fatal to mankind.

" Peace has been said to be indivisible, so is freedom, so is prosperity now, and so also is disaster." If India keeps herself away from power blocs and military alliances, she is, nevertheless, second to none in her love of liberty. " Where freedom is menaced or justice threatened or where aggression takes place, we cannot and shall not be neutral."

'n Higher Education

Comprehensive information about the courses of study id various other details about colleges in India are available in the 1961 Directory of Institutions for Highe Education brought out recently by the Union Ministry Education.

The Directory provides up-to-date information, as the beginning of this year, about all institutions offerin post-matriculation courses of at least two years' duratio

The publication describes the jurisdiction, Depart ments of Studies and academic terms of the universitie in India together with the medium of examination use



Bulk sample extraction of 2,000 tons of lignite for large scale tests abroad was commenced recently at Neyveli in the presence of Chief Minister Kamaraj and Industries Minister Venkataraman. In the picture, the Chief Minister is being shown sample of the lignite extracted



Chief Minister Kamaraj and Industries Minister Venkataraman with workers at Neyveli.

in each. Similar information about colleges affiliated to Boards of Intermediate Education as well as non-affiliated educational and research institutions are contained in the Directory.

The Directory, which enters the seventh year of its publication, covers the academic session 1960–61. Special attention has been given to institutions providing professional and technological courses. These institutions have been classified according to subjects and the minimum admission requirements and the duration of the first degree courses in each subject have been indicated.

General information about the total intake, reservatio of seats for backward classes and for different States, th fees charged, the last date for submitting applications fo admission and the date of announcement of the sessio etc., in engineering, technology, medical and pharmac courses has been revised and brought up to date for th session 1961–62.

Travelling Book Exhibition

An exhibition of British books on India which will late tour other cities of this country, was recently inaugurate at the All-India Fine Arts & Crafts Society's Theatre i New Delhi. The exhibition has been arranged by th British Council.

This is a collection of some 1,400 books and document collected by the British Council over a period of severa years. The exhibition is designed to give what must b only a small indication of the great wealth of books on a aspects of India published in Britain, most of them betwee the last decades of the 18th century and 1960—the majorit by Britons, but with a liberal selection by Indian author

Earliest in the collectiom is an extremely valuabl edition of Philip Baldaeus' *True and Exact Descriptio of the Most Celebrated East-India Coasts of Malabar an Coromaudel,* printed at Amsterdam in 1672. The mos recent publication is *The Common Law in India,* being th Hamlyn Trust lectures delivered last year in London b the Attorney-General of India.

The exhibition includes in its wide range books on agr culture and forestry; art, architecture, and archaeology communications and civil engineering; economic commerce and industry; education; ethnology; law constitution, and administration; linguistics; literar studies; medicine and medical history; religion an philosophy; science and natural history; sports; topo graphy and travel. There is a section on Englis novels with an Indian background.

Largest section of the exhibition is that on the history o India including a first edition (published between 182 and 1832) of Tod's Annals of Rajastan. The works o W. G. Archer and Mortimer Wheeler are notable amon books in the fascinating field of art, architecture, an archaeology.

Cotton Production

The All-India final estimate of cotton for 1960-61 puts the current year's area and production at 18,971,000 acres and 5,394,000 bales of 392 lb. each of cotton lint respectively. As compared with the partially revised estimates for 1959-60, the estimates for 1960-61 show an increase of 167,000 acres or 0.9 per cent in area and 1,716,000 bales or 46.7 per cent in production. The yield per acre for the current year works out at 111 lb. as against 77 lb., last year, thus marking an increase of 44.2 per cent.

MODERNIZING THE MADRAS Museum

Sri S. T. SATYAMURTI, *Superintendent, Government Museum.*

Thanks to the countrywide movement for the reorganization of museums launched by the Union Government a couple of years ago, the Madras Museum has secured substantial grants both for buildings and equipment. It has made considerable headway in implementing schemes for the modernization and expansion of the Museum. In this article, the Superintendent details the lines on which the public galleries of the Museum have been modernized during the past two years and the work ahead.

ıs Government Museum is the largest and State Museums in India. It was founded in eum of practical Geology and Natural History, ctions on Art, Archæology and Anthropology ed and the Museum came to be recognized centre of research in all these fields in South an unparalleled record of valuable service of popular education and scientific research, celebrated its Centenary in 1951, when the Gallery devoted to Indian art, was organized ıes and annexed to the Museum.

e primary functions of the Museum is the y and interpretation of its collections to the ic. But although the collections of the um are rich and varied, and in some fields Pre-history and Archæology), almost unique, lequate finances has stood in the way of their lay and presentation for a considerably long ince the time of its inception.

y, the annual allotment in the State Budget d of "Furniture and Fittings" for the entire only about Rs. 4,000 and for a large, multi- um with seven expanding technical sections ology, Numismatics, Anthropolgy, Zoology, Geology), each having its own galleries, laboratories, storage rooms and Curatorial offices, this was indeed a low and inadequate provision, and all that could be done was just to construct one or two show cases for the most outstanding exhibits acquired during each year, and to maintain the existing show cases in a state of good repair.

This plan of making display cases piece-meal proved to be most unsatisfactory, and inevitably resulted, in course of time, in the galleries getting cluttered up with as most heterogeneous assemblage of show cases, with all possible variations in shape, size and pattern. Thus, no systematic programme for modernization and standardization of the display cases was possible with the limited finances. As each exhibit was acquired, a show case was made just to suit that particular exhibit in shape and size so that no uniformity in size or pattern could be maintained. It was this lack of uniformity that proved to be one of the main reasons for the unimpressive display, in spite of the fact, that the collections in themselves were of great intrinsic value.

A Serious Problem

In addition to financial stringency, the very nature of the existing museum buildings (parts of which are more than hundred years old) posed a serious problem while attempting to modernize the exhibition halls, for although large

and spacious, they are not architecturally suited for the introduction of the latest methods of display. For instance, there are too many large windows resulting in excessive glare and admitting direct sunlight into the galleries. This is not only highly injurious to the exhibits, but also interferes with their proper display by considerably reducing the available wall space for exhibition and rendering the entire display quite ineffective.

However, if windows are eliminated or reduced, ventilation becomes a problem especially in a hot country like ours. Air conditioning will be the ideal solution, but its prohibitive cost rules it out as a practical proposition at least for the present. The presence of large, clumsy, masonry pillars is another undesirable feature, hampering the uninterrupted view of the exhibits and depriving visitors of that feeling of spaciousness which is so essential for the æsthetic appearance of the gallery. Ways and means had therefore to be devised for adapting these old buildings to suit modern needs if the galleries were to be effectively modernized.

Modernization begun

Fortunately, in recent years, with the increasing momentum of the museum movement in India, and the fresh impetus that museums have been receiving all over the world through organizations like the UNESCO, the Government of India began to realise the needs of Indian museums, and about a couple of years ago, a countrywide scheme for the reorganisation and development of museums was launched. Under this scheme, at least most of the larger multi-purpose museums of the various States in the country became eligible for liberal financial assistance from the Centre. The Madras Museum was also forntunate enough to secure reasonably substantial grants under this scheme during the last two years, both for buildings and equipments, and it has therefore been now possible to start implementing comprehensive schemes for the mordernization and expansion of the Museum.

The baby elephant gifted to a Canadian company in connection with " A Salute to the Commonwealth Show " was seen off at the Madras Airport by Home Minister Bhakthavatsalam.



I have briefly indicated below the lines on which attempts have been made during the past two years in mordernizing and reorganizing the various public galleries of the Museum under the Centrally-sponsored scheme for the Reorganization and Development of Museums.

Although all the galleries of the Museum stood badly in need of thorough reorganization and modernization, yet the work could be carried out only by convenient stages, owing to financial considerations and limitations of staff and materials. Those galleries in which the display was most unsatisfactory and which therefore needed mordernization most urgently were taken up first for the implementation of our reorganizational schemes. Fortunately, the Government Wood-Working Unit at Guindy, to which these items of work have been entrusted, is managing them with commendable skill and efficiency, equipped as it is with up-to-date machinery and a staff of trained technicians.

Economic Botany Gallery

This is one of the two large and spacious Botanical galleries on the first floor. But in spite of its rich and varied collection of economic products derived from plants, it failed to attract sufficient attention from the visiting public on account of the dull and unattractive manner in which the exhibits were hitherto displayed. The exhibits (many of which, by their very nature, are rather drab-looking objects) were spread out in monotonous rows in flat, desk-like cases with sloping glass tops. These cases, with their horizontally exhibited specimens, were occupying the greater part of the available floor space in the gallery, resulting in unsightly congestion and allowing very little moving space for the visitors.

But, with the introduction of the modernized method of display, an almost miraculous change has taken place, and this has now become one of the most attractive galleries in the Museum. A series of uniform, built-in cases have been constructed and installed all round along the four walls within a straight, continuous wooden panelling curved at the corners, and with the large single-plate glass fronts of the cases appearing as neat, rectangular windows in this panel. The interior of the cases is spray-painted with a pleasing sky-blue, and provided with concealed daylight flourescent illumination. The exhibits and labels are mounted directly on the background panels of the cases, thus dispensing with shelves altogether. The old sloping, desk-like cases are thus being gradually eliminated, leaving the entire central floor space in the gallery free for the visitors to move about.

Ventilation has, of course, been necessarily reduced, but arrangements have been made to allow a continuous, easily accessible passage behind the cases all round the hall, close to the outer walls, so that the windows could be still kept open, admitting fresh air. In course of time, this hall will be equipped with exhaust fans and air circulators to add to the comfort of the visitors. The entire scheme relating to this gallery cost about Rs. 28,000.

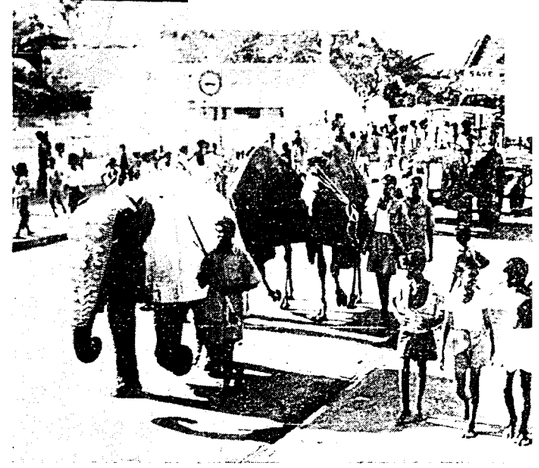
The Birds Gallery

Birds have a great æsthetic appeal to the common man by virtue of the exquisite beauty of their colour and form, and the Madras Museum possesses one of the richest collections of birds in India, systematically very complete and representative of the entire avifauna of South India. Yet, unfortunately, their display, casing and arrangement had been somewhat disappointing till recently. There were no habitat groups at all worth the name, and even the show cases for the few nesting groups had glass on all the four sides or on three sides, without any pictorial background painting or modelled foregrounds to suggest the habitat of the birds. The systematic or classificatory series of birds were displayed in straight, awkward rows on shelves in large, old-fashioned, inconveniently deep show cases with unwieldy glass sliding doors which had numerous wooden cross frames hindering the unobstructed view of the exhibits.

Under the present scheme of modernization, two very impressive series of attractive, built-in show cases have been installed within a continuous panelling on the extreme left and right sides of the hall along the walls to begin with. Each of these series consists of nine large cases, among which cases containing classificatory displays alternate with dioramas (i.e., cases depicting birds in their natural haunts, with scenic painted backgrounds). The interior of the classificatory or systematic cases are spray-painted with a pleasing pale-green, while the alternating dioramas are much deeper and have curved backgrounds painted with appropriate scenes suggestive of the natural habitat of the birds. This method is now being increasingly employed in all the larger museums of the West.

Touch of Realism

All the mordernized show cases now installed in the bird gallery (both dioramas and systematic cases) have been provided with concealed internal fluorescent illumination and have large, single sheets of plate glass in front, affording a clear and uninterrupted view of the exhibits. The birds in the systematic cases are fixed directly to the background panel of the case without any shelves, taking care to see that they are well spaced out and not arranged in straight, artificial rows. The shelfless method of exhibition has been highly commended, and is very effective in helping to break the monotony which invariably results when birds are perched upon shelves in straight rows.



Picture taken during the Wild Life procession in the City during Wild Life Week celebrated recently in the City.

So far, four habitat groups of birds in this modern style have been successfully prepared and installed in their appropriate places in these modernized units, namely, storks and egrets, night herons, gulls and terns and the grey jungle fowl, and two more are expected to be completed shortly. They look so impressive in their natural settings created by the painted backgrounds and modelled foregrounds with appropriate vegetation and other accessories that they lend a touch of realism to the entire gallery. In course of time, it is hoped to extend the installation of such modernized built-in cases over the entire gallery of birds, introducing several new habitat groups and completely eliminating the old unsuitable cases with shelves and clumsy wooden partitioned glass fronts. The cost of the two modernized built-in units constructed so far, consisting of eighteen cases, inclusive of six dioramas, is estimated to be about Rs. 26,000.

Ethnology and Industrial Arts

Similar mordernized, built-in cases, with concealed internal fluorescent lighting, but with different interior colour schemes have been constructed in the Ethnology and Industrial Arts Galleries. In the Ethnology Gallery, the modernization of the display has been most effectively accomplished by the installation of a series of large, capacious, fairly deep, built-in illuminated cases within a uniform continuous front panelling, and spray painted inside with a warm, creamy-yellow colour which shows up to the best advantage in the white fluorescent illumination that has been used in these cases in combination with daylight fluorescent tubes.

The weapons, ornaments, musical instruments, models of tribal dwellings and other objects pertaining to the material culture of the various tribal folk are attractively

[illegible] by enlarged photographs of typical men and women of the respective tribes, each case being devoted to a separate tribe. The cost of modernization in these two galleries amounts to more than Rs. 50,000. Eventually, it is proposed to extend the modernization in similar lines to all the galleries in the entire museum, introducing exhaust fans and air circulators, as far as possible, to solve the problem of ventilation.

The Children's Gallery

Another outstanding development effected in the recent past at the Madras Museum partly with the aid of Central financial assistance is the newly organized Children's Gallery. It is a particularly colourful section of the Museum meant specially to cater for the needs of children. It consists of a series of uniformly constructed, modern, illuminated show cases containing a simplified series of exhibits of special appeal to children. An attempt has been made to present the child with a glimpse into the entire panorama of life, though on a greatly abbreviated scale, and, as far as possible, each exhibit has been designed, arranged and captioned so as to tell a connected story.

The series begins with an impressive portrayal of the story of the origin of the solar system and the earth, followed by displays illustrating the mineral wealth of India, miniature models of extinct animals set in their natural haunts in attractive dioramas, the story of early man and his tools, and the variety and sequence of animal forms on this earth. Models illustrating the various organ systems of man and other animals, costumes of India; and the story of the evolution of human transport are also graphically displayed in suitable settings.

The Museum possesses a well equipped Chemical Laboratory for the conservation of antiquities by various chemical and electrolytic methods, and during the past year, this Laboratory has been expanded, with Central aid, by the addition of a two-storeyed extension to the existing block which was becoming congested and inadequate to meet the requirements of a large and growing institution. The newly built extension of the Laboratory is now being equipped with suitable furniture and fittings and arrangements are being made to equip it with up-to-date apparatus such as mettallurgical microscope, analytical balan ces spectrophotometer and an X-ray unit for large scale analytical and conservatory work so that the Laboratory could be made a centre not only for the routine preservation and conservation of antiquities, but also for research and experimental work on problems of preservation and restoration of Museum objects. Two new buildings—a Natural History Block, and a modern gallery for the Museum's well known collection of South Indian Bronzes are also under construction to accommodate the ever increasing collections.

The past two years have, therefore, witnessed an unprecedented record of progress and activity in the Museum by way of expansion and modernization. During the years of the third and subsequent plan periods, the schemes that have now been so successfully commenced will be continued and implemented in convenient stages according to a phased programme. When the entire Museum is completely modernized and expanded, it may rank as one of the most dynamic and up-to-date centres of research and popular education in the country.

Teachers' Training in Tribal Dialects

The Central Government proposes to start an Institute to train teachers in tribal dialects and prepare textbooks in tribal languages. A sum of Rs. 5 lakhs is likely to be set apart for this purpose in the Third Plan. It is also proposed to open during the Third Plan about 450 Special Tribal Blocks at an estimated cost of Rs. 25 crores to cover almost all the tribal population. These Special Blocks are aimed to spur the ordinary programmes, in the fields of education housing, cottage industry, etc. A Special Study Group has already been constituted to report on the progress made by the "Backward Classes", particularly the Scheduled Tribes, in the field of co-operation in the First and Second Five-Year Plans. Another Study Group has also been set up to study the question of ensuring an adequate share of the benefits under all the development programmes for the weaker sections.



1. Singl· modernized case in the bird gallery.
2. The series of modernized cases in the bird gallery.
3. Modernized display of ethnological exhibits showing Toda huts, ornaments and weapons.
4. General view of the modernized show cases in the Economic Botany gallery
5. General view of the newly organized Children's Gallery.

Prime Minister's Visit

During his recent visit to the South, the Prime Minister fulfilled a crowded round of engagements. Pictures show : (1) With Chief Minister Kamaraj at the A.I.C.C., Session at Madurai. (2) Madurai State Drive. (6) Madurai Public Meeting. (8) Having a Panoramic view of the Parambikulam Project site. (9) Arrival at Madras. (12) Addressing the Panchayat conference. (3) At the Women's welfare conference. (11) At the Cancer Institute. (10) Marina Public meeting. (4) and (5) Unveiled Chief Minister Kamaraj's statue. (7) Inaugurated ECAFE Seminar on Road Passanger Transport. (13) Farewell at Meenambakkam airport.

Technical Training Week





1. Technical Training Week was celebrated in the City recently as part of the All India Technical Training Week. Chief Minister Kamaraj inaugurated the celebrations at tha Rajaji Hall.

2 and 3 In connection with Technical Training Week, an exhibition was also organised. Pictures show Chief Minister Kamaraj Inspecting sections in the exhibition.





4. The nurse and the teacher, like the technician in the factory, are also technicians, in a broader sense. In the picture the Chief Minister is seen in the section relating to the Medical services.

DEMOCRACY and the civilian

SIR PAUL GORE-BOOTH, *British High Commissioner in India.*

In this article, extracts from the lecture in the Feroze Gandhi Memorial Lecture series recently delivered by the British High Commissioner in India at New Delhi on "M.P.'s and Civil Servants" are given. Sir Paul deals with the relationship between the public servant or official and the elected representatives of the people. An essentially heavy subject has been dealt with in a style that is at once diverting and illuminating.

My great disadvantage in speaking to you is that, since I left the University, nobody has ever elected me to anything. I must hasten to add that this is at least partly because I have never asked anybody to elect me to anything. I do not wish you to think of me as a perpetually unsuccessful candidate. I have, however, as a public servant, had the privilege all the time of working for the Queen in Parliament. Put less technically, this means that the affairs in which I have had any part have always derived from the policy of Government, and therefore in the last resort have necessiated the approval of Parliament. It seemed to me, therefore, that the small contribution I could make to this occasion might be to say something, essentially in British terms, but with a few comparisons from abroad, about the relationship between public servants or officials and Parliament.

There are, of course, all sorts of extremes in this relationship. One recalls them with a certain amusement, because either they do not happen very often, or they are not entirely true. One which concerned me very personally was an occasion in which I sat in the officials box in the House of Commons and listened in agony to the, unfortunately, not extremely successful efforts of a Minister to explain and defend an agreement which a delegation led by me had just negotiated with a foreign Government. The agonising thing was that the Minister nearly got it all right, but failed to have one or two details on the tip of his tongue. There was no method of briefling him from the box in time.

But these agonies are rare. The day-to-day relationship is less dramatic, but even within this less dramatic daily work, there are still some extremes. There is always, in London, a certain amount of mutual banter between Ministers and officials. The extreme of the Ministerial view is something like this. It is alleged by politicians in moments of frustration that, if officials decide that they do not like a Minister, they employ one of two stratagems. Either they give him no work at all and simply say, "Well Sir, there really is nothing which demands Ministerial attention", or alternatively they send every file in the office to the Minister until he asks them to take the things away.

Constructive Relationship

The Civil Servant's supposed standing grievance is of a different order. It consists in the dry proposition that any policy success is due to the genius of the Minister while any failure is directly traceable to the bungling of his officials. So you see that both sides have material with which to tease the other. But these are only the amusing fringes of a serious and constructive relationship.

The relationship is not, of course, the same in all countries. I understand, for instance, that in the Peoples' Republic of China there is something of a reversion, in Communist terms, to the old Chinese tradition of a unified structure of policy and administration, in which all individuals are carefully allotted precise grades, and there is no worthwhile distinction between what, in most democratic countries, would be called the legislature and the executive.

In the U.S. you have an interesting compromise. Since the members of the Cabinet (who, by the way, are not called Ministers) cannot, under the Constitution, be members of the legislature, the American system produces at top levels a brand of people who are neither exactly politicians, nor exactly Civil Servants. They normally belong to the party in power (though occasionally non-party people are used; a striking current example is that of Mr. Douglas Dillon, who has been Under-Secretary of State in the State Department under a Republican Administration, and is now Secretary of the Treasury in a Democratic Administration).

In British eyes, and indeed in Indian eyes, this situation contrasts strangely with the strict distinction we draw between Civil Servants and elected politicians occupying public office. It is, however, fair to say that the advantages are not all on one side. The American system permits the Administration to use people of high standing in the community who are not accustomed to, or normally occupied with, party political matters, to contribute directly to the work of governing. They bring freshness into the bureaucracy and expertness into politics. We know, of course, the objections— the risk of discontinuity not only in policy, but also in administration, the risk, much less than it used to be, of merit losing out to the spoils system and the danger that people may be chosen who will prove, in their contacts with individual Congressmen and Congressional Committees, not to possess even the minimum of political sensitiveness or sagacity. But I am only concerned to note that there are more ways than one of conducting relationships between the executive and the legislature.

Absolute loyalty

The essence of a Civil Service is that one cannot half work for the government. One can have mental reservation on individual points. One has the right, and indeed the duty, to make one's objections to and criticisms of policy known and felt until such time as a decision has been taken. But from that movement on, as in the Armed Forces, obedience must be absolute.

There is the more subtle counterpart to this loyalty, which is the loyalty of Ministers to their Civil Servants. It is more subtle, because it is not actively called upon all the time. But demands on it do arise. Discipline must be maintained within a Ministry, but a divided house cannot efficiently serve the country. People often ask why the late Ernest Bevin evoked a quite extraordinary devotion and affection among those who worked for him. He had many qualities which inspired admiration, but the quality which inspired affection was his readiness at a difficult time publicly to defend those who worked for him from attack and innuendo from outside.

The personal relationship between a Minister and his senior advisers is a fascinating one. It is, or can be one of close personal friendship. But this personal friendship, which can become uninhibited, for instance, after retirement, is always tempered in active life by two reservations. The Minister, having almost certainly been a Minister far less time than his senior Civil Servants have been Civil Servants, is bound to have a certain slightly impatient respect for the experience and caution of his advisers. The advisers, while realising that they may know more about the subject than the Minister, will, if they are wise, always remember that the Minister represents the final authority of democracy, namely, Parliament. The Civil Servants may be objectively wise and well-informed; but the Minister is the instrument of finally getting the things done or prevented from being done, because he is part of that done final resort of democracy, the voice of the people.*

Practical Politics

The personal relationship is well described in Lord Morrsion's excellent book "Government and Parliament", as follows: "It is my general experience that if the Minister-in-charge knows what he wants and is intelligent in going about it, he can command the understanding co-operation and support of his Civil Servants. The kind of Minister who is most tiring to the officers of a Department is the Minister who does not know his own mind and cannot make it up. If the policy of a Department is hazy, vacillating, and in effective, it is, after all, the responsibility of the Minister; it is quite as likely to be his fault as that of his Civil Servants."

It is time now to look a little more deeply beneath the surface of the personal relationship I have described. The Minister, as I have already suggested, must be the judge whether a particular policy or piece of legislation is going to be acceptable to Parliament, and therefore whether it is practical politics to undertake it. The Civil Servant's job is to know the history of the question, the pros and cons in the national interest of taking a certain line, and the effect which it is likely to have on the policy or economy of the country, abstracted from purely emotional and party political considerations. However, the two points of view clearly cannot be wholly separated. If the Minister has a series of policies which are most attractive, but impossible to administer, obviously his department will end in a hopeless muddle.

Equally, if the Civil Servant insists upon producing ideas which are admirable in theory and which Parliament or public opinion would not look at for five minutes, he is not doing his job, he is simply enacting a parody of it.

* I am aware that under constitutions which provide for appeal to a Supreme Court in constitutional matters, this not absolutely accrue. but it is accurately descriptive.

Therefore, the Minister must have some sense of administration, and the Civil Servant some sense of politics.

From the relationship between Civil Servants and Ministers, which is fairly clearly definable, we come to the less definite field of the relationship between Civil Servants and private members. Here we must surely be guided almost entirely by common sense. On the one hand there is clear advantage in personal contact. It is important that politicians should realise that Civil Servants are not all troglodytes or cave-dwellers, and that Civil Servants should understand that politicians are not all charlatans or gas-bags. Personal acquaintance in this sphere in almost all cases heightens mutual respect— respect for the objectivity and knowledge of the good Civil Servant, and respect for the quickness of apprehension and versatility of the good politician.

But clearly there is also a need for caution. The right person to explain policy to politicians is the politician on the particular job—in other words, the Minister, his Deputy Minister, or Parliamentary Under-Secretary. Therefore there is a moment beyond which the private member should refrain from asking questions of the Civil Servant and the Civil Servant if asked, will have to refrain from answering and refer the questioner to the Minister.

Summing up

If I can now gather the threads together, it would be something like this. A proper relationship, official and personal, between the Civil Service and politicians is a vital element in the smooth working of democracy. It needs good sense as well as good fellowship on the part of all concerned. In so far as we are speaking of the relationship between Ministers and officials, it exists, so to speak compulsorily, and therefore the rules of conduct are now fairly clear and well known, though both sides need constantly to refresh their memories about what these rules are. Between private members and officials the rules are less clear, if only because such relations are optional rather than compulsory and so much depends on individual backgrounds and personal as opposed to official contact. But practice makes as perfect as you can make anything, and what might be called a "comfortable" relationship between the two groups is a sign of efficiency and maturity.

What really matters

There is a story which is probably now forgotten, which deals with the time in the 1920's when the first Labour Government took office in the United Kingdom. Up to that time the Minister in a particular Department had been accustomed to summon his Private Secretary by ringing a bell at a respectable hour, whereupon the Private Secretary came in and stood respectfully to attention until the Minister looked up from his work and addressed him formally as "Mr. So and So". The story goes that when the first Labour Government came in, the Minister, used to factory hours, arrived long before his office staff, who sat in some trepidation next door wondering when they would be summoned and how. Eventually the door between the two offices was pushed slightly open, a head appeared round it, and a good factory voice said: "Ere!"

It does not in the least matter whether the relationship is on the basis of "Mr. So and So" or "Ere!", as long as there is an atmosphere of co-operation, a certain renunciation of egotism, and a feeling by each side that the other, whatever its difficulties, is doing its best to ensure that democracy will work. If this feeling does exist, and mutual respect is enhanced by a reciprocal sense of humour, the relationship can be a very happy one— Perhaps I am saying that despite the haste and strain of modern life, a degree of happiness in Government is necessary to its health and welfare and that of the country—Courtesy: B.I.S.

Fellowships for research in Nuclear Physics

The Department of Atomic Energy has decided to award a few junior and senior research fellowships of the value of Rs. 250 p.m. and Rs. 400 p.m. respectively, for study and research in nuclear physics and cosmic rays at the various universities and research institutions in India. In addition, the fellows are entitled to get a grant not exceeding Rs. 1,000 per year for purchase of special equipment and materials. The Universities will be paid 15 per cent of the basic value of fellowships for meeting expenditure on overheads. The fellowships are tenable for a period of two years and may be extended for a further period of one year, in special cases.

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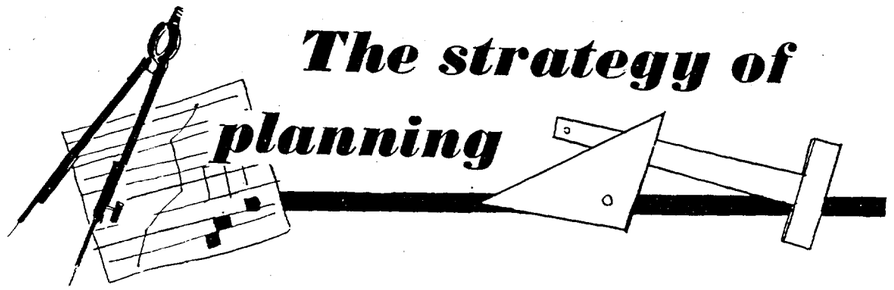
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The strategy of planning

SRI P. S. LOKANATHAN.

In connection with the Asian Economic Planners' Conference recently convened by the ECAFE Organisation at New Delhi and inaugurated by the Prime Minister, this feature article on Planning in India discussing the 'strategy' adopted in the light of the objective of bringing about a socialistic pattern of society is presented. The author not only examines the nature of the strategy of development that has been adopted but also deals with points about which doubts have been expressed.

During the last few years there has been a lot of discussion about the strategy of development that India should adopt in her planning. Within the country as a whole there has emerged a general agreement on the strategy of development implicit in the First, Second and third Five-Year Plans. However, there are still one or two groups of opinion that believe that the strategy of development adopted is inimical to the survival of democracy and also implies an undue burden of the costs of development on the present generation, as opposed to the future generations. In this article we propose to examine the nature of the strategy of development that has been adopted and consider whether the doubts that have been expressed about are correct.

The term strategy refers to the means and the order of priorities in general that should be followed to achieve the desired ends. The First Five-Year Plan contains no clear cut formulation of any strategy of development. (It does contain a long run incomes projection but this does not rest on a specific strategy of development.) The Second Five-Year Plan marks the first attempt to work out such a strategy and to relate it to long-term economic growth. In the Third Five-Year Plan the strategy is expounded in clear cut terms.

The objective

The nature of our strategy for development rests on the ends aimed at. The objective is the establishment of the socialist pattern of society in which the social objectives laid down in the Directive Principles of the Constitution would obtain.

"The State shall in particular direct its policy towards securing, (*a*) that the citizens, men and women, equally have the right to an adequate means of livelihood, (*b*) that the ownership and control of the material resources of the community are so distributed as best to subserve the common good, (*c*) that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment".

These objectives are to be achieved within a democratic social order in which justice, social economic and political, shall inform all the institutions of the national life".

Our strategy of development takes a long-run perspective of 25-30 years instead of one of five years. Each Five-Year Plan is not a unit in isolation but part of the total process of development in which the priorities and targets of each period should link up with a longer perspective.

Perspective needed

The importance of such a long-run perspective is that policies have to be adopted which from the short point of view appear to be wrong and costly. Alternative policies, which give superior results in the short run should, however, be compared by considering their long run consequences. The objective is not to obtain maximum increase in output over a short period of five years but to obtain the maximum rate of growth of output over a period of say, 30 years. The pattern of investment which would give the maximum short-run increase in output is not the pattern of investment which gives the maximum rate of growth. Many of the critics of the strategy of Indian development confuse

between these two. Their proposals would probably result in a greater increase in production in the immediate future but would ultimately result in a smaller rate of growth of the economy over any extended period of time.

The question arises: Is it proper on the part of our planners to choose a long-run perspective ? A look at the Directive Principles of State Policy immediately shows that it is so. The objective therein laid down cannot be fulfilled by any policy that leads to a mere maximisation of income over, say, five years. An accelerating rate of growth over a period of , say, 30 years would appear to be necessary for any significant rise in the standards of living and decline in the degree of unemployment in our country.

Basic Element

It can be shown here from relatively simple models of economic growth that a pattern of investment that concentrates on the development of an investment goods sector in the initial period leads to a more rapid rate of growth of investment (and ultimately of output) over the long run. Thus, given the long-run perspective, it immediately follows that the rate of growth may be maximised by a relatively rapid development of basic and heavy capital goods industries in the initial periods. This is the basic element in the strategy of our Plans, and it appears to be fundamentally sound.

The second plank of our strategy for development is related to the first. The effort to develop basic and heavy industries and machine-building capacity is also justified by the fact that the development of these industries is an essential condition for a self-sustained growth. For industrialisation of the type that is envisaged leads to structural change in the economy and imparts a momentum for development.

Imports Saving

In the transitional period the development of the capital goods sector, however, involves a deficit balance of payment. The machinery, basic raw materials and other commodities necessary for the building up of capital good-industry cannot be produced at home and have to be imported. India's major export commodities, tea, jute, cotton textiles, do not possess much scope for expansion and therefore there is no way in the immediate future of increasing export earnings fast enough to match the rise in demand for foreign exchange. This leads to an emphasis on the development of imports-saving industries. The essential idea is that capital goods which have got to be imported now should ultimately be produced at home. India should be self-sufficient in her production of capital equipment and basic raw materials.

Chief Minister Kamaraj recently opened a bridge at Tirukkoilur.



In the transitional period reliance on external assistance is necessary because of the gap between requirements and earnings. Ultimately, however, the devolopment which takes place as a result of this external assistance would itself remove the need for such assistance.

A Question

The question may be asked whether it might not be better to develop the export sector of the economy first, and then use the increased foreign exchange earnings to finance the development of a capital goods industry. However, it is obvious from the considerations that have been outlined earlier that given the structure of the Indian economy with its very narrow and limited industrial base, the development of the export sector of the economy before the development of a capital goods producing sector would lead to a slower rate of growth in the long run.

The maximisation of the rate of growth over the next two or three decades required the initial emphasis on basic industry. Ultimately, of course, these basic industries themselves and the industrial development with them would give rise to the growth of new types of exports. The development of the export goods sector, therefore, will succeed and not precede the development of heavy industry.

Reliance on aid

Thus the heavy reliance on foreign assistance that is assumed in our strategy of development appears to be justified in the long view. This is particularly so if we also remember the change in international social outlook during the last two decades. The development of underdeveloped areas has been recognised and accepted to be a major responsibility of the developed nations of the world. The flow of developmental aid during the last ten years has been of such a magnitude that a plan strategy based on foreign assistance does not appear to be misconceived.

For instance, there was a feeling of pessimism when the Draft Outline of the Third Five-Year Plan was published that the magnitude of foreign aid that would be required for the implementation of the Plan was quite unrealistic. However, the way in which the developed nations of the world have joined together to ensure the flow of the required quantity of foreign assistance to India for the initial years of the Third Plan is heartening and augurs well for the future.

Of course it is a basic objective of the strategy of development to create conditions in which dependence on external assistance will disappear as early as possible. The development of new lines of exports takes some time. A beginning is being made and a strict policy of export promotion to go with a policy of restraints on domestic consumption has been taken up for the first time in the Third Plan.

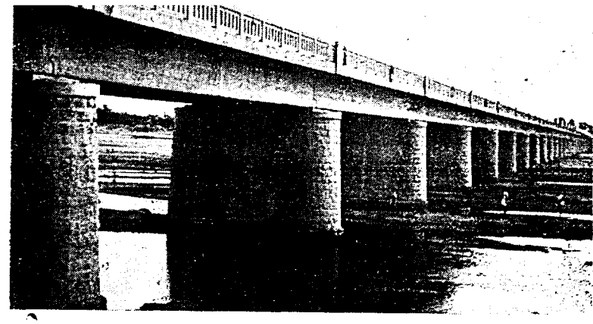
Food Self-sufficiency

A third element in the strategy of Indian economic development is the emphasis on the attainment of self-sufficiency in foodgrains. Development of agriculture is given the top priority. Agricultural production is sought to be increased through various measures. The emphasis on self-sufficiency in agriculture does not flow from any narrow ideas. It is merely a recognition of the fundamental importance of sufficiency of food grains in any attempt to raise the standard of living of the masses. Famine, food shortages and scarcity have to be completely wipped out and the reliance on imports of foreign foodgrains, which have perforce to receive priority over the basic commodities required for the rapid industrial development, has to be eliminated. Once the power to produce enough has been firmly established, reallocations within the agricultural sectors will become easier.

In addition to these purely economic elements in the strategy of development affected in India, there are a number of other factors which have to be considered. As has been indicated, planning has both social and economical objectives. The social objective cannot be obtained simply by maximisation of the rate of growth. Actually it is conceivable that there is some conflict between the achievement of the economic and the social objectives. This conflict is particularly important in the short run. There are elements in our strategy of development which seek to reconcile this conflict.

Public Sector

Since our objective is a socialistic pattern of society, one important aspect of our strategy of development is the development in the public sector. The public sector is developing not only in the interests of rapid growth but also with the idea of preventing undue concentration of resources in private hands. Particularly in industry, the Industrial Policy resolution of 1948 and 1956 chalked out certain guide-lines for the development of the public sector and the Plans show an advance roughly along these lines. It is estimated that the public sector which is responsible for about ten per cent of the net output of manufacturing industry in 1961 would be contributing 25 per cent of the net output by 1966. However, in this field the approach of the State has not been dogmatic but pragmatic. The elasticity and adaptability that mark the policy are indicated by the approval to fertiliser plants in the private sector.



The recently opened bridge at Tirukkoilur.

Another factor in our strategy of development is the emphasis on regional economic development. From the Second Plan onward the concept of regional balance has played an important part and special attention is being paid to the development of depressed regions. The concept of regional economic growth of course may conflict with maximisation of total growth, but again a balanced and pragmatic approach has been adopted.

Small Scale Industries

Emphasis is also laid on the development of small-scale industries. These industries are encouraged for several reasons, none of them relating to the maximisation of the rate of growth. In the first place they lead to the creation of more employment. Secondly, they are permitted in the interest of decentralisation of economic activity. And thirdly, they are expected to lead to the development of entrepreneurship. It is of course true that these objectives may not have been attained to the fullest extent. However in the strategy of economic development, the development of small-scale industries plays an important part and its significance must be recognised.

One may conclude that on the whole the strategy of development adopted in India is correct and likely to lead to the attainment of the declared objectives. Not only are the basic ideas sound but the absence of dogmatism and rigidity is a desirable feature. It will not be any mistake in strategy that would create difficulties as much as a failure to face the normal and attendant problems of growth emerging from time to time, including those of administration and implementation.

—Courtesy "Yojana"



Sidelight on PANCHAYAT Conference

SRI V. SIVASUBRAMANIAM, *Senior Entomologist, Corporation of Madras.*

Far too often a comfortable situation is just taken for granted and no thought spared for possible labours that might have gone into its preparation. Among the responsibilities for making the arrangements for the Panchayat Conference as thorough and perfect as possible, one particularly heavy assignment fell to the lot of the Madras Corporation. And that was to free the camp and conference site on the banks of the Cooum river and elsewhere completely from insect nuisance of any type—a big assignment indeed. How the Entomological Unit went about this business and succeeded forms the subject matter of this article.

The Island Grounds and the areas around the Loyola, 'achayappa's, Queen Mary's, Presidency, Engineering and 'eachers Colleges were affording a place of quiet and peace-ul retreat to the insect world of that area of Madras, when his peace was rudely shaken by the orders that went forth :om the Commissioner and Health Officer, Madras Corpora-ion, that all these areas should be subjected to "Operations–Extermination". The orders were " You have ten days; here should be no flies, no mosquitoes, no insects of uisance ". This was in connection with the two-day 'anchayat Conference inaugurated by the Prime Minister f India on 8th October 1961.

Measures were immediately commenced and intensive nd extensive operations to exterminate the flies, mosquitoes nd other insects from the areas concerned taken up. A uffer zone was drawn around each area and this zone as ell as the concerned areas were brought under the scope f control. Quite early during the operations, it was oticed that so far as the Island Grounds area was concerned ie biggest problem was not the extermination of flies and iosquitoes—which in itself was a large order—but one of xterminating the small insects called " Chironomes ".

These insects resemble mosquitoes to the common eye, but are non-biting. While they are harmless they are of utmost nuisance value. They are found to be breeding in millions in the Cooum River. The entire Island Grounds area was full of these insects. As a matter of fact, anybody walking through the grounds even during day time, had these insects crawling all over his body. Put a light on and they clustered around in millions.

The operations

Since the conference was not a conference of Entomologists who could be expected to say " Oh, Chironomes, they are gabsolutely halmless " and since it was decided as a polic by Government to serve only vegetarian food to the dele-ates, it was decided to exterminate them and see that they food did not become non-vegetarian on account of these insects getting mixed up with the food.

The " Operations—Extermination " was a four-pronged drive : (1) Against flies ; (2) Against mosquitoes ; (3) Against Chironomes ; and (4) Against other insects.

Flies.—The control and extermination of the house fly which is all pervading, was attempted by eliminating dung and garbage heaps and other situations which are the breeding places of flies. Wherever such breeding places of flies could not be removed or destroyed, they were sprayed with insecticides to kill all the maggots (stage in the life of flies from which adult flies emerge). Along with this, killing of all the adult flies already present was also taken up.

Mosquitoes.—Mosquitoes are everywhere, and they were there also. By means of extensive and intensive opertions, against the larval stages and the adult mosquitoes, complete eradication of these was achieved.

The Biggest Problem

Chironomes.—These insects posed the biggest problem since they were there in millions, and extermination of these had to be achieved in the short time of a week. The larval breeding places of these insects were traced and were treated with larvicides to kill them. The adult chironomes were crafty. They refused to rest in places sprayed with D.D.T. and climbed to the roofs of the thatched sheds ; many rested on the ground itself. How to kill them was the problem. To achieve this, night squads were organized and these night squads were given the work of killing these insects which came flocking around the lights. Work was carried up to 12 o'clock midnight and further, and the Corporation staff put forth 18 hours of continuous work from early morning every day. In spite of these measures, it did not appear as though the numbers were being diminished. The more we killed and we killed them in billions (not millions) the more seemed to be there, and just when we were losing heart, the measures began paying dividends. The number of chironomes came down considerably by 4th October. Coupled with the day and night operations of killing them wherever they rested and flocked, and the anti-larval operations, we seemed to reach a comfortable stage by 5th. On 6th a few were noticed. On 7th the entire ground was free of these insects.

All types of other insects, biting and non-biting, spiders etc., were also completely destroyed in the process of carrying out the measures against flies, mosquitoes and chironomes.

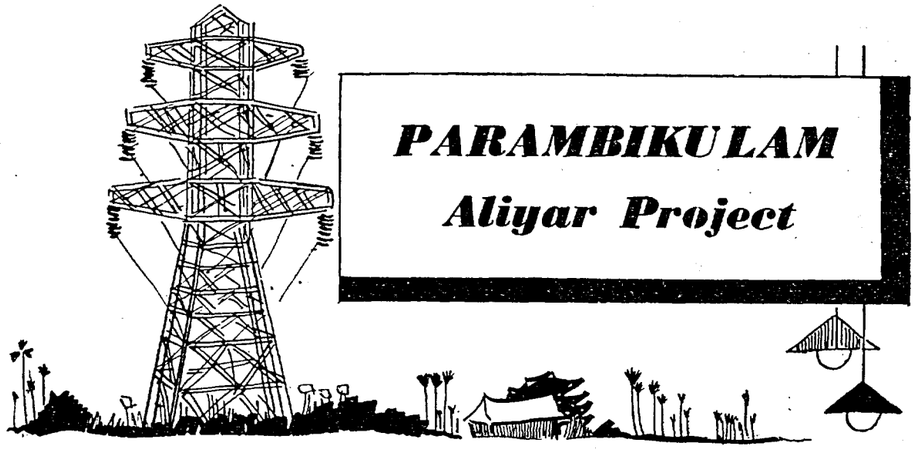
A Bouquet

Heard on the ground at Island Grounds during the Conference : " No flies, no mosquitoes, no other insects of nuisance also, how did they do it ? ".

A pat on the back is rare, and should not be expected for carrying out one's allotted duties. All the same, it gives courage and pleasure ; more so, when the bouquet has been thrown by an unknown person. We grinned happily and felt amply rewarded.

National Scholarships Scheme

The Government of India have approved the National Scholarships Scheme formulated by the Ministry of Education for the award of scholarships to students of outstanding merit. Under the scheme, it is proposed to award annually 1,800 post-matric, 400 post-intermediate and 200 post-graduate level scholarships for five years commencing from 1961–62. Full scholarships will be given to students whose parents or guardians earn less than Rs. 500 per mensem and scholarships at half rates will be given to students whose parents or guardians earn between Rs. 500 to Rs. 1,000 per mensem. Students whose parents have an income of more than Rs. 1,000 per mensem will not be eligible for the scholarships, but they will be eligible to receive certificates. Subject to the application of the means test, the merit scholars in each State would be declared on the basis of the results of the annual examination conducted by the Board or at the University in the year of selection. A National Advisory Committee is to be set up at the Centre to review the working of the scheme and to make such recommendations as may be considered necessary. In due course the National Scholarships Scheme will be integrated with the various scholarship schemes that are already in force. The estimated cost of the proposed scheme is about Rs. 390 lakhs during the Plan period. A scheme of loan scholarships is also to be worked out by the Ministry of Education.



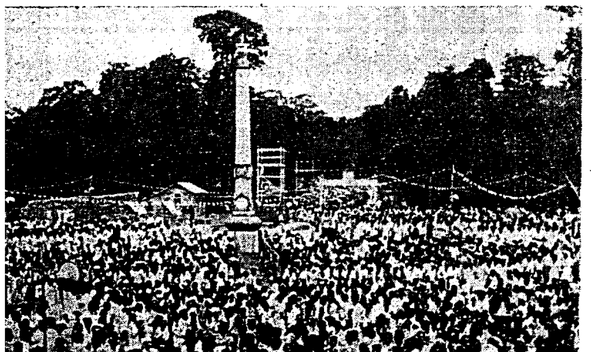
SRI U. ANANDA RAO, *Special Chief Engineer, Parambikulam-Aliyar Project.*

All the water resources of the State have been fully utilised. To meet the needs of the ever increasing population, the State would have to look to the rivers running on the borders of neighbouring States. The Parambikulam-Aliyar Project has been conceived in such a background. Thus stated Sri U. Ananda Rao, Chief Engineer of the Project, in his introduction to the detailed note on the Project read by him during the recent function when Prime Minister Jawaharlal Nehru formally inaugurated the Project.

The Parambikulam-Aliyar Project proposes to utilise the streams in the Anamalais, which traverse through both the States of Madras and Kerala and ultimately fall into the Arabian Sea. These rivers have thus become interstatal and the Project has been so designed as to serve the interests of both the States. The Project, in brief, contemplates integration of seven rivers, five on the Anamalai Hills and two in the plains by constructing reservoirs across them and inter-connecting them through tunnels. These tunnels carry water thus impounded in the reservoir to lower levels and ultimately to the plains of Coimbatore district.

Parambikulam represents the former group of five rivers, Nirar, Sholiar, Parambikulam, Tunakadavu and Thekkadi and the latter two rivers Aliyar and Palar. Thus the Project has taken the name Parambikulam-Aliyar. These rivers lie at various elevations ranging between +3750 and +1050, which incidentally enable us to utilise the drops between the rivers and develop power. The Project envisages irrigation to an extent of 240,000 acres in Coimbatore district and an addition of power to Madras grid to an extent of 180,000 KW. Kerala gets assured supply for the development of power at their Sholiar Power House and for stabilising irrigation of about 20,000 acres in Chittur area. Thus, the Project is both multi-purpose and multi-river valley project.

A huge commemoration column to mark the historic occasion of the inauguration of the Parambikulam-Aliyar Project was unveiled on the occasion by the Prime Minister.



Six Major Dams

The Project provides for six major dams, two minor dams, 12½ miles of inter-connecting tunnels, 30 miles of lined Contour Canal, 120 miles of lined canals and hundreds of miles of distributaries and field channels, etc. The first in the series is the one across Nirar, from where water will be diverted to Sholiar through a tunnel, 14,500 feet long. Sholiar will have a reservoir with a dam 320 feet high just above Kerala State limits from which a tunnel 10,000 feet long takes off to divert water to the lower Parambikulam Reservoir. The difference in levels of these two reservoirs is about 1,300 feet which will be utilised to develop power to an extent of 70,000 K.W. Sholiar dam diverts water not only to Madras but also to Kerala, whose power requirements at their power house at 330 cusecs are being ensured even during bad years. This is the first gain to Kerala. Parambikulam reservoir will be the largest reservoir in the series, whose gross capacity will be 16,800 M.Cft. with a net capacity of 9,000 M.Cft. The dam will be straight gravity masonry dam 180 feet high and 1,000 feet long at top. A major fault zone is met with at the foundations which is being treated in an appropriate manner. A tunnel 7,500 feet long conveys water from Parambikulam Reservoir to Tunakadavu Reservoir. Tunakadavu Dam will be an earthen dam 70 feet high. This reservoir will be a balancing reservoir and receives regulated supplies from Parambikulam Reservoir at the left flank and Thekkadi River on the right.

Power Development

From this reservoir, water is taken through an approch channel and a tunnel 13,000 feet long to Madras plains. A fall of 300 ft. at the end of the tunnel is being utilised for developing power to an extent of 40,000 K.W. at Sirkarpathi Power House. The tail water of this power house is taken along two canals to feed Aliyar and Thirumurthi reservoirs. One of the canals called Contour Canal is taken along difficult hilly terrain. It skirts the northern slopes of Anamalais, tunnelling through ridges and crossing valleys and streams over aqueducts and super passages. Aliyar and Thirumurthi Dams which are in the plains of Madras are intended to receive and store waters from Sirkarpathi Power House for distribution amongst various canals taking off from them for catering to the needs of the ayacut of 240,000 acres mentioned earlier. Pollachi and Vettaikaranpudur Canals take off from Aliyar Reservoir and Parambikulam Main Canal and Udumalpet Canal from Thirumurthi Dam. Aliyar Reservoir will also store its floods and release them as and when required to meet the requirements of the existing irrigation of 20,000 acres in Kerala and 6,400 acres in Madras. Thus, the existing ayacut will get stabilised. This is another gain to Kerala.



The Prime Minister is inspecting a chart as details of the Parambikulam-Aliyar Project are explained to him by the Special Chief Engineer in-charge of the project.

One of the features of the Project is the full lining of all the canals and distributaries which will save not only water from seepage but also prevent any water logging. Even the little water that is lost from the fields is picked up at a few reservoirs built across the drainage courses and in turn bring further areas under cultivation. Thus no water is wasted.

Progressive Irrigation

Another feature is the Progressive Irrigation under the Project. To start irrigation it is not necessary to complete the Project in all respects. As soon as the reservoir at the lowest level is completed, some area can be thrown open for cultivation and this area can be progressively increased as and when additional reservoirs are constructed and connected to the first reservoir. Works have been already

Parambikulam-Aliyar Project: Prime Minister Nehru who recently inaugurated the project is seen having a panoramic view of the site of the Aliyar Scheme.



started on Aliyar Reservoir which is expected to go into commission by next year when an area of about 20,000 acres will be thrown open for irrigation. It is hoped to store substantial quantity of water in Parambikulam Reservoir by 1963, when further areas will be added.

So on, when further reservoirs such as Thirumurthi, Sholiar and Nirar are completed, additional areas will be brought under irrigation. With a view to complete all the canals, distributaries and field bothies simultaneously with the construction of dams and tunnels, works on them have been already started and they are in fair progress. This progressive irrigation will give the ryots sufficient time to level and bring their lands under the plough during successive years and not all at once, which may call for heavy capital investment on their behalf. It is believed that this progressive irrigation will ensure full development of irrigation after the completion of the Project in all respects without any time lag.

Prospects

This Project supplies water to much needed and famine striken taluks of Pollachi, Udumalpet, Dharapuram and Palladam of Combatore district. It is proposed to supply water in two seasons from June to middle of October and middle of October to end of January. Water will be mostly for dry cultivation, but an extent up to 20 per cent will be permitted wet to cover low lying areas which may become unfit for dry cultivation. It is expected to produce an extra 24,000 tons of paddy, 48,000 tons of dry crops and 7,400 tons of cotton, whose aggregate value will be in the order of 5·09 crores of rupees. The Project expects a realisation of Rs. 1·54 crores from the sale of power, and Rs. 27·24 lakhs from irrigation. The direct return to Government on the capital outlay, taking into consideration both Irrigation and Power Revenue will be in the order of 5·2 per cent.

The several reservoirs will be ideal places for fishing, games, sanctuaries and tourist resorts. There is no doubt that with the completion of this Project, employment opportunities will increase, more food will be grown for consumption and standard of living will go up considerably thus ensuring peace and plenty in the land.

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Numerous scientific developments, new techniques and improved devices are daily emerging in this Age of Science to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature notes such developments. Apart from Indian scientific advances, interesting bits from the United Kingdom and the United States are also included.

About 95 per cent of the 100 million tons of fuel (in terms of coal equivalent) consumed in India for domestic purposes is made up of cattle dung, farm wastes, charcoal and firewood. Kerosene, coal and electricity constitute another 2.5 per cent of the total demand. Apart from coal gas, soft coke is recognised as a convenient form of fuel for domestic use in the urban areas.

Domestic soft coke requirements of the urban population in the next 10–15 years are estimated at 35 million tons; the demand in the States of West Bengal and Bihar alone is put at 2·5 million tons and 345,000 tons respectively. At present only 1·8 million tons of soft coke are produced in India by the open-stack burning method.

In this method, the valuable by-products of coal carbonisation are lost and the yields of coke are low. The quality of coke produced is not uniform, and poor combustibility and smokiness are other drawbacks of the product. Also, the open-stack method requires the use of sized coking coal, which is in short supply. There is need, therefore, for developing a more acceptable fuel by other economic methods.

Investigations on low temperature carbonisation of Indian coals have been in progress in the Central Fuel Research Institute and the Regional Research Laboratory, Hyderabad, for some years. Interest in this work stems not merely from inadequate availability of an acceptable domestic fuel but also from a more important angle—the recovery of the valuable by-products of coal carbonisation which are basic to dyes and drugs industry.

Coalsite

A pilot plant at the Regional Research Laboratory, at Hyderabad is producing and marketing soft coke obtained from inferior non-caking coals and coal slacks under the trade name 'Coalsite', which has found ready consumer acceptance.

Pilot plant studies at Neyveli Lignite Corporation have established conditions for the production of smokeless briquettes from lignite for domestic use. Based on these trials, a 100 tons per hour plant is scheduled to go into operation in 1964.

A continuous process for the production of soft coke has been developed by the Central Fuel Research Institute on the basis of which a low temperature coal carbonisation pilot plant has been set up.

The plant, which recently went into operation, produces smokeless coke and is reported to have many attractive features. The capital outlay required for a unit is not large compared to a conventional low temperature carbonisation plant of comparable capacity. Both caking and non-caking coals can be employed. Since many cities in North India can economically support low temperature carbonisation plants with a processing capacity of 1,000–1,500 tons coal per day, it is considered an attractive proposition to put up such plants, equipped with by-product recovery units. The gas produced would find use in industry and the tar obtained could be pooled and processed in plants centrally situated.

Smoke nuisance in thickly populated urban areas is a matter for serious concern because of the health hazards attendant on it. The introduction of smokeless fuel would make for cleaner and healthier cities and towns.

In the manufacture of ceramic articles plastic clay is one of the essential requirements. Particle size and organic matter present in the clays affect the plastic properties of clays to a great extent. Ball clays and plastic fire clays contain appreciable amount of organic matter and the particle size of ball clays is finer than china clay. Unlike fire clay, ball clay burns white and is preferred in ceramic bodies. Ball clay improves the plastic and working properties and it also helps deflocculation in casting slips and increases the green strength.

The amount of organic matter present in clay varies. The maximum amount is found in ball clays. Considerable amount of work has been done on the nature and amount of organic matter present in ball clays. The organic matter present in ball clays is chiefly lignitic in origin and the main constituents are resins, fats, waxes, humic acid, cellulose and lignin. Cellulose, lignin and humic acid increase green strength.

Ball clays are rare in India and are imported in appreciable quantity from abroad. Studies were undertaken at the Central Glass and Ceramic Research Institute, Calcutta, to investigate if the plastic and working properties of clays could be improved by introducing organic matter like lignite powder, babul bark extract and moss. Ten parts of moss or five parts of babul bark extract (about 3 per cent concentration) to 100 parts of clay in ceramic bodies improved the plastic and working properties. The treatment of clays with moss resulted in an offensive odour and was not liked by many workers. The organic matter treated clays may be tried in place of ball clays which are not commonly found in India and which are mostly imported.

Glass-lined Equipment

Glass-lined vessels and equipments are now of common use in pharmaceutical and chemical processing industries. There is, at present, no production of such vessels in India despite their growing demand as a result of the expansion of the chemical and pharmaceutical industries.

It is estimated that during the course of next five years it will be necessary to import about 600 glass-lined reaction vessels ranging in capacity from 250 to 1,000 gallons at a cost of nearly Rs. 3 crores of foreign exchange. Besides there will be a sizeable expenditure involved in the replacement and relining of the glass-lined vessels now in use. It is desirable, therefore, that a source of supply of glass-lined vessels is developed in India.

It is not possible to trace the origin of the idea of applying glasses to metals. It was late in the 19th century that a German-American by the name of Casper Pfaudler observed that vacuum accelerated fermentation of beer and tried several types of linings on metal containers. Ultimately, he succeeded in lining the steel with low melting glasses. This may be said to be the beginning of glass-lined vessels.

Originally intended for brewing industry it soon became apparent that glass-lined vessels were equally useful for other industries, especially chemical processing. Their main advantage is resistance to acids and corrosion and ease of cleaning. The use of glass-lined surface now extends to heat exchanges, high pressure pipes and reactors. Large-sized vessels with capacities up to 20,000 gallons are in use.

Work on the glass lining of vessels was taken up at the Sri Ram Institute for Industrial Research, Delhi, in the middle of 1959 and, since then, considerable progress has been made. The typical samples of imported glass-lined equipment have been analysed and fusion tests made on frit compounds.

Electro chemical polishing

A new electro chemical technique for rapid, scratch-free polishing of germanium and silicon wafers for transistors has been recently developed by scientists at the Bell Telephone Laboratories, New Jersey. The method is much faster and more efficient than conventional polishing methods. In addition to the anticipated savings of more than 50 per cent of the polishing cost, there is a distinct improvement in the electrical characteristics of certain types of devices.

One of the major problems in the manufacture of transistors is maintaining an undamaged surface on the semiconductor slice used for the active element of the device. In conventional manufacturing practice, these slices are prepared in four steps. First they are sawed from a cylindrical single crystal, then they are lapped with a coarse abrasive, and polished on optical lapping machines. These three operations produce a smooth, flat surface. In the final step, the slices are etched to remove all the residual mechanical damage to the crystal face caused by abrasive action. When there are deep scratches from lapping and polishing, the etchant cannot remove all the damage, and poor quality transistors result. In contrast, electro chemical polishing does not introduce new damage during processing.

Stainless steel aircraft

No fewer than nine completely new British aircraft are due to make their first flights before the end of 1962. Some of these new aircraft will form the spearhead of the British aircraft industry's export sales drive during the 1960s and early 1970s, while others will provide valuable information for the development of advanced aircraft in a few years' time.

One of these research aircraft, the Bristol T. 188, is scheduled to fly before the end of this year. Made of stainless steel to withstand the effects of thermal heating, it will be the fastest "conventional" aircraft in the world.

The Hunting H. 126 jet-flap research aircraft will be the first to explore the practical possibilities of a device conceived at the National Gas Turbine Establishment some years ago. If the jet-flap fulfils its designers' hopes, it could revolutionize air transport. Aircraft could be made with much smaller wings and higher wing-loadings than hitherto, yet needing relatively short take-off and landing runs. No first flight date has yet been announced.

New Design Switchgear

A British firm has introduced a new design of switchgear equipment to control electrical power supplies at voltages approaching that of lightning. Voltages of this magnitude are becoming necessary for feeding power economically over great distances, such as exist in India, Australia, and North and South America.

The new equipment was introduced to engineers at a conference held by the firm, English Electric, at Stafford, in the Midlands. The delegates saw multi-million-pound test machinery which has been installed to prove the reliability of the switchgear before it goes into service. This machinery also ensures that the gear can deal swiftly with faulty conditions, such as short circuits caused by birds or falling trees, which could impose on the equipment voltage surges of up to 1,500,000 volts, comparable to the full power of a lightning flash. The capacity of the test equipment has recently been doubled to prove very-high-duty switchgear, worth £1,500,000, ordered for Britain's new 400,000 volt Grid System.

In any electricity supply system, writes an industrial correspondent, means have to be provided for switchgear into and out of supply lines and for dealing quickly with faults that could cause severe damage to generating machinery if left uncorrected for a few seconds.

The main problem in switching off electrical power, particularly at the high currents and voltages common to-day, is to put out the electric are that forms and keeps the current flowing even when the switch is pulled out. In high-voltage, high power switches, the arc is normally blown out by a powerful blast of air. This is done more quickly and reliably than before in the new design by pressurizing the whole switch assembly with dry air, which ensures that the arc is not only blown out immediately but prevented from re-forming.

The new equipment is compact, makes use of reliable and cheap new high-strength materials, and is built from standard components to lower costs.

Revolutionary Plane

The revolutionary British aircraft, the Hawker P-1127, has successfully used the same engine to give the downward thrust necessary for vertical take-off and the rear thrust needed for forward flight.

Achievement of full transition from vertical rising and hovering to forward flight was announced on September 19, when the British Minister of Aviation, Mr. Peter Thorneycroft, saw speed performances and aerobatics at the Hawker airfield at Dunsfold, Southern England.

The new plane is powered by a Bristol Siddeley Pegasus lift-thrust engine. During the test flying programme, one of the two prototypes, at over 600 miles an hour, flew at a speed more than nine-tenths the speed of sound.

Full transitional flight was accomplished 11 months after the first hovering trials.

Meal by Radar

During the next few months, radar may be able to provide the British public with freshly-cooked meals at all hours of the day or night at a moment's notice.

A firm of electronic engineers has developed a simple radar heater, selling for around £500, which will heat pre-frozen foods in a few seconds. The company plans, with the co-operation of a frozen-food firm, to install the cookers in public houses and cafes which at the moment are unable to serve hot meals.

The food, frozen on plates, will be seelected by the customer and placed on a moving belt which carries it through the cooker, emerging ready-to-eat at the other end.

The secret of radar cooker is that it heats the food uniformly throughout. The new idea is an advance on earlier radio-frequency heaters, the use of which was limited by the fact that at the much longer wavelengths used, some kinds of food heated much more quickly than others.

Two firms are already producing frozen main courses which have been on sale to the public for several months.

These are heated in the normal way in an oven for 20 to 25 minutes, but experiments with various types of radar and radiant-heat cookers are going on.

Aid to Art Visitors

Visitors to Manchester's City Art Gallery are now helped in their appreciation of art by recorded descriptions of paintings which they can hear privately through pocket-sized radio receivers. The scheme, which has just begun, is the first in Britain and has cost £7,000.

Fifty breast-pocket transistor sets, equipped with either clip-on or stick-type earphones, are available for hire at a charge of 1sh. each. Twelve-minute talks on paintings are transmitted from tape recordings. These cannot be heard by anyone not using the equipment, and commentaries on paintings in each room are automatically broadcast when a visitor enters.

The system is the result of two years' experimenta work by a television company. It is at present available in five of 10 rooms, but is to be extended to all.

Slot Machine for Coal

The latest addition to the range of commodities which can be purchased from a vending machine is pre-packed coal and smokeless fuel.

The first production model of the new slot machine (developed by a Manchester firm) is going to the Coal Board in Scotland, but it is also hoped to install the machines on selected sites in the north-west of England, probably on housing estates.

A spokesmen of the Manchester firm said: "We have quite a lot of orders in hand for the new machine. Large blocks of flats will probably get the first machines, but later we hope to see them installed outside supermarkets, garages, and perhaps railway stations."

Oil from Shale

Progress in tapping the trillion barrels of oil locked in vast Colorado shale deposit is reported by a U.S. Government chemist. D. L. Lawlor of the Bureau of Mines said the valuable oilforming portion (kerogen) has been freed from the tight-clinging shale for the first time without drastically altering the kerogen. He said pumping lithium aluminium hydride into the shale resulted in recovering kerogen with only one per cent impurities. The technique, combined with conventional methods, he said, may lead to exploiting the entire shale deposit which contains "several times more than all the natural petroleum produced in this country.....plus our present reserve of petroleum."

'Fresh' fish may be several weeks old when bought at the market about five years from now, yet taste the same as the day it was netted thousands of miles away. Dr. Donald A. Silow of the U.N. Food and Agriculture Organisation and Dr. Paul C. Aebersold of the U.S. Atomic Energy Commission feel that radiation is almost certain to become a valuable means of preserving perishable food in coming years. They told the recent meeting of the Pacific Science Congress here they base their prediction on tests which indicate that light doses of radiation can kill the bacteria which spoil food without altering the flavour or making it dangerous to eat.

Sintering of Dolomite

Comprehensive studies on the sintering of dolomite in shaft kiln have been carried out at the National Metallurgical Laboratory, Jamshedpur. Samples for the study were collected from different pits of Hirri and Hardi mines near Rourkela and from Baraduar in Madhya Pradesh.

Dolomite from Hirri mines, in which the distribution of silica is not iuniform, does not appear to be suitable for sintering in shaft klin unless selective mining is resorted to or some suitable means of separating the high silica dolomite is adopted.

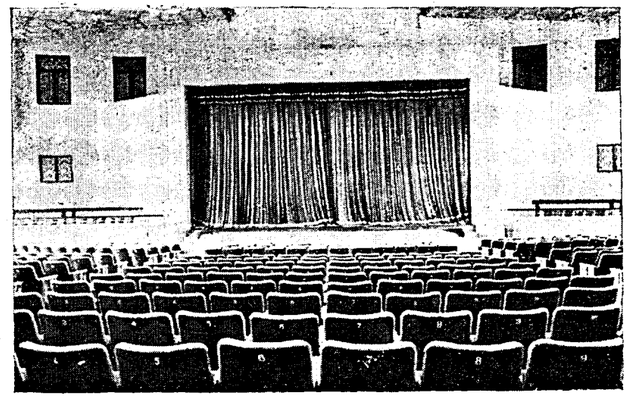
The Hardi dolomite yields very good sinter and is free from the heavy dusting observed in the case of Hirri samples, but it has a slight tendency to stick inside the shaft at high temperature in the range of 1620-1720°C or above. The sinter obtained from Baraduar dolomite is free from dusting and sticking and hence appears to be the best of the three samples. However, on firing to 1650°C it does not yield as dense a sinter as the Hardi dolomite and consequently a higher firing temperature is needed to get equally good sinter.

Combustion Boats

A simple and inexpensive method of preparing combustion boats, an essential requirement of metallurgical laboratories for the estimation of carbon in steels, has been developed at the Central Railway Laboratory at Bombay. At present the requirements for these boats are met by imports.

The boats made by this process compare favourably with imported material, possess good strength, withstand sudden temperature reversals and resist corrosion. The process does not require costly equipment and an unskilled worker can make 100 boats per day; the cost of 500 boats being about Rs. 42·00 as compared with Rs. 85·00 for the imported product. Details of the process are published in a recent issue of *Vigyan Pragati*, a Hindi monthly of the Council of Scientific and Industrial Research.

A THEATRE THAT CHILDREN LOVE



The Children's Theatre in the Government Estate, Mount Road, is a place that children love. Every week-end, films that educate children are exhibited here mixed with comic cartoons that delight them.

It is a joy to watch their innocent faces aglow with pleasure after enjoying the shows at this luxury theatre.

Hundreds of children attend the shows at this theatre and have a happy time. Why not send your children too?

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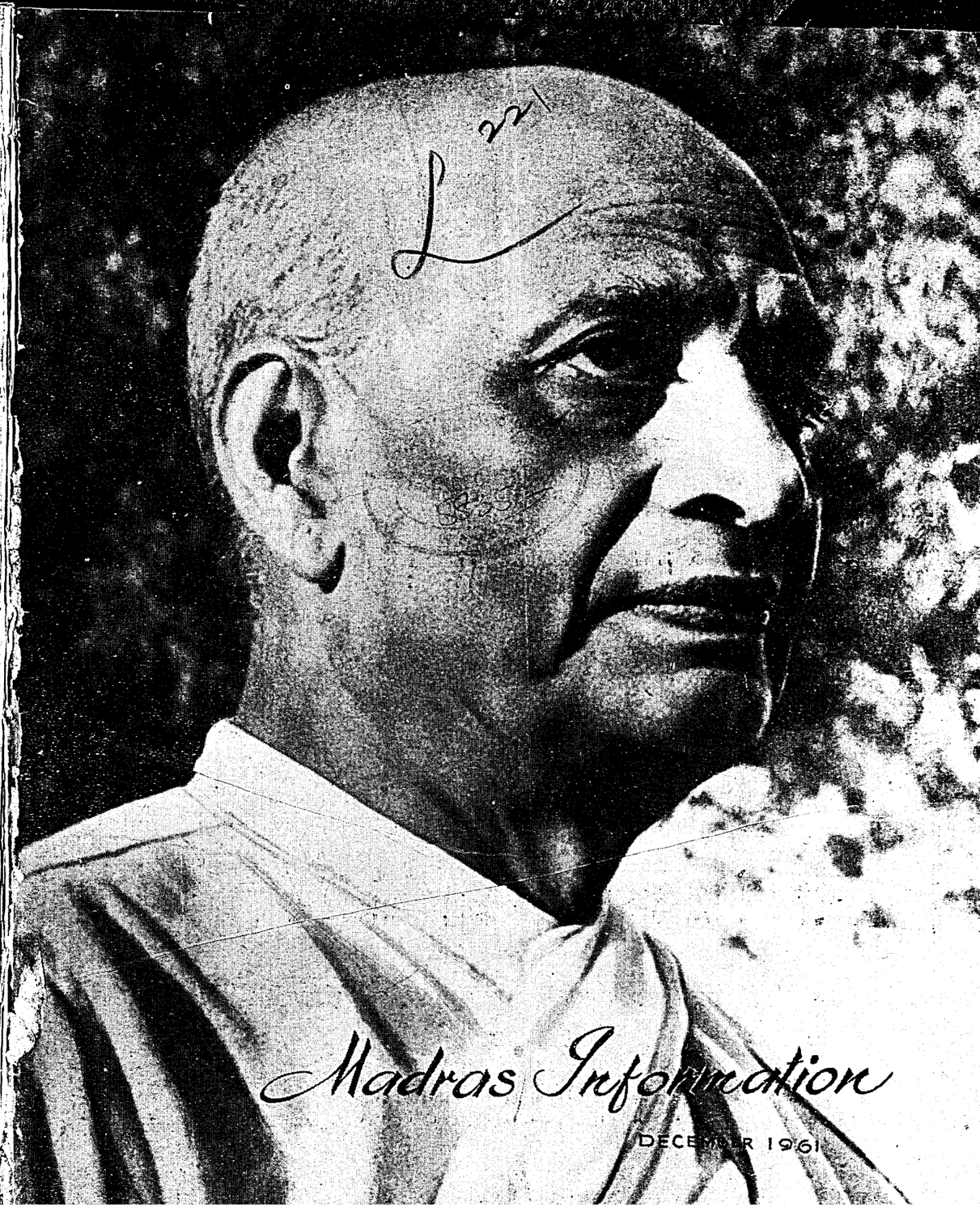


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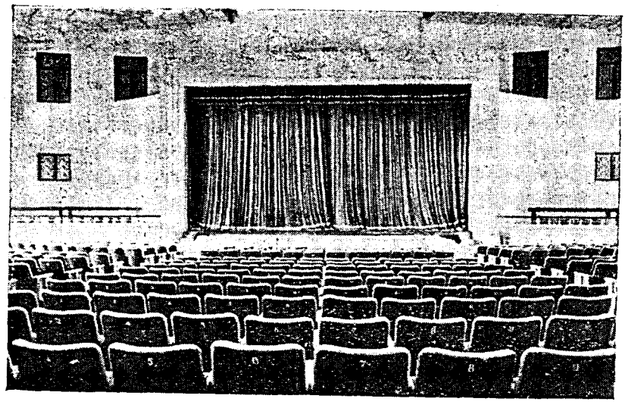
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Madras Information

DECEMBER 1961

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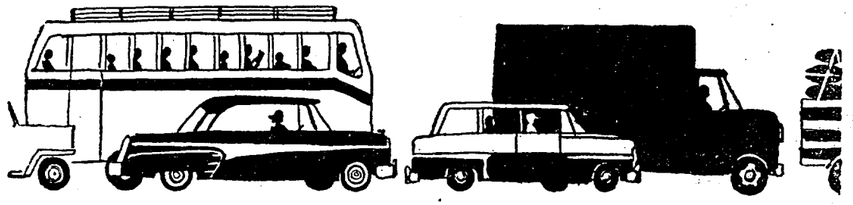
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This month's cover

This issue of Madras Information is dedicated to the memory of Sardar Vallabhai Pattel, one of the makers of modern India, in connection with the eleventh anniversary of his death falling on December 15 (*see article inside*).



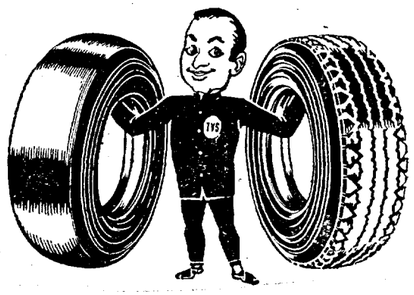
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Profile of a patriot

National integration is the dominant theme of the day and politicians as well as educationists are applying their minds to promote and consolidate this objective so vital for the nation's survival. In this connection it is impossible to forget Sardar Vallabhai Patel, who soon after independence effected the integration of over six hundred Princely States, a feat that until it was achieved appeared well nigh impossible. To mark the eleventh anniversary of his death which falls on December 15, 1961, this 'profile' touching on this aspect of his achievements is presented.

Probably the tragedy which befell the Indian Nation on December 15, 1950 when Sardar Vallabhai Patel breathed his last is second only to the loss earlier sustained by the country when Mahatma Gandhi, the Father of the Nation, fell to the bullet of a thoughtless assassin.

For, Patel is verily the maker of Modern India. It was the stern action of this strong, silent man of India that was responsible for the effective and speedy integration of the numerous princely States, big and small, after independence was won.

This solid achievement of his laid the firm foundation for the much-needed stability on which has been based the diverse constructive nation building activity which has characterised the Indian scene during the past decade.

Pessimists Rebuffed

Pessimists were many who believed that with the withdrawal of British rule from India the Princely States would retain paramountcy and would remain as so many sovereign, independent States, thus rendering Indian freedom a consummation without substance, a mere mockery. But these obstinate people failed to reckon with one powerful factor. And that was the Great Sardar who by his personality and dedicated action in the hour of trial brought about the integration of the States within a period so incredibly short and in a manner so staggeringly decisive that the prophets of doom stood once for all corrected.

It was of course declared by the Cabinet Mission in their memorandum on the States and Paramountcy that the British Government could transfer back the paramountcy surrendered to it by the States only to the States and not to an Indian Government. This was technically correct but the revolutionary changes taking place in the country invalidated it.

In this context it is most refreshing to recall that the Marquis of Hastings who was himself responsible for the establishment of British paramountcy in India foresaw with prophetic vision and clarity that this "paramountcy" would one day evaporate into thin air.

This remarkable passage occurs in a private journal maintained by him in 1818 wherein he has noted "The time, not very remote, will arrive when England will, on sound principles of policy wish to relinquish the domination which she has cordially and unintentionally assumed over this country and from it she may not recede. In that hour it would be the proudest boast that she used her sovereignty towards enlightening her temporary subjects so as to enable them to walk along in the paths of justice and to maintain with probity towards their benefactors that commercial intercourse in which she should then find solid interest".

Full Support

The policy and action of the Sardar with reference to the States had the support of both the princes and the people both of whom fell in with the unmistakable trend of the times towards democratisation. Graceful enough to acknowledge the ready and willing co-operation of the princes in the process of integration and democratisation, the Sardar could however never mince matters and felt that it was only an accident that some people lived in the States and some outside them. He declared "none can segregate us into segments, no impassable barriers can be set up between us. I suggest that it is, therefore, better for us to make laws sitting together as friends than to make treaties as aliens". This was a call, friendly yet firm, which could not possibly be resisted.

In the course of an exposition of the policy of the Indian Government towards the States, the Sardar said with feeling "we are at a momentous stage in the history of



India. By common endeavour we can raise the country to a new greatness while lack of unity will expose us to fresh calamities."

Golden Mean

In the process of integration, the Sardar, in fairness to the princes and the people struck a golden mean whereby the interests of both were balanced and preserved. Said the Sardar "in the world of to-day where distances are fast shrinking and masses are being gradually brought into touch with latest administrative amenities, it is impossible to postpone for a day longer than necessary the introduction of measures which would make the people realize that their progress is also proceeding at least on the lines of their neighbouring areas. Delays inevitably lead to discountent, which in turn results in lawlessness; the use of force may for a time check the popular urge for reform but it can never succeed in eradicating it altogether. There was no alternative to integration and democratisation.

On behalf of the princes he said they "had, acquired by heredity and history certain claims on the people which the latter must honour. Their dignities and privileges and their means of subsistence on a reasonable standard must be assured. I have always held to the belief that the future of the princes lies in the service of their people ar the country and not in the continued assertion of the autocracy. In conformity with these ideas, I felt that c release from increasingly onerous and awkward respons bility, but at the same time with their personal positic and that of the ruling family fully safeguarded they wou have opportunities of service which have hitherto bee denied to them and which many of them are genuine longing for and genuinely anxious to secure."

Cruel Blow

The Sardar declared that in future if the people of tl States had any grievances, they could be only against tl popular representatives and leaders who would be charg with their interests and welfare and not against tl princes who had "by their act of abnegation purchased perpetuity their right to claim the devotion of their peop

It was a cruel blow to the Government and people India that the Sardar was claimed by death so soon aft independence, especially so, when the nation needed t services of this Iron Man so badly. But within the shc span of three years vouched him after freedom was w he fulfilled a major destiny for the nation as he alone coul The people of India can never forget him.

Free Primary Education

Most of India's 496 lakh children between 6 and 11 will be at primary school by the mid-sixties under the country's Compulsory Education Programme. Charged by India's Constitution to spread compulsory education among boys and girls upto 14, the Government have split the scheme into two stages for facilitating implementation. Free education for the age-group 6—11 has been accorded priority and similar education will be imparted to children between 11—14 after 1966. About 153 lakh additional children will be placed in schools and the outlay on primary education alone will be Rs. 209 crores as against Rs. 85 crores in the First Plan and Rs. 92 crores in the Second Plan.

To facilitate early implementation of the free compulsory education programme, about 150,000 primary school teachers will be trained every year in the country. In the last two years of the Second Plan, the Centre has given 100 per cent financial assistance to the State Governments for expanding teacher training facilities. In view of the very large gap between the proportion of boys and girls attending school special attention is being paid to girls' education in several ways. About 43 per cent of the total Plan allocation is meant for expansion of girls' education alone. Further, with a view to developing an effective system for enforcing compulsory attendance, the Union Education Ministry has prepared a model legislation.



Towards Better Forestry

SRI M. BHAKTAVATSALAM, *Minister for Home.*

Delivering the convocation address at the Southern Forest Rangers College, Coimbatore, recently, Sri M. Bhaktavatsalam, Minister for Home, emphasised that the alert forest worker must remain constantly geared to adapt himself to the changing requirements of his calling especially as applied science and executive ability had necessarily to be blended to be of the greatest service to the people. He then proceeded to examine the new orientation, the new trends, that were shaping forestry practice in the south today. This article contains a major portion of the Minister's Convocation Address.

It is common knowledge that from ancient times our land was rich in forests and the lives of our early ancestors were influenced, in many ways, by the forests. All along in the past, forest products, even valuable timber, were there for anybody to take (literally for the the mere taking, even without asking) for personal needs or even for trade and profit. Except for areas preserved for their value for hunting game and for sport for Royalty and privileged persons, there were scarcely any restrictions on forest exploitation. Even in comparatively recent times, till barely a century or so ago, no one had the slightest misgivings about the inexhaustibility of our forests, about their free and ever ready bounty to all who resorted to them.

Finance Minister Subramaniam who gave a dinner at the Raiaji Hall to meet the delegates to the International Film Festival is seen in the picture greeting a guest artiste.



But conditions have changed rapidly since then. The heavy removals of teak in the eighteenth and nineteenth centuries from the West Coast forests, to feed the naval construction yards of the British Isles, led to the first apprehensions that such supplies could not continue indefinitely unless steps were taken to replant with young growth systematically. It was only a step to recognise that in the process of meeting even the growing needs of the local people alone, the forest resources of the land would be rapidly reduced if not exhausted. Even the forests themselves were in danger of being depleted beyond recovery, unless special protection was given and the forest maintained in a state of productivity (by carefully regulating their working in accordance with principles of forest observation and management as already evolved in advanced parts of the World, especially in Europe. For instance, it is a fact of comparatively recent history that all along the course of Cauvery from Bhavani to Erode, there were well stocked forests which were freely cut to supply fuel for the wood-burning locomotives in the early days of the introduction of Railways in the locality; as a result to-day, not even the last vestige of that long stretch of forest is left.

Strict Conservation Policy

Even so, time there was, not so long ago either, when India's Foresters were still content with maintaining intact such forests as were declared Reserved forests and entrusted to their special care; and at best, realising what could be taken out of them without impairing the general stand for altering the nature of the forest in any way. We owe thanks however to those conservative Foresters of older days; for, it is their policy of strict conservation that has helped to build the fine forests estate that is our proud heritage to-day and to earn for our forestry practices a place second to none in the world of scientific forestry.

In this connection, I would recall with pleasure the very apt notice that foresters had put up the other day at Topslip for the information of the Prime Minister on his way to Parambikulam. The notice pointed out that a century of sound forest management had conserved the soil and moisture of the locality and made the Parambilkulam Project possible to-day. And as all of us know Parambikulam is only one of many similar projects that have become possible because of the well preserved forest cover in the mountain tracts of India.

Need for Realism

But such a policy of rigid conservation not correlated to the needs cannot continue if the people are to be served adequately; nor can foresters rest content with a state of affairs which may be satisfactory from a purely forest point of view but leaves the people starving for forest products and services. After all, the first object of State forest management (as of all other aspects of Government administration) must be to achieve the maximum of good for most, if not all the people. Against this requirement, the stark fact remains that our forests occupy not inconsiderable areas of land but they do not produce enough by way of economic returns, or forest products or services to meet the increasing needs of the people.

Even if we had no other difficulties, but we do have many (chief of which to-day is shortage of foreign exchange resources), the import of forest products would scarcely be feasible, at any time, merely for reasons of difficulties inherent in transporting such bulky merchandise. I understand that even the rich but rather remote forest reservoirs of the country itself (as in the Andamans islands or Assam) are proving difficult to tap mainly because of the prohibitive transport costs involved or difficulties of transport arrangements.

The Public Interest

It is obvious, therefore, that the forest areas, at least the more productive of them that also happen to be conveniently located or are easily accessible, must be most intensively developed. I do not for a moment want to be mistaken as even implying that we could or should



Mr. Orville Freeman, U.S. Secretary for Agriculture, who visited the City recently was received on arrival at the airport by Home Minister Bhaktavatsalam.

tinker in any way or take chances with the perpetuation of the prospective functions of the forests, especially of soil and moisture conservation. Where these protective influences of the forest are of prime or sole value, the management of such forests must aim at complete safeguards for them. Nevertheless, the time has come for us to recognise that land (which is so acutely in demand to-day for the bare existence of the people) cannot be merely held adversely, even in the name of " reserved forests ". Every piece of forest land must be made to subserve the people in the best manner and to the fullest extent possible: it can no longer be that the people should stay content with what the technical expert merely chooses to make available from it; in other words, Forester's anxiety to retain forest lands as such (praise be to his earnestness of purpose) can find general support only if he can also convince the public that there could be no better use or fuller utilisation of the land in question.

Development Forestry

This is one of the major shifts in the concepts of use for forest lands that I have to ask the present generation of foresters to recognise. I must myself express here a word of caution. This advocacy of intensive land use can, I am conscious, often lead to rather intriguing situations where it would prove inconsistent with traditional uses of forest land, for instance as grazing grounds or (as is often the case) merely as exercising grounds for the large number of livestock (though frequently no more than scrub cattle) that are so much a part of our lives. But there can be little doubt that with the economic advancement of the peasant these practices will also change; but the forester will scarcely be advancing the cause of forestry if he tried to force the pace in such matters.

However, it should be possible, at least in respect of selected forest areas, for the age-long policy of 'conservation forestry' rapidly to give way to 'development forestry' if I may coin these terms. That these areas



Chief Minister Kamaraj relaxing in the company of the members of the Finance Commission at the party at Rajaji Hall, where he played host to them.

need not be vast either, is supported by the recent observation of a renowned foreign expert, Dr. Von Monroy, that if one per cent only of the best of India's forest lands were brought under intensive cultivation of fast-grown forest crops, the wood output of the country can be doubled. To explain further what I have in mind, it might be best to give an example.

In Europe, in the old days of solid wooden houses and wooden ships, the care of slow grown and durable hardwoods like the oak was considered good forestry: but with changing conditions of life and to some extent even in anticipation of such changes, in many of the advanced countries like Switzerland and Germany, hardwoods are being progressively replaced over the last 70 years or more with fast grown coniferous trees. In their temperate climate, they are lucky that they can choose to grow hardwoods or conifers on the same sites. Admittedly, in the tropical areas, we are not so advantageously placed. But species of Eucalyptus hold out equal promise for our areas, especially as they are adaptable to our localities and are also amongst the fastest grown trees anywhere in the world.

Another Aspect

This brings me to another aspect of forestry where again dynamic changes appear to be called for. I refer to the traditionally long periods of waiting associated with the growing of forest crops for timber. It has been explained to me that if we want to harvest one acre of mature teak annually, we have to maintain 60 or 70 acres under teak crops, since the teak tree takes that long number of years to attain economically satisfactory dimensions; and with some other timber species, the periods and areas involved are said to be considerably longer even. Admittedly, a supreme timber like teak will always remain in use and in good demand; and in Southern India (which is one of its few natural homes in the world), prudence would require that we must not deviate at all from continuing to grow teak in all sites really suited to it. Otherwise, forest crops have to be so raised and handled that they can be harvested at more frequent intervals.

Modern science has come to our aid in this respect also. By suitably processing any woods, a variety of products (plywood, laminated wood, hardboards, etc.) can be manufactured which would serve us as well as quality timbers alone could in the past. In the circumstances, it seems to stand to reason that our methods of management of the bulk of our productive forest areas must now be revised in order to raise fast-grown woods that produce large quantities per unit area and can be harvested after comparatively short periods.

Modern Trend

There is another modern trend also favouring such a change. In older days, it was a common sight to see a lot of timber used in the construction of any building, large or small; even to-day, in really old buildings, large timber beams are in evidence; and timber was used in many other constructional features, as well. But to-day the use of timber is restricted to a few items of construction only and timber has been wholly replaced by steel, concrete, etc., for heavy structural members.

Of course, I realise that this has not led to any drop in the quantities of timber in demand; but that is because there is far more construction activity nowadays; further, the demand is for a different kind, for processed wood and not so much for shaped or sized timbers, for flush doors instead of panelled or battened doors, for block boards and insulation boards instead of solid planks for panelling or ceiling, and so on.

Some Pointers

Again, as already observed, scientific Forestry began in India well over a century ago with the planting of teak in the Malabar forests. But the planting did not become a regular feature in Indian Forestry till well after World War I. In fact, it has been taken up on a really significant scale generally all over Southern India only in recent years, since 1951. But I would venture to suggest that intensive land use and maximised production cannot be achieved depending only on Nature's ways; and plantations will have to become the order of the day in all productive forestry undertakings in the near future.

In Madras State, we are planting (besides teak) quite a few exotics on a large scale successfully, such as Cashew, Casuarina, Wattle and Bluegum. In the neighbouring Kerala State, I am told that vast areas have been brought under teak plantations and more recen

interest includes introduction of varieties of fast grown Eucalyptus suited to their climatic conditions. No one visiting the neighbourhood of Bangalore in Mysore State can fail to notice the numerous patches covered by Casuarina and more recently by Eucalyptus hybrid. These are pointers clearly to the lines along which productive Forestry must and will develop in Southern India.

Gandhiji's View

But in our efforts to help productive or industrial Forestry along, we must not forget that the Forester's prime duty is to meet the needs of the rural people for forest products and for increased forest influences. In fact the necessity for the villager to obtain his requirements from within easy reach of his home, was aptly recorded by Gandhiji who said that in his concept of it, an ideal village would "have cottages.....built of materials obtainable within a radius of five miles". Surely, he must have had in his mind materials derived from trees and plants mainly. And yet, we know how few of our villages even to-day have any such resources.

All these years, we have been content with letting the villagers in the neighbourhood of forests derive only what could be conveniently spared from the forests,—whether it be grazing or fodder, fuel or small timber, green manure leaf or minor forest products. Villagers living away from the forests have had to make do with what they could find, such as cowdung and farmyard refuse for domestic fuel instead of wood. If that meant no manure for the fields, they just went without regular manuring, resulting (in turn) in the very low agricultural yields about which we have heard so much. I am sure no one will disagree with the view that this state of affairs must be remedied without delay, even if it can be done only at much cost.

Farm Forestry Scheme

It is indeed to be welcomed that in the Third Five-Year Plan, a scheme of "Farm Forestry" has been included and is being implemented on a National scale. This scheme aims at bringing the benefits that trees and forests along can confer close to every village. While the scheme will prove greatly beneficial all over India, it is of particular significance in the over-populated and yet arid and treeless tracts of the South. Population increases and additions to livestock have inevitably led in the past to the decimation of vegetation in most areas near villages, which were naturally not so strictly protected. It is the restoration of vegetation in the latter class of areas that would be the first objective of "Farm Forestry".

The Scheme will also require the forester to assist the people to grow trees wherever possible on their own

holdings. In developing this scheme to the best advantage of the people, the forester will be playing (what to him, will be) a new role. He will have to be not a mere technical hand managing an area or a crop entrusted to his care and backed with governmental and legal authority, but a public worker doing his best to induce the people to appreciate the benefits that will accrue to them from Farm Forestry. He will have to secure their willing support, co-operation and participation in his efforts to re-clothe with green vegetation the vast areas of bare lands that are such a common sight to-day anywhere in our countryside.

The New Role

I do not know to what extent the young Forest Rangers passing out to-day have been specially equipped during this training course for playing this new role effectively, nor would I expect this regular forestry training course to have taken any special steps in this particular direction. Obviously, this course has educated them in the techniques and the science of Forestry in its widest import and it would be for the men individually to develop the application of selected techniques as suited to the particular circumstances in which each of them may find himself from time to time during his career.

Naturally, if the present generation of Foresters are to interest themselves actively in developing the forests in their care along lines such as I have indicated at random they would rightly look for equal encouragement in their careers. I submit that this is not only not wanting but is available to the Forest Ranger of to-day in adequate measure. In the earlier days men with but poor basic qualifications elected to join this arduous and exacting profession. Naturally, they could not look forward to any considerable advancement in career, though it must be said to the credit of the men concerned and their training, that even under the inhospitable conditions then prevailing

Home Minister Bhakthavatsalam who recently released the 8th Volume of Gandhiji's works in Tamil at a formal function in the City is seen in the picture receiving the book from Sri T. S. Avinashalingam Chettiar who presided on the occasion.



most of them did excellent work to improve our forests, and, the outstanding men among them did receive due recognition and advancement.

Improved Conditions

But working conditions in our forests have improved very noticeably; comparatively, even the forest areas and colonies are now free from malaria; they have become more accessible; and there are better living facilities nearer the forests. Further, opportunities for good work have also increased and in more recent years, there has been the advantage that most of the trainees joining the courses are men with higher basic educational qualifications. I must hasten to add that the trainees here must not run away with any wrong impression that they are over-qualified. On the other hand, they are still under-qualified initially, compared to the positions they may be called upon to fill during their careers.

Time was when in the Indian Forest Department, the Ranger could not ordinarily expect to be promoted even to gazetted rank but to-day not only a definite proportion of gazetted posts is set apart for such promotion, but selected Rangers (by dint of ability, effort and devotion to duty) have worked their way to the topmost levels of the department. I am happy to learn that some of the Conservators in the various States, and atleast one Chief Conservator of to-day, started their careers as Forest Rangers.

The Greatest Asset

Consistent with these opportunities for their own betterment and for shouldering greater responsibilities, the trainees leaving the portals of this college must continue to study and improve themselves in matters of technical knowledge, improved forest management and efficient administration. In this connection, I must advise all young Rangers now on the threshold of their careers, that conscious integrity must always remain their greatest asset (irrespective of all other considerations). Without absolute integrity and honesty, no executive officer can serve all the people he will come in contact with equally well; nor can he have the satisfaction of having done his work itself well. Neither should there be any mistaken thought that study and education are now over. In a technical field, self improvement has to be a continuous process all through life.

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A Joint Responsibility



Problems of Social Rehabilitation

S. R. VENKATARAMAN, *Secretary, Servants of India Society, Madras.*

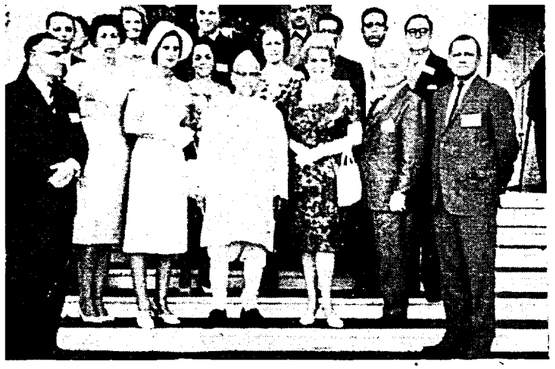
In a democratic State like India, there cannot be any clear cut demarcation regarding the respective roles of Government and voluntary agencies in executing social welfare programmes. They are complementary and supplementary to each other. Rehabilitation problems are a common responsibility and there should be a joint co-operative endeavour of all the concerned parties to find effective solutions to them. This, in main, is the theme of this article wherein the author discusses the role of the State, public and voluntary organizations in implementing Social Welfare Programmes. This feature is presented in connection with the Ninth All-India Conference of Moral and Social Hygiene held in the City recently.

The responsibility of the State for the Social Welfare of its citizens is now accepted as one of its fundamental and primary duties. The manner and method of discharging that responsibility differ according to the character of the State. If it is monarchical, social welfare programme will depend mostly on the sweet will and pleasure of the Ruler. In totalitarian States like Russia and China, Social Welfare programmes are the sole responsibility of the State and there is no need for any public or voluntary welfare organization to supplement the Government's work, as the State is all in all and provides what these citizens need. In democratically governed States like England, America and India the responsibility is shared by the Government, the employer and the employee as well as voluntary agencies.

The trend in modern times in democratically governed countries is for the State to become a Welfare State. In olden days, not very distant, the State had assumed the role of a benevolent parent by providing such welfare services as were considered to be necessary for a Government to be called civilized, namely, the provision of facility for education, medical help and public health, water-supply, sanitation, etc., for its citizens. But under the colonial and imperialist governments these services were given step-motherly treatment. It is no wonder therefore that as far back as 1912 Gopalakrishna Gokhale the ables of our parliamentarians persistently asked the Governmer to provide free and compulsory education to the India children. But no longer can the State confine itself to th restricted field of Social Service in free and independer India.

Changing Conditions

Conditions all over the world are fast undergoing change demanding readjustment of the duties and responsibiliti of States and larger and increasing participation of State to improve the lot of its citizens. Thus the scope an content of responsibility of the State for Social Welfar Services not only embraces all those services which ar vital for the Welfare of the common man such as educatio divine services, medical aid, etc., but also the Welfar of the under-privileged in society such as the beggar, hand capped, old-aged, the under-nourished, the delinquent and the fallen. The State is now also compelled to tak an increasing interest in all activities intende to promote the well being of its citizens by undertakin schemes for housing, town-planning, legal aid for the poo improvement of prisons, provision of community centres rural welfare, child welfare, youth welfare, labour welfare social defence, rehabilitation, aboriginal welfare and othe



Governor Bisnuram Medhi with Commonwealth Press Union delegates who visited the City recently and were guests at a Raj Bhavan reception.

forms of Social Welfare and in general, such other services as are needed by an individual for a comfortable life.

In India the responsibility for Social Welfare is shared by the Union, State and the local Governments as well as the voluntary agencies. While the Governments are sponsoring some items of welfare services directly under their auspices. they are also encouraging voluntary organisations to undertake social welfare work on a grant-in-aid basis. Whenever there are great disasters, as for instance the recent havoc caused by floods in the districts of our State and in other places in the country, or major problems affecting the Social Welfare of the people in the whole country and when the resources of the provinces and the people are unequal to meet the situation, the Central Government steps in to tackle the problem setting the machinery at its disposal in motion to grapple with the situation. Where the problem is complicated, vast and beyond the capacity of the State to tackle, the Central Government steps in with a liberal grant-in-aid to the Provincial Government.

The Problems

India is a welfare State. Its aim is to provide social security and social welfare for every citizen in the country. But as it is still an under-developed country, it has neither the means nor the man power to straightaway transform the entire social structure into an integrated, active, intelligent, healthy, vigorous and purposeful one. It has implemented various social welfare programmes in the First and Second Five-Year Plans depending upon the resources available, both Indian and Foreign. The solicitude of the Indian Government in this behalf may be understood from the steps it has been taking from time to time to tackle several of the social problems, particularly those requiring adequate legislation to empower officials to enforce acts with the help of the police, the Courts and the Public.

Among the various Social Welfare problems, the problem relating to maladjusted groups in our country, particularly those of women and children, has received the greatest attention of the Government in recent years. The Indian Penal Code provides for imprisonment up to 10 years and fines for the procurement, buying and selling of girls under 18 years of age for prostitution. Similar penalties have been prescribed for importing into India girls for prostitution. In addition there is the Suppression of Immoral Traffic in Women and Girls Act of 1956, which provides for the suppression of immoral trafic of women and girls according to the terms of the International convention signed by India in New York in May 1950.

Now all the provisions of this Act are in force all over India. The Act prescribes punishment for brothel keeping, for living on the earnings of prostitutes, for procuring, inducing or taking women or girls for the purpose of prostitution, for detaining a woman or girl in premises where prostitution is carried on, for prostitution, in or in the vicinity of public places and for seducing or soliciting for the purpose of prostitution. The setting up of an adequate number of protective homes for their rehabilitation and for the educational and vocational training of women and girls recovered and detained under the Act is also envisaged.

The Machinery

Thus the State has armed itself with sufficient powers to bring the offenders to book. For without adequate legislation and power conferred on the various officers of Governments, nothing would be possible to implement the programme of Social Defence. Though there is no Ministry of Social Welfare at the Centre, an agency known as the Central Social Welfare Board has been set up charged with the task of promoting and implementing the various social welfare schemes entrusted to it, such as Welfare Schemes for women, children and the handicapped. It has taken up the Social and Moral Hygiene and after-care programme as a part of its responsibilities. The aim is the after-care and rehabilitation of women and adults and children discharged from correctional, non-correctional and care institutions. The programme is implemented by the State Government with Central Government assistance. Forty-seven after-care homes providing appropriate training to the inmates, and 135 district shelters for receiving discharged persons and sending them to the Homes established under this programme were expected to be functioning as on October 1960.

Programmes which cast a statutory obligation on Government , may also be implemented within a liberal departmental frame work giving large scope for voluntary organisations to co-operate at the field level. If Welfare Services

relating to beggars, crime and prostitution which are widespread are to be tackled satisfactorily by voluntary agencies, they can be tackled effectively only with the active help and co-operation of the machinery working in that field.

Role of the State

The question that next arises is whether there is any hard and fast rule demarcating the role of the State in a democratic set up. Social Welfare programmes which are in the nature of statutory obligations have to be primarily initiated and executed by the Government with its own set up, till such time as voluntary organisations capable of carrying on the work come forward to execute the plans. The converse is also true. Where the Government has not come forward to discharge its obligations it is equally the right of voluntary organisations to do the pioneering work. Thus in a democratic State like India there cannot be clear cut demarcation generally, regarding the respective role of Government and voluntary agencies in executing Social Welfare Schemes. They are complementary and supplementary to each other. But in the matter of securing the co-operation of voluntary agencies in any particular field, care should be exercised by Governments to treat the voluntary agencies with all the respect and consideration they deserve. It is a joint endeavour in a common cause. There must be equality of status among the co-operating agencies, Governmental and non-governmental.

Need for Education

In the Third Five-Year Plan the Government have given high priority for moral and social hygiene programmes and the enforcement of the Suppression of Immoral Traffic Act of 1956. The role of public and voluntary organisations in the matter of implementing social welfare programmes under the Third Five-Year Plan is important. It may be stated that no plan of Government for social welfare will succeed without public co-operation. It must be the co-operation of the many and not a handful alone, of every adult, male and female, in the community taking a lively interest in our social problems and actively assisting in the implementation of the various schemes of the Government. This must be also at the village level The panchayats in their new role must take an active part in the implementation of all our social welfare problems. If our social problems are tackeled at the panchayat level they will not assume the menacing dimensions and the complex nature they have assumed in urban areas and all over the country.

Why do social problems arise ? Apart from the social and economic causes, the lack of civic sense, the lack of public spirit, and the lack of realization of civil and moral duties by the people in dealing with fellow human beings, may be said to give rise to complex social problems. Therefore, if optimum public co-operarion is to be secured, it should be the duty of voluntary agencies and social workers to rouse the common man at the village level to his responsibilities and obligations, to demonstrate not only in individual life but in dealings with the community and individuals how one should act as an ideal citizen. Why is it that the public does not realise this ? It is due to wrong up bringing, the absence of proper instruction and guidance in the matter of correct and healthy social behaviour, conduct and etiquette, among the youth. The home which has to play a very large part in this matter has failed to do so, on account of the need for the mother and the father, particularly among the lower strata of society to go early for work and return late at night, leaving their children to fend for themselves. No wonder that children of such parents always have a knack of getting into bad company and becoming problem children having been denied the necessary training for life, and deprived of the capacity and character to face life and its problems boldly and of the opportunity of becoming a useful member of society. This has naturally resulted in a crisis in character all over the country. Though they take different shapes in different places they suffer from the same malady; namely wrong upbringing or no upbringing at all. Therefore, if public co-operation is to be assured it is imperative in the present set up of our country, that regular instruction in the matter of social duties and responsibilities should be imparted to youths and adults at all levels, particularly in villages, to bring about National Integartion physically, mentally, and emotionally. In this field the scope for non-official agencies is unlimited.

Growing Awareness

For instance in social welfare and civic matters which have an immediate bearing on social defence, it is necessary, nay, urgent, that we should concentrate in creating a feeling of awareness among the people in the matter of

Chief Minister Kamaraj with guests at the Raj Bhavan reception to the Commonwealth Press Union Delegates given by the Governor.



cleanliness, sanitation, hygiene and particularly in the matter of social hygiene. As far as social hygiene is concerned it will be a first class piece of social work if the provisions of the Suppression of the Immoral Traffic Act are popularised among the adult population, who must constitute themselves as the unofficial policemen for this purpose. Such public participation in social and civic matters, creates an atmosphere in the community conductive to the growth of healthy and good human relationship. What we require therefore, in our country is a vigilant active and purposeful citizenship. Hunce public co-operation is a *sine quo non* for a permanent and lasting achievement in this field of social defence.

Democracy without public participation has no meaning and cannot exist. Therefore, if our welfare schemes under the Third Five-Year Plan are to succeed, they should be implemented by the enthusiastic co-operation of all concerned. The Union Government in its anxiety to achieve the goal of a welfare State, has been getting financial and technical help from various countries in the shape of loans. This has already made considerable impact on the people. There is now a growing desire on the part of the common man that the programmes should be intensified so that we may assure for our countrymen a higher standard of living as well as a respected and honoured place among the nations of the world. This can be possible only with the whole hearted co-operation of the public.

Public Co-operation

All social programmes are meant for the people. Therefore people should study, discuss, formulate and suggest suitable modus operandi for social welfare programmes and take an active part in implementing them. It is by such measures alone that we can mould our future, consistent with our conception of an ideal, healthy, strong and vigorous community. If the public do not participate, who else can ? Are we to bring in foreign experts to help us for all time ? We must have our own experts and technicians. What is now needed is a fresh and vigorous attempt and it must be an all out effort to knit the various sections of the community into one integerated whole, without distinction of high and low, caste or creed. If those in the community, who are enlightend and are conscious of their social and civic responsibilities, who are enlightend and have leisure should offer their effective co-operation to Government, the realisation of this much desired and long delayed ideal will be reached within a very short time. This will also ease the burden that both the Government and voluntary agencies have to shoulder in respect of social welfare programmes. And the gain to the nation in the shape of increased happiness and the diminution of misery and suffering all round, will be something enormous which cannot be assessed in terms of rupees and naye Paise.

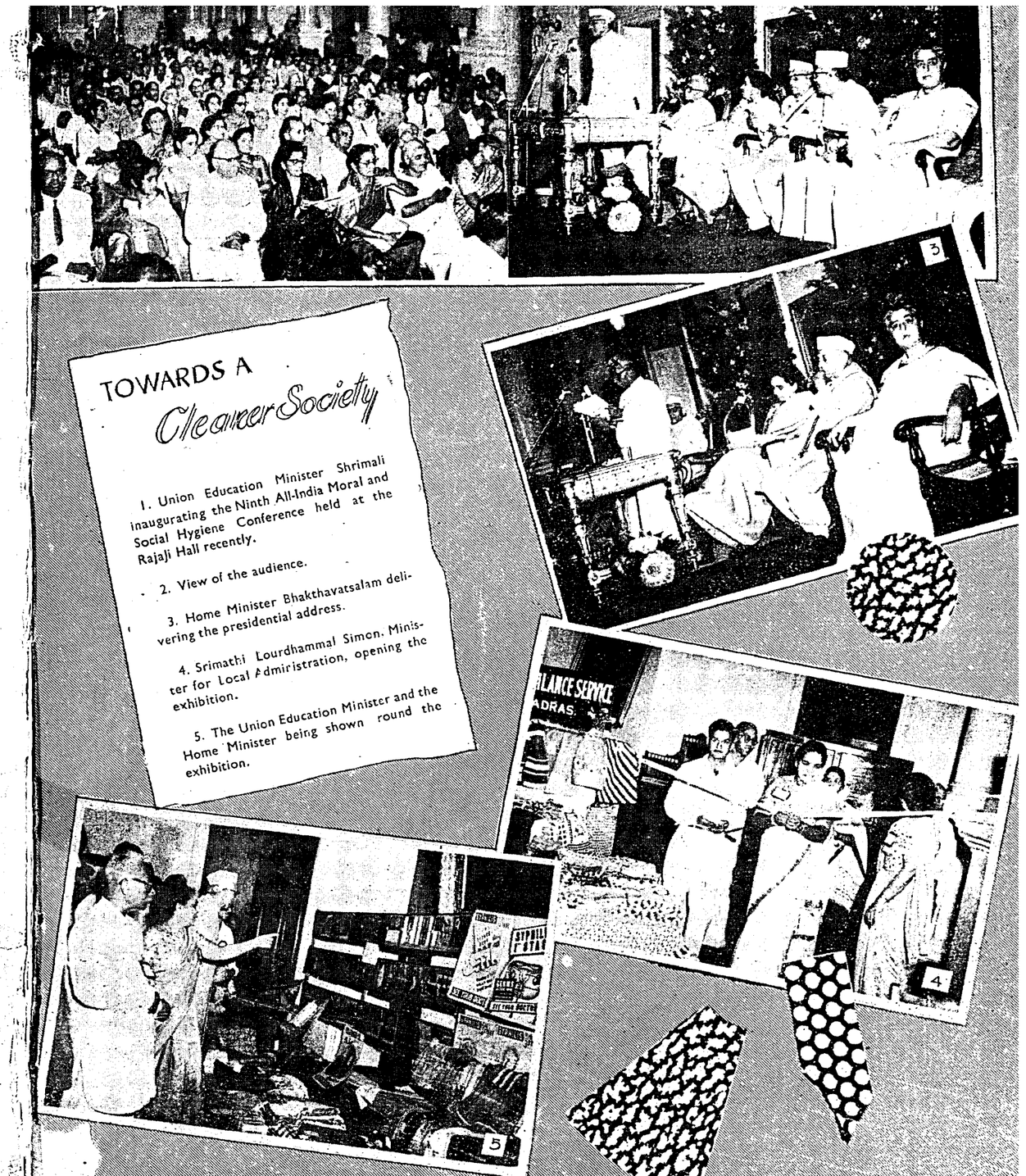
Noble Mission

Planning implies the mobilization of the country's resources in men and money for the achievement of definite ends. To secure public co-operation, i.e., co-operation of the community's resources in men and money, in addition to those of the State, our efforts should be directed towards the moulding among the people of a healthy and helpful attitude towards social welfare programmes. When social and national consciousness of the community as a whole is aroused public co-operation will take concrete shape by the public assistance that will be forthcoming both in material and physical terms for the various plans of social welfare.

Though the Government may formulate plans and provide funds for their implementation, the effort of the Government alone without the active co-operation of the community will not yield the expected result even partially. To make a success of the plan and the social welfare programme under it, like the programme under soci defence, people must of their own accord come forwar take the initiative and through their voluntary effort mal full use of the facilities provided by Government to tack this particular problem. It is only when a large numb of people, drawn from all sections take to social defen that the problem can be tackled to a larger or smalle extent depending on the number of voluntary agencie participating in the work of social defence. It is no doubt an inspiring and noble mission, but one that requires constancy and courage. Voluntary agencies can play several roles depending upon their resources, trained personnel, equipment and experience. In the first instance, there is need for a widespread training to those engaged in this field of work. The training of prosepecting voluntary workers, in service training and refresher courses to workers of voluntary agencies are vital for strengthening

As part of the Inter-State exchange of cultural troupes, a party of artistes from Bihar presented the famous 'chow' dances in the city recently. Picture shows a typical sequence from the programme.





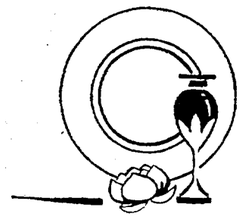
the army of workers engaged in social defence work. Secondly, voluntary agencies can very usefully undertake research programmes, which are likely to be of great help to Government in testing the efficacy of the existing laws and for voluntary agencies to adjust their schemes of welfare work in the light of the experience gained by research workers. Rescue of victims from brothels, their rehabilitation, are again tasks which can be safely entrusted to well trained and reputed voluntary agencies. This implies the active and continuous assistance of the Government aided by legislation. Education of the public about the devastating evils of prostitution and the problems relating to immoral traffic, medical and public health measures, training of victims to become economically self-dependent, with a view to their ultimate rehabilitation and absorption in the community as self-respecting citizens, are all items of work which can be succesfully done by voluntary agencies.

The Public and voluntary agencies can play a very important role if they would undertake to introduce in schools lessons on sex education suited to various age groups along accepted lines, start child guidance clinics, marriage guidance clinics, family welfare clinics, parent teacher counselling associations, and centre for treatment for V.D., etc.

Lastly, it is the public and voluntary agencies along that can advocate a change in the way of life of our people to suit the changing pattern of society. Some of our ways of life, community practices, and customs have become meaningless and out-moded and positively harmful to the healthy growth of the community. A careful study of some of these should be made and such modifications as would be desirable should be made on a community wide scale without violently disturbing or bringing about a break with the roots of our wholesome culture and tradition.

Industrial Estates on Co-operative basis

As many as 100 industrial estates would be set up on a co-operative basis during the Third Plan period. Avenues are also being explored for getting institutional finance for these co-operative industrial estates. There were nearly 30,000 industrial co-operative societies all over the country at the end of 1959–60, as compared with 20,000 such societies at the end of 1957–58. The largest group among the industrial co-operatives is the weavers societies, which number over 11,000. There are over 9,000 such societies covering khadi and village industries. A scheme has been sponsored for sanctioning share capital loans, by Government to members of industrial co-operatives. The Reserve Bank has offered facilities of financial accommodation available to the co-operative banks to the handloom co-operatives as well. A Guarantee Scheme has also been evolved, under which 90 per cent of the loss incurred by the co-operative banks on loans to the industrial co-operatives would be borne by the Government. This scheme is separated from the Credit Guarantee Scheme, which the Reserve Bank is operating in selected districts for promoting small-scale industries. Another step which has been taken relates to the setting up of the industrial co-operative banks at the State level in Mysore, Uttar Pradesh, Rajasthan and Madras and at district or regional levels in Gujarat, Maharashtra and Mysore States.



The Story of Lac

J. DHAYANAND RAO, *Forest Utilisation Officer, Madras.*

Most of us hear disc music frequently, but few of us know from what gramaphone records are made. All our confidential letters, covers and packages, we seal with sealing wax, but very few of us know where the wax comes from. We would all be surprised to learn that into the making of all these and many more goes an animal product called lac, which is the resinous secretion of an insect. In this article, the author discusses lac farming in India and its prospects.

Most of us hear disc music frequently but few of us know from what gramaphone records are made. All our confidential letters, covers and packages, we seal with sealing wax, but very few of us know where the wax comes from. We would be surprised indeed to learn that into the making of all these and many more goes an animal product, a secretion of an insect.

Lac which is one of the chief constituents of the disc and the sealing wax is a resinous insect secretion. The lac insect feeds and thrives on the sap of certain plants. By means of special structures it is able to pierce the outer layers of succulent branches and reach the sap. Feeding on the sap, it grows and secretes resin.

These lac insects are located on the tender and succulent tips of branches. These occur in thousands and the secretion from each, coalasces with its neighbours so that a complete encirclement of the twig occurs, thickness of the secretion depending on the health of the brood and succulence of branches. When the lac is mature it is harvested scraped, dried, graded and sold. Usually two crops can be obtained per year.

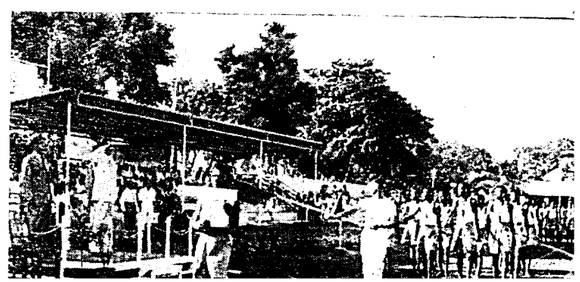
Lac yielding trees

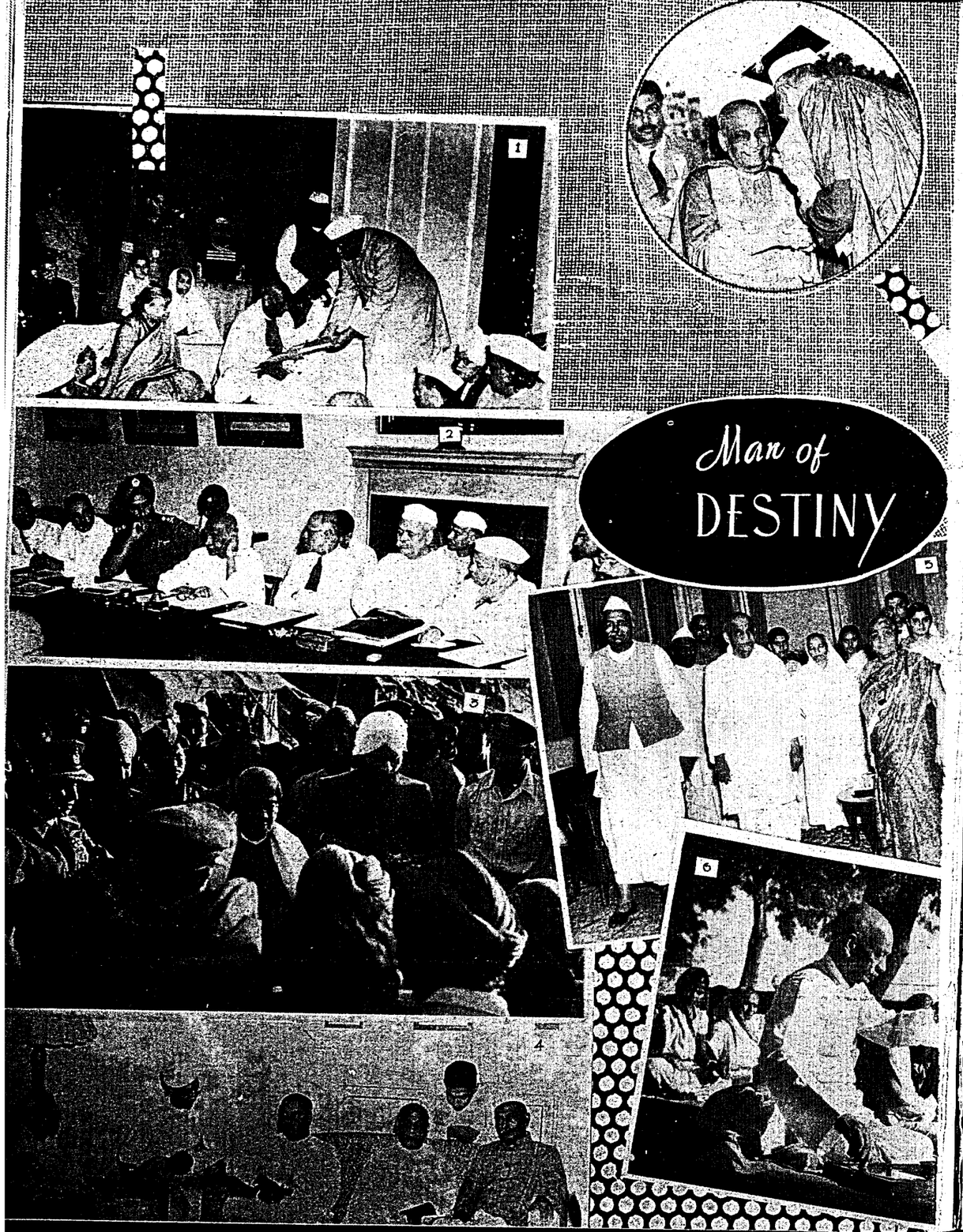
Trees on which lac can be grown are given below :—

1 Butea monosperma (Palas).
2 Zizyphus jujuba (Ber).
3 Schleichera trijuga (Kusum).
4 Zizphus xylopyrus (kottaiclandai).
5 Acacia arabica (Babul).
6 Cajanus cajanus (Toverai).
7 Leea aspera.
8 Shorea talura (Talavi).
9 Certain Ficus species.
10 Pithecolobium (Rain tree).

Lac cultivation can be undertaken by any person who has a few trees in his compound. Usually trees have to be pruned and fresh and succulent branches allowed to develop. (Branches above 2" thickness should not be cut). When fresh branches have appreared (after 12 to 18 months) 'infection' of these branches has to be carried out.

The salute being taken at the ceremonial march-past in connection with the Madras Fire Services Annual Sports held at the Rajarathnam Stadium recently.





To the Left : Being greeted by the Vice-Chancellor of the Banaras University which conferred on him the Doctor of Laws degree.

1. Being presented the commemoration volume published to honour him.
2. Conference of States and Provinces.
3. With members of the Royal Indian Air Force.
4. Meeting of Rajpramukhs and Ministers.
5. With Pandit Pant and Mrs. Sarojini Naidu.
6. At the Rajkhot Samadhi.
7. With Lord Mountbatten.
8. Being sworn-in as Union Home Minister.
9. With Princes of Indian States.
10. With Nehru and Prasad.
11. With Sir Anthony Eden.

Infection is carried out by means of tying twigs containing young lac insects. These are known as brood lac sticks. These sticks have to be tied at the base of these fleshy branches. Two or three brood lac sticks have to be tied and this should be done in such a way as to facilitate easy migration of the insects from the brood lac sticks to the fleshy branches. After three weeks, the brood lac sticks may be renewed and progress of infection watched. The first sign, the appearance of small reddish dots which slowly increase in size and area, merge and coalasce and form a continuous band. Now the crop is mature for harvest. This, in short, is the story of lac infection and harvest. It is quite simple and requires but little attention and can be taken up to augment one's resources. India today supplies roughly 70 per cent of wood requirements and over 90 per cent of Indian production is exported.

An important constituent

Lac is the most important constituent which goes into the production of furniture polishes, floor polishes, automobile polish, shoe polish and in varnishes too. Shellac is made from lac. Button lac, laxwax and sealing wax are a few of the other lac products. Synthetics at one time appeared to take the place of this natural animal product. But lac has certain qualities which are not found in the synthetic and so it holds its own still.

At present the effort to raise lac is restricted chiefly to the Forest Department. The Forest Department has set up nine lac farms all over the State in Madurai, Tirunelveli, Coimbatore and Nilgiris districts, and it is proposed to increase the lac farms to 15 during the Third Plan period.

The lac harvested from the present nine centres is collected at Cumbum (Madurai) and sold in auction twice a year after reserving necessary quantities for the making of polishes and varnishes at the Government Lac Factory, Cumbum.

It is hoped that the members of the public would come forward and attempt to augment their resources by growing lac in all suitable areas.

Drama contest on Indian Unity Theme

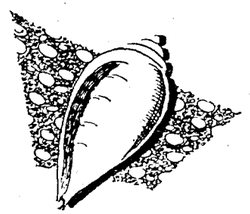
The Union Ministry of Scientific Research and Cultural Affairs has instituted a drama competition in English and languages mentioned in the Eighth Schedule to the Constitution for the best plays written after April 1, 1961, on the theme " India's Quest for Unity ".

A prize of Rs. 4,000 will be awarded for each of the best plays written in Assamese, Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Tamil, Telugu, Urdu and English. The length prescribed is a play of about two hours duration.

The Union Ministry might undertake the publication of any of the prize-winning entries for which the author should agree to give the necessary licence. A percentage royalty on the published price will be paid to the author on every copy sold.

The last date for receipt of entries in the Union Ministry of Scientific Research and Cultural Affairs is February 28, 1962.

A Divine Symbol



The Valampuri Chank

K. A. DORAIRAJAN, *Assistant Director of Fisheries, Tuticorin.*

For a biologist, the Valampuri Chank may be just a freak of nature, but to the devout Hindu, it is a divine gift. In many ceremonial customs and rites, it figures as a sacred symbol. It is significant that during the last 50 years, only 33 Valampuri chanks have been officially recorded in Madras State though the general tally of Chank fishery in the State for the period works out to about three million. This article traces the history of chank fishery in Madras State with particular reference to the Valampuri Chank and the romance surrounding traditions and usages connected with it.

The " Chank " is the English term for the Tamil " Sangu". A reference to Tamil classics furnishes evidence of the existence of Chank Fishery in South India from the times of the Pandyan Kings over 1,800 years ago. Chank Fishery has been an adjunct to the more romantic pearl Fishery all these years. Both these Fisheries were sovereign prerogatives. The celebrated Nakkirar, was also a chank cutter by trade. The chank industry faded away during the 14th century which marked the close of Hindu Supremacy in the south.

The chanks (Turbinella Pyrum Linn or Xancus Pyrum) including the Valampuri varieties are large gastropod molluscan shells available in the sandy beds (known as parrs) in the seas off the coast of Tinnevelly and Ramanathapuram in the Gulf of Mannar and off the coast of Ramanathapuram, Thanjavur, South Arcot and Chingleput districts in the Palkbay. Some shells are fished off Malabar, Kathiawar and Ceylon waters also.

Property of Government

These sandy beds or parrs exist at depths from 2 fathoms to 12 fathoms and up, six to eight miles from the shores. The depth and distance of parrs vary from each coast. The chanks are sendentary creatures with very little movement. The animal has a very thick massive shell which forms a protective armour.

These chanks are the property of the Government (Government monopoly). and are fished by professional divers who go down to the sea bed and pick them up. These shells are disposed of by the divers to the Government or the lessees (where the fishery is leased out) at stipulated rates. Shells below a diameter or $2\frac{1}{4}$" are not permitted to be fished and are also not paid for. The under-sized shells below the $2\frac{1}{4}$" gauze are returned to sea for developing to full size, provided the animal is still alive. If the animal is dead the shells are confiscated by Government.

There are various qualities in the chanks and they vary considerably in size, shape and colour depending on the coast where they are fished. The best quality chank comes from the sea off Tinnevelly coast (off Tuticorin).

Varied uses

In India chanks have been put to varied uses since early times. As a trumpet (wind instrument) the conch shell has been in use from time immemorial. The commencement of the religious services in a Temple is heralded by the blowing of a chank. It is used as an instrument to call people to their religious rites and in the invocation of gods during the various religious ceremonies. It has thus become an instrument of reverence to the devout Hindu.

They are used in making fancy articles like bangle, rings ear-rings, pendants, etc. At present chanks are exported in large quantities to Bengal where these fancy articles are manufactured on mass scale. The Chank Bangle Industry of Bengal is a flourishing trade and the main source for the raw materials is South India. Chanks are also used as talisman for good breed of cattle. All over the Tamil

districts the custom of tying a small chank shell on the forehead or around the neck of valued cattle, is prevalent. The superstitious belief is that the valuable cattle would be protected from the 'evil eye'. They are also used as feeding cups for babies. The wormed and dead shells which are useless for manufacture of fancy articles are converted into lime by being burnt in kilns.

As currency

The Naga tribes of Assam were using chanks as currency a hundred years ago. The opperculam or the foot (the horny portion of the animal) of the chank is used as an adhesive in the manufacture of agarbathies. Chank flesh is also used as food by the poor.

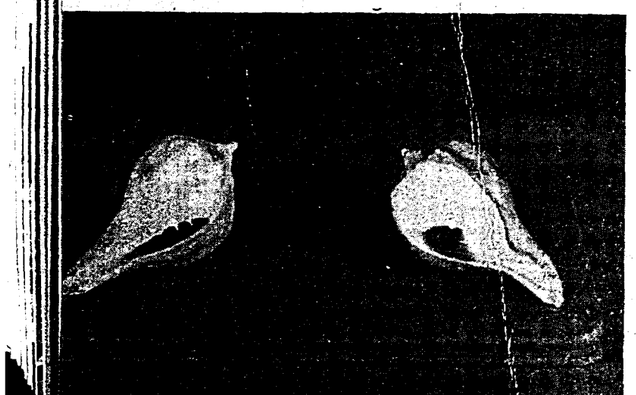
The chank shell is used medicinally in the treatment of varied ailments. Chank Baspam is used as a specific for skin eruptions, Asthma, cough, rickets, gonorrhoea, dyspepsia. The use of the Chank Baspam by native practitioners may not be without reason. The carbonate of lime of these shells is laid down within a delicate animal membrane and its consequent minutely divided nature may possibly render it more easily assimilable and efficacious than non-organic carbonate. Whatever be the scientific explanation the fact remains that it is still used in Indian medicine.

Mythology

The cult of the chanks as religious symbol in India dates far beyond existing traditions. The Chank forms one of the two important emblems of "Lord Vishnu". Frequent reference to the chank is made in the Great Epics, "The Ramayana" and the 'Mahabharatha" wherein mention is made of the chank being used as a martial trumpet by Great Warriors. Mention is made of the following Famous conches :—

1. Paundra (belonging to the demon Paundra) was used by Bhima.

Two chanks of nearly equal size, the one on the right with opening on the right side is the Valampuri variety while the chank to the left with mouth on the left is the Edampuri or common variety.



2. Devadatta (God given) was used by Arjuna.

3. Anantavijaya (Eternal Victory) belonged to Yudhisthira (Dharma).

4. Sughosna (sweet voice) belonged to Nakula.

5. The Panchajanya of Lord Krishna.

Thus each hero has his own immortal conch. The last mentioned conch originally belonged to demon Panchjana who lived in the underworld terrorising the Devas and others. It is mentioned that Lord Vishnu took the form of a Fish and dived into the sea and vanquished the demon and took possession of the conch. Thence forth the conch became an emblem of Lord Vishnu.

All the Avatars or incarnations of the Lord Vishnu are represented with a chank in the left hand and the chakra or the discus in the right hand. In all the cases the chank depicted is of Sinistral form (left handed chank). Such sinistral forms are a rarity so choice and valuable as to be worthy to form an adornament of a God.

Ceremonial customs

It has to be stated that once chank played an important role during the marriage ceremonies, though now a days the custom is scarcely practiced in South India. In Bengal, marriages conducted according to Hindu rites include placing of chank bangles upon the Bride's wrist. But in South India, the use of chanks during weddings is considered as inauspicious and chank blowing is associated with funeral ceremonies. The association of chank with weddings is more deep and intimate in Bengal than elsewhere.

Whenever a temple is built or a shrine is established a special libation to the God is offered from 108 to 1008 shells. These shells are also buried among the foundations of buildings. Many Hindus perform a special "Chankusthambanam" ceremony when misfortune is attributed to in auspicious sites and buildings.

There is also another important custom among some Vaishnavites ; the initiation ceremony during which the symbol of the chank is branded on the left arm of the person being initiated and the symbol of the Chakra is branded on the right hand. Even women among these Vaishnavite families undergo this ritual.

Whatever be the origin of these customs and rites it is established beyond doubt that the chank stands as a sacred symbol among the Hindus.

Sinistral chanks

For a Biologist a Valampuri chank is just a freak among the common chank (Turbinella Pyrum). For a devout Hindu it is nothing short of a divine gift. The only difference is that the twist in the Valampuri shell is towards the left. So valampuri shells have their openings on the right side (when the shells are held with their narrow ends pointing away from the observer).

In the ordinary shell or the Edampuri shell the twist of the coloumella is to the right and so the mouth opening is to the left side.

The extreme rarity of these Valampuri shells can be gauged from the fact that only 33 shells were officially recorded during the last 50 years of Chank Fisheries in Madras State, though about 100 million chanks would have been fished all these fifty years. Thus the appearance of a Valampuri chank has worked out to one in 3 millions. This extremely rare appearance has given it rare value. In olden days the shells were valued at their weight in gold. Mr. James Hornell (1914) has estimated the value of a Sinistral shell at Rs. 50 per tola weight. Another curious factor gleaned from the data recorded is that most of the Valampuri chanks were fished off Ramanathapuram waters.

A record collection

Only in the year 1952 a record collection of thirteen (13) shells was obtained. During 1945–46 four shells were fished. Between 1945–46 to March 1960 a period of nearly 15 years, except for one chank fished in 1957–58, there was no appearance of a Valampuri as per recorded data. Three chanks were again fished in Sivaganga waters in 1960–61. During all these years from 1908 only on two occasions, Valampuri chanks were recorded from the Tuticorin sea, once in 1929 and again in 1957–58. The rest were all from Ramanathapuram waters. The fact that more of these shells are fished off Ramanathapuram district coast than from Tirunelveli area, where comparatively the Chank Fishery is of greater magnitute, is unexplainable.

Though extremely rare in nature, the existence of these sinistral shells in greater numbers in the sea in the proximity of the Holy Rameswaram shrine in Ramanathapuram district may be a matter of significance to a Devout Hindu. Many of the Chief Temples in India possess one or more of these shells. Even in Tibetan monasteries these shells were in use.

Fancy prices

As per present practice whenever a Valampuri shell is fished it is surrendered to the Government by the finder, except in the case of Ramanathapuram Chank Lessee who pays a royalty of Rs. 500 every year to Government



Three Valampuri chanks obtained from Sivaganga waters during 1960–61. The smallest chank in the picture has a sharp apex which is the protoconch not usually seen in the bigger chank. This gives an added touch of beauty to this chank.

towards cost of one Valampuri chank whether he be fortunate enough to find one or more chanks or none at all during the year. As per present practice the actual finder (diver) of the Valampuri shell is paid the value of 1,000 shells. The co-divers who have accompanied the fortunate finder are also paid small rewards. The Valampuri shells are sold by Government by tender system.

It is ardently believed by all Hindus that the possession of this sacrosanct sinistral shell (Valampuri chank) confiers everlasting bliss and prosperity on its owner. These shells are purchased by devout wealthy Hindus at fancy prices for either presentation to temples or for their own use for their daily pooja. The sinistral shells are mounted in handsomely decorated gold and silver settings and are used as libation vessels in the services to God in Hindu Temples.

An Interesting Legend

An interesting legend hails from the holy city of Tirukalukundram, a Saivite shrine in Chingleput district about the chank. It is stated that once every 12 years a Sanku (Chank shell) rises from the large temple tank of this shrine, known as the Sankuthirtham. This miracle is traced to the ancient Sage Markandeya who once happened to visit this holy shrine. The legend states that Markandeya found that he had misplaced the usual pooja box which contained a sacred chank and being unable to perform the pooja at the shrine, prayed God to help him in his misfortune. Then there appeared a chank from the tank which enabled him to perform his pooja. Whatever be the authenticity of this legend it is established that the chank is a very important and essential article in the domestic worship of Hindus.

For a detailed study about the chank industry and the cult of chanks in Ancient India, readers are invited to go through the Book "The Sacred chank of India" by James Hornell, F.L.S. (1914) which is published in the Madras Fisheries Bullettin No. 7.



Urban Cooperatives AID DEVELOPMENT

V. VENKATACHALAM, *Deputy Registrar of Co-operative Societies, Madras.*

Co-operation has an important role to play in the development of rural as well as urban areas The main problems of socio-economic development and what co-operation has done and is doing to solve these problems are outlined in this article with particular reference to urban areas. This feature is presented in connection with Co-operative Week celeberated recently in the City as part of the All-India Co-operative Week Celebrations.

Co-operation as we know, is a form of organisation, wherein persons voluntarily associate together as human beings, on a basis of equality, for the promotion of economic interests of themselves. Such organisations which were introduced into this country 57 years ago for providing agricultural credit and relieving rural indebtedness, came to be gradually extended to cover every field of human activity.

The Planning Commission recognised Cooperation as "an instrument of democratic planning, combining, initiative, mutual benefit and social purpose ", and observed that the success of planning should be judged, among other things, by the extent to which it was implemented through co-operative organisations. Co-operation has thus an important role in the development of rural as well a urban areas in the present tempo of development under the Second and Third five Year Plans.

A section of the delegates at the Town and Country Planning Seminar held in the city recently.



Main Problems

The main problems of socio-economic development in urban areas to be tackled through co-operation are the following :—

(i) Dispensing credit to large classes of people who live by occupations other than agriculture including artisans, traders and employees under Government or other public or private bodies.

(ii) Supplying provisions including foodgrains and groceries to the consumers to the best advantage, reducing trading costs.

(iii) Supplying milk, an indispensable diet article-from infant to adult, in sickness or in health.

(iv) Providing credit for constructing houses or improving existing houses.

Credit for Traders

Credit for artisans or traders in urban areas is provided by co-operative urban banks and credit for employees of Government or other public or private bodies is provided by the various employees' credit societies. There were 158 co-operative urban banks in the State on 31st December 1960 with 4·38 laksh of members and share capital of Rs. 113·56 lakhs. Their working capital amounted to Rs. 873·30 lakhs and they held deposits to the extent of Rs. 691·84 lakhs, constituting 79·27 per cent of their working capital. They issued loans amounting to Rs. 414·76 lakhs during the half year ending 31st December 1960 on the security of deposits, mortgage of immovable properties, pledge of gold jewels, etc.

The Banks which have storage facilities also issued loans on the pledge of agricultural produce and merchandise. They provide banking facilities like collection of bills and cheques, transmission of funds, etc., and even discounting of bills is undertaken by a few efficiently run big banks. Government have recently sanctioned Rs. 60,000 to 3 urban banks at Rs. 20,000 each (Rs. 15,000 loan and Rs. 5,000 subsidy) for constructing godowns.

Employees' Societies

There were 563 employees societies on 31st December 1960 with 2·94 lakhs of members and share capital of Rs. 147·01 lakhs. They issued loans amounting to Rs. 706·11 lakhs during the half year and loans amounting to Rs. 596·01 lakhs were outstanding on 31st December 1960. They held deposits to the tune of Rs. 298·34 lakhs which represented 52 per cent of their working capital. These institutions render commendable service to their members by not only providing them with cheap and timely credit for essential purposes but also inculcating the habit of saving among them by tapping monthly recurring thrift deposits to be ultimately transferred into fixed depoits.

Primary Co-operative Stores in towns or semi-urban areas are the organisations which secure goods and services for thier members to the best advantage, reducing trading costs. There were 492 such stores on 31st December 1960 with 3·06 lakhs members and share capital of Rs. 44·53 lakhs. They supplied foodstuff, textiles (both mill and handloom), groceries infant foods, drugs etc. They purchased goods worth Rs. 545·81 lakhs and sold to the value of Rs. 603·91 lakhs during the half year. They have built a total Reserve Fund of Rs. 89·56 lakhs on 30th June 1960.

Premier Co-operative

The Triplicane Urban Co-operative Society Limited, is the biggest premier co-operative stores of the State. The business of the co-opeative stores is generally characterised by sale at maket price, sale for cash and sale to members. All the stores rendered yeomen service during the period of scarcity created by war. They have made a name as fair distributors of controlled commodities. Government have extended to them the following concessions to encourage their business and enlarge their clientaele : 1. Sales to non-members is permitted upto 31st December 1961, 2. Exempted from the levy of supervision fees year after year ; 3. Import licences are given to stores for certain articles subject to certain conditions ; 4. Preference is shown in allotting fair price shops and distribution of scarce commodities.



Council Chairman Cherian addressing the Town and Country Planning Seminar held at Rajaji Hall recently.

During the Third Plan

The following assistance is proposed for Co-operative Stores under the Third Five-Year Plan : 1. State Participation in the share capital of 100 Co-operative stores subject to a maximum of Rs. 2,500 in each ; 2. Revitalising of 100 stores by subsidising the cost of managerial staff on a graded scale upto Rs. 900 for the first year, Rs. 600 for the second year and Rs. 300 for the third year ; 3. Providing 50 Stores with a loan of Rs. 5,000 each for installing coffee grinding machinery ; 4. Providing 20 stores with loan of Rs. 20,000 each for installing oil crushing machinery.

With all this assistance from the State, the Co-operative stores can look forward to increase their services in urban areas.

Milk supply

Milk supply in urban areas is of special importance to preserve the health of the urban population. A greater part of the milk required for urban supply has to be pooled from villages, processed or pasteurised and distributed. The experiment was tried in the Madras Co-operative Milk Supply Union in 1927 and it was gradually improved by installing a pastuerisation plant in 1938. The union is now handling about 5,000 M.Ms. of milk a day. Encouraged by the experiment, the Coimbatore Cooperative Milk Supply Union installed a pastuerisation plant at a cost of Rs. 11 lakhs under the Second Five-Year Plan and it is to be commissioned shortly.

During the Third Five-Year Plan period it is proposed to have a plant in Madurai Co-operative Milk Supply Union at a cost of Rs. 41·47 lakhs with aid from the United Nations International Children's Emergency Fund(UNICEF) to the extent of Rs. 16 lakhs in the shape of machinery. It is also proposed to instal such plants of smaller capacity



Chief Minister Kamaraj who gave a dinner at Hotel Connemara to meet the delegates to the U.N. Seminar on Industrial Estates is seen in the picture greeting the guests.

in the Co-operative Milk Supply Unions at Tiruchirappalli and Thanjavur at a cost of about Rs. 12 lakhs each, during the same period. There are now 21 Co-operative Milk Supply Unions in important towns of the State. There are also big co-operative Milk Supply societies in towns like Tirunelveli, Virudhunagar, Srivilliputhur, Kumbakonam, etc., supplying milk to the urban population there.

Housing

Housing is a primary need for every family next to food and clothing. The problem of finding suitable housing accommodation in urban areas became acute in 1947 on account of the rapid growth of population and the large scale migration of people from rural to urban areas as a result of the establishment of new industries, offices and educational institutions in towns and cities. In that year sites suitable for construction of houses in Municipalities and major panchayats were selected by special Committees appointed for the purpose by Government. After the sites were selected, co-operative housing societies of different types were started for constructing houses with the aid of loans provided by Government. There were 298 urban housing societies of all types on 31st March 1961 with 34,819 members and share capital of Rs. 172·28 lakhs.

These societies executed the following schemes sponsored by Government: (1) Low income group housing scheme intended for the benefit of people with annual income upto Rs. 6,000; (2.). Middle income group housing scheme intended for people drawing above Rs. 6,000 up to Rs. 12,–00 per year; 3. State urban housing scheme under which the maximum loan admissible is Rs. 12,000 limited to eighty percent of the cost of construction of a house; (4) Subsidsed industrial housing scheme of the Government of India for industrial workers under which 65 per cent of the ceiling cost of the tenements will be provided as loan and 25 percent as subsidy the balance of 10 per cent being contributed by the workers concerned.

Provision for loans

The loans under the above schemes are provided by Government repayable ordinarily in 20 years. The current rate of interest on loans to societies is 4½ per cent under the Low Income Group Housing Scheme, 4¾ per cent under the State Urban Housing Scheme and 5 percent under the Middle Income Group HousingScheme. During the decade covered by the 1st and 2nd Five Year Plans, Government advanced loans amounting to Rs. 515·08 lakhs under all the housing schemes except the Subsidised Industrial Housing Scheme. Under the subsidised industrial housing scheme loans to the extent of Rs. 23·5 lakhs and subsidy to the extent of Rs. 3·65 lakhs were disbursed. 9,754 houses were constructed upto 31st March 1961 and 1686 houses were under construction on that date. It is proposed to issue loans to the extent of Rs. 500 lakhs under the above housing schemes duirng the Third Plan period.

In order to provide long term loans repayable in 15 years for redemption of mortgages on houses and for making additions, improvements or alterations to houses in urban areas, 31 primary co-operative house mortgage banks were formed upto 31st March 1961. They had 12,620 members with share capital of Rs. 11·53 lakhs. The loans outstanding against their members on 31st March 1961 amounted to Rs. 63·62 lakhs. The maximum loan admissible is Rs. 10,000 subject to 50 per cent of the value of the houses offered for mortgage.

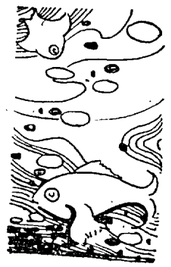
Liberal Assistance

All these banks are financed by the Central Co-operative House Mortgage Bank Limited, Madras which was started on 15th July 1959. Government have taken shares to the extent of Rs. 5 lakhs in this bank and sanctioned Rs. 6 lakhs as ways and means advance to the bank. They have also guaranteed the repayment of fixed deposits to be received by the bank to the extent of Rs. 25 lakhs. The Life Insurance Corporation of India has sanctioned a loan of Rs. 20 lakhs to the bank on the guarantee of the State Government. Thanks to the liberal assistance provided by Government through housing co-operatives and house mortgage co-opeative banks in the State, we can well hope that the housing shortage in urban areas will be eased to a considerable extent.

The goal

The overall satisfactory position of urban co-operatives in our State should not however, make us complacent. The Governor of the Reserve Bank of India in his inagural address at the last Tamil Nadu Co-operative Conference, very impressively informed us that the co-operative sector in Japan is a surplus sector which feeds the rest of the economy rather than being dependent on it. Urban Cooperatives, particularly the urban credit cooperatives in Madras State can develop and contribute to a considerable extent to raise the co-operative sector here to a similar level. Let us strive for that goal—*Courtesy*: A.I.R

At Man's Command



ARTIFICAL BREEDING OF FISH

V. D. SPURGEON, *Deputy Director of Fisheries, Madras.*

Fish varieties suffer adversities in breeding, in nursing their young ones and in protecting themselves from perils in the watery wilds. Hence the need arose for a technique to be evolved by which fish could be made to breed artificially. And from the time Sir Wilson set up an artificial 'hatchery' at Avalanche in the Nilgiris plateau in 1906, artificial breeding of fish has progressed in Madras State. In this article, the author traces developments and discoveries that have revolutionized piscicultural practices in the State.

In Nature all animals breed and propagate their kind so that on Earth, there is an unbroken continuity of lives smalland big. Many among the animal kingdom, such as cattle poultry, game and fish are of immense service to Mankind. While cattle, poultry and game animals breed unhampered and do not suffer much natural handicaps in propagation, the group of aquatic animals like fish suffer adversities in breeding, in nursing the young ones and in protecting themselves against perils in the wild water environs. Pisciculturists have therefore been worrying for a long time to evolve some technique by which the fish could be made to breed at Man's command..

As early as 1906 an eminent fish culture expert by name Sir H. C. Wilson was appointed by the Government of Madras to look into such problems. He concentrated his efforts to start with on an imported European variety of fish called Trout and set up an artificial hatchery for it in the Nilgiri plafeau at a place called Avalanche. The technique he evolved and perfected there in 1906 is being followed up successfully by the Madras Government Fisheries Department even to-day.

Sir Wilson's Method

By Sir Wilson's method of artificially breeding Trout, the sexually mature live male and female Trouts are caught gently and the female fish is kept in between two hands and given a gentle twist. Mature pepper-sized golden eggs of the fish pop and flow out of the fish and these are collected in a clean basin. Then a mature male trout is taken and instead of twisting, two fingers are pressed against the abdomen and moved towards the genital aperture. Milky milt spurts out of the male which is collected over the golden eggs of the female in the basin. A feather of a bird is then used to spread milt thinly over the eggs. Immediately eggs are fertlised. The eggs are transported in specially designed boxes from the river site to the Hatchery at Avalanche where the eggs are arranged neatly in single rows on grills and natural stream water is diverted and allowed to flow in gentle currents to aerate the eggs. The eggs hatch and young fish emerge. They are thereafter transferred to nurseries and reared with particular care and scientific precision.

Finance Minister Subramaniam witnessing exhibits in the 'Tagore in India and Abroad' exhibition inaugurated by him at the Rajaji Hall recently.



Such artificial breeding is not suitable for other kinds of fish in the State. Therefore Pisciculturists were in quest of yet another technique by which carps of our rivers could be made to breed at will. Carps form the majority of our riverine and lactustrine fisheries. Carps are a set of fish that look silvery white, grow very fast live mostly on vegetarian diet and amicably sojourn with other fish. In other words, they as a class do not eat other fish and thus do not spoil the fisherey wealth of our rivers and tanks.

The Real Problem

Hence throughout the world carps are acclaimed by fish farmers though to a fish eater carps present the problem of too mush tiny muscular bones to be got rid of at the table

But the real problem of carps is not in its " bony " nature but inits refusing to breedin man-made ponds and tanks and in captivity. To put it more clearly, carps breed only in fast flowing rivers with the advent of the monsoon and onset of freshets and in inaccessible upper reaches in difficult hilly terrain and jungly topography. So their seeds have to be collected every year and transplanted in ponds and tanks to rear them for food. This entails lot of hard work and results in a high percentage of mortality l low percentage of recapture at marketable stage.

To obviate such difficulties and to make sure that ps breed in kitchen garden ponds too at beck and call, Government of India Fish Research Station at Cuttack perfected a technique called "Induced Carp wning" last year.

By this method sexually mature male and female ps of the same species are kept alive in a pond and when ded they are caught by nets and they are administered h what are called " Pituitary Injections ".

Breeders are reared in fertile ponds manu ed with organic nure (example—cowdung). Between age two and e, the carps attain sexual maturity or 4th stage of adial development. If they are allowed to grow her, in the 5th stage the gonads are reabsorbed or ome egg-bound.

rmone Injection

When a mature pair of live carps is available in the d, the pituitary gland preserved in alcohol is taken out dissolved in 0·3 saline solution and taken in an injec- syringe and injected in the area above or below the ral line (of the sexually mature live male or female) near the Caudal peduncle. The dosage depends upon the " donor ". If the " donor " is a 10 lb. fish, it can be injected in a 5 lb. pair. The male and female fish so injected are released in a cradle shaped cloth or mosquito cloth net half immersed in the pond. Soon the male and female react to the harmone injection and indulge in amorus play and they rush together, jump, beat violently, and then " Spawn " after eight hours inside the cloth net. The " spawn " or fertilised eggs are collected and tranferred to a separate cloth (where no adult fish is kept). There they hatch out undisturbed.

After hatching out the hatchlings are removed to specially prepared nurseries which have been treated in advance with soap emulsion (with 50 lb. of soap and 15 lb. of oil per acre) to kill fish enemies. In 15 days the hatchlings attain one inch size—they are now baby fish.

The New Order

This discovery has revolutionized piscicultural practices in the State. What had been hitherto the old order of uncertainty in collection of carp seeds in out of the way places in rivers for growing in our tanks has given place to a new order. One, can now raise the fish seed in one's own home town, nay, in the very kitchen garden pool of the home.

Further research is being conducted at the State Fish Water Biological Research Station at Bhavanisagar in Coimbatore District.

China, our next door neighbour, is forging ahead in carp fish culture. All derelict, uncared for and fallow water-spreads are rapidly changed not only into places of scenic beauty but also converted into potential fish breeding centres so as to feed her teeming population with this highly protective food.

Bright Prospects

Madras State is fortunate in having good rivers—the Cauvery with her tributaries Bhavani, Moyyar, Amaravathi and Noyyal and her distributary Coleroon and other rivers like Vaigai and Tambarabarani. Besides, there are the gigantic irrigation reservoirs like Mettur, Bhavanisagar, Amaravathi, Vaigai, Sathanur, Krishnagiri, Manimuthar, Thekady and Papanasam. The new one at Parambikulam is taking shape. Further there are many number of tanks and ponds. The induced spawning of carps now discovered will convert all pieces of water into veritable " fish-mines".

The Municipalities, Panchayats and private parties who own tanks or ponds that lie fallow can now raise a crop of succulent fish by making just a pair of adult fish breed, to order, for their food, pleasure and profit.



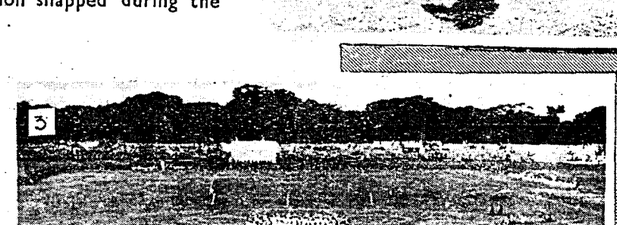
Children's day RALLY

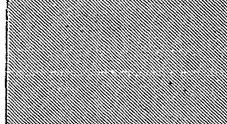


1. Finance Minister Subramaniam pinning the medal on 11-year old Nethaji of Ravuthanallur, South Arcot district winner of the National Award for courage, at the function held at the Corporation Stadium in connection with Children's Day.

2. Chief Minister Kamaraj taking the salute at the march-past.

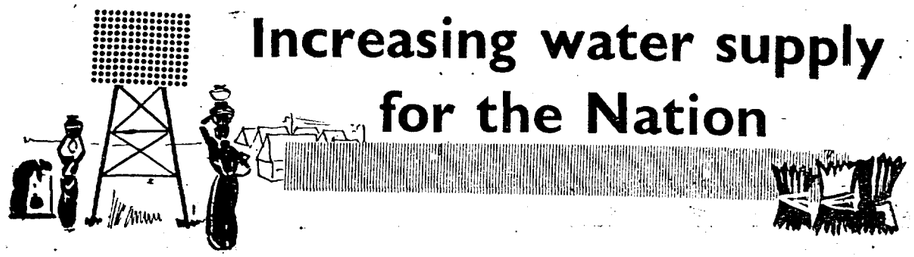
3, 4 and 5. Interesting formation snapped during the Rally.











Increasing water supply for the Nation

d water-supply is vital for the programme of building a healthier India. limited, the task is admittedly colossal. Nevertheless the subject has to be ority in all Plans for developing and reconstructing the country. In this in connection with National Cleanliness Day observed on Gandhi . A. Anandadoss, Deputy Assistant Director-General (Public Health Directorate-General of Health Services, discusses a variety of sources of l their development.

ter-supplies is rainfall. dust and gases from the e earth's surface, some aporates and some runs at runs on the surface while of the water that d by vegetation, some is percolates downwards ratum. The water that tight stratum forms the ater. Thus, any water- one of the three broad from rain, (2) from sur- 3) sub-surface sources.

ater to our villages with the country's 436 million of our governments. en taken up under the provide drinking water- has been in the form of pply and also renovating

dividual or for a commu- d adequate. The sub- rce, has the advantage s by virtue of the filtra- through the soil.

The sub-soil water, sometimes, under favourable geological conditions makes its appearance on the surface in the form of springs. These springs generally occur on slopes and more commonly in hilly areas and form a very good source for villages and towns nearly depending on the quantity they can yield all through the year. The springs should be protected from all contamination, though surface washings by constructing catch drains and leading the surface, flows away from the spring. The spring water can be collected in a small cistern from where a pipe can convey the supply to the house or the central distribution reservoir or street taps in the village. The supply can be completely made safe by covering the cistern to prevent any access to birds, animals and dirt and arranging for chlorinating the supply with a clear solution of bleaching powder continuously dropped into the tank by a simple chlorinator.

Dug Wells

When natural springs are not available, the shallow dug well is the most practical source of supply, but it requires far more attention and improvements as regards convenience and sanitation than it has generally received.

The location of the well should be such that the chances of pollution of the water in the well are eliminated. There should be no bore-hole latrine or soakage pit and the like anywhere within a radius of 8 meters from the well. This distance again depends on the porosity of soil, level of ground water, its slope and direction of flow from the well and it will have to be considerably increased so that there s sufficient filtering action to arrest all the pathogenic erms from entering the well.

In order to prevent any direct pollution of the water in he well, it should have a good steining or side wall and hould be provided with a platform and drain to collect nd carry the spill water sufficiently away from the well. he use of ropes and buckets is likely to contaminate the ell. The best method is to cover the well and use a pump o draw water. Hand pumps are not very expensive but equire manual operation and simple maintenance in repla- ing a broken screw or handle or a worn out leather washer A more convenient arrangement, if there is sufficient noney, is to install a power-driven pump set and pump he water into a tank for distribution.

The small community well can be located with advantage n the bed of a tank or a river in order to draw water of good uality and in good quantity. The supply can be pumped o a central place in the village for further distribution hrough a tank or stand-post.

Other Wells

Yet another way of developing a shallow sub-surface ource for rural areas is by means of driven wells fitted ith hand pumps. This method is specially suited for lluvial soils where it is possible to drive down a perforted ipe covered with wire mesh, called a filter point, and then ump out a supply. A platform and a lead-off drain will nake the well complete and good enough for a small ommunity.

It has been the practice in certain parts of this country o construct stepped wells where the user has to walk down he steps to collect water. Though the steps have rovided an easy method of drawing a supply, the same as been proved to be the cause for a great public health roblem. The wells have played an important role in the ransmission of guineaworm.

The first remedial measure to be undertaken in this case s only to cut down any human access to the water by losing the steps. The further improvements to be arried out are to cover the well and provide a pump.

lural Water-supply

The renovation of old wells has also been engaging the ttention of the agencies providing rural water-supplies. Apart from deepening the wells and cleaning them up to ncrease the yield, steps should be simultaneously taken to prevent pollution. The well should be provided with a ood steining, a cover, platform and spill water drain and pump. Any bore-hole latrine or soakage pit and the like within a radius of 50 feet should be avoided. Education of the people in the use of hand pumps and their proper maintenance should also go side by side with the provision of protected water-supply to rural areas.

There are conditions which do not allow the development of adequate, portable and safe water-supply from local wells for individual villages. Under such circumstances, it may be necessary to go in for a distance source. In order to reduce the financial burden on the villages, it may be possible to group neighbouring villages and supply them all from a common source, but this may need careful planning, investigation and design by qualified public health engineers.

Urban Water-supply

The provision of a water-supply to urban areas is different from that for rural areas in certain ways. Firstly, the *per capita* consumption of water is higher than in rural areas. While a supply of 5 to 10 gallons *per capita* per day may be sufficient to meet the requirements of a rural community, a supply of 15 to 25 gallons may be necessary for mid-sized towns and a supply of over 25 gallons will be necessary for a large sized town with its underground sewerage system and demands for industries, etc. The actual *per capita* supply provided should bear a relation to the actual needs and the financial capacity of the community that is to own the system. It will be unrealistic to plan a supply of say 40 gallons *per capita* per day for a village or a five gallons *per capita* per day supply for a city.

The Tube Well

For mid-sized towns, where geological conditions are favourable, deep tube wells can be developed as an economical safe and reliable source of water-supply. These tube-wells range from 70 feet to several hundreds of feet in depth and $1\frac{1}{2}$" to 18" diameter. The number of tube-well to be put down will depend on the yield of the well and the quantity of water to be supplied to the community.

Tube wells have been quite successful in river basins but at times the water drawn from great depths contains dissolved gases salts and iron. The simple way to remove the gases is to aerate the supply in a fountain or a cascade or a special aerator designed for the purpose. The dissolved forms of iron also get oxidised during aeration and converted to settlable forms. The water can then be settled in tanks and then supplied. Sometimes, certain chemicals like lime are added to accelerate the removal of iron.

The calcium and magnesium salts that get dissolved in the subsoil water during its passage through ground, contribute towards the hardness of the supply. The water has to be softened if the hardness exceeds the permissible

limit. One of the methods to soften the water is to treat it with lime and soda which precipitate the dissolved calcium and magnesium salts. The water is then settled filtered and supplied. Another method of softening is to bring the water in contact with certain artificial resins known as ion exchange. The ion exchangers have to be regenerated from time to time by a solution of brine.

Infiltration Gallery

There are quite a number of rivers which are dry for a good portion of the year but they carry appreciable quantities of sub-soil water within their beds. Under such situations, the infiltration galleries come in very handy to develop water-supply. These infiltration galleries can be considered as long horizantal wells. They are generally formed by digging up a deep trench, sufficiently below the lowest subsoil water level and laying an open jointed pipeline enclosed by clean graded metal gravel and coarse sand. The trench is finally closed with cleaned excavated sand.

The water enters through the graded material and collects through the gallery pipe in an end well from where it is pumped out for supply. These deep trench-like filter galleries are used where the river is subject to uncontrolled flows; but where the flow is strictly regulated, a much wider and shallower basin, known as a "filter basin" is employed. Here, the controlled surface, flow itself, infilters through the bed of graded material and enters a system of collection pipes and the end well for being pumped out finally for supply.

Surface Sources

Supplies drawn from surface sources, namely, streams and tanks, as already mentioned, are not always free from pollution. Where special sanitary precautions have been taken, the water drawn from impounding reservoirs with protected catchments, may be bacteriologically safe but even the disinfection has to be done to make doubly sure that the supply is safe.

The water drawn from surface sources, when found contaminated, has to be filtered. When the water is found turbid with plenty of inorganic matter, it is first allowed to settle in a settling tank or a sedimentation basin for a sufficient time to remove the bulk of the settlable matter. The water is then given the required treatment to make it fit for human consumption.

It is not always possible to settle all the solid matter in a sedimentation basin. This is especially so when the solids are present in a colloidal form. In such cases, the water has to be specially conditioned before it can be filtered and supplied. The water is treated with a dose of alum of ferric choride which forms floe that attracts all the colloidal particles and settles down, giving fairly clear water ready to be filtered. In order to carry out this pre-conditioning effectively and economically, laboratory tests have to be conducted regularly and the performance of the units watched carefully.

Slow Sand Filter Unit

The oldest and the simplest form of filter is the slows and filter. This is simple to operate but occupies a large area. The standard rate of filtration is only 50 gallons per square foot per day. The filter consists essentially of an under drainage system on top of which graded layers of stone and gravel are arranged to form the foundation for a 30"–30" thick layer of granular sand. Waters of very low turbidity alone can be treated in these slow sand filters. As the water passes through the sand, a slimy layer is formed on the surface of the filter. This layer arrests the bacteria in the water and the clear water is drawn out of the filter through the under-drain systems.

Rapid Sand Filter

The rapid sand filter, unlike the slow sand filter, can filter at a very high rate of 100–125 gallons per square foot per hour which is about 50 times as fast as the slow sand filter; but the water requires careful pre-conditioning with a suitable coagulant. The rapid sand filter requires very careful operation and frequent washing. Its run or interval between two successive washings is very short compared to the slow sand filter; but the washing of a rapid sand filter is done hydraulically and completed in a matter of few minutes. The time for washing any filter is determined by the loss of hydraulic head for the water to pass through the filter. It may vary between 1 to 3 days for a rapid sand filter and 4 to 6 weeks for a low sand filter The washing of a slow sand filter is done manually.

A close watch with the help of laboratory test is required for the proper operation of a rapid sand filter and in view of the special pre-conditioning of the water, the rapid sand filter can handle water of very high turbidities; on the other hand, the operation of the slow sand filter is much simpler.

Srimathi Lourdhammal Simon, Minister for Local Administration, is seen distributing milk donated by the Catholic Relief Services to the children of the Corporation Higher Elementary School, Chetput, at a function organized for the purpose. The Archbishop of Madras presided.



Pressure Filter

There are few other types of filters which are used under special circumstances. Of these, the pressure filter is one. This comprises a closed steel cylinder containing the filter media and the under-drainage system. Water is forced through the filter under pressure. As it enters the cylinder, it picks up a small quantity of coagulant. The action is the same as in the rapid sand filter. This filter can deal with waters of low turbidity and are preferred for temporary installations in view of their portability and savings in elaborate civil structures.

Disinfection

All public water supplies must be disinfected before delivery to the consumer, whether the supply has been filtered or not. This is to ensure that all the disease-producing bacteria have been killed.

Chlorination is the most common and convenient method of disinfecting public water supplies. Chlorine is applied to the supply either in the form of a solution of bleaching powder (for small supplies) or as liquid chlorine (for larger supplies). An adequate period of contact (minimum half an hour) should be allowed to enable the chlorine to exercise its action.

While chlorination affords satisfactory protection against the more common bacterial agents of diseases at normal doses, it is not very effective against certain microscopic organisms such as the cysts of E. Hystolytica which are responsible for dysentery. For these and other reasons, disinfection cannot be a substitute for filtration.

Distribution

The method of distributing the supply to the consumer is also a specialised job when a large population has to be served with adequate quantity of safe water. In a small village, the villager generally has the time and personnel to fetch water from the common well or tap or the distribution reservoir. In bigger towns, the supply has to be delivered at the doorsteps.

The demand of water by the community also varies from hour to hour and season to season. The demand is generally on the increase from year to year as the town grows and its population increases. The distribution system has to be designed taking into account all these factors. A service reservoir or a balancing tank is generally installed to store up water during lean hours of supply and meet the increasing demand when the occasion needs extra flow in pipes. The system is designed not only to meet the variations in demand but also to ensure a minimum terminal pressure at the ends of the system.



Srimathi Lourdhammal Simon, Minister for Local Administration, who gave a dinner at Hotel Connemara to the delegates of the Norwegian India Foundation during their recent visit to the city is seen in the picture with some of the delegates. Sri Ramaiah, Minister for Electricity is also present.

Fairs and festivals are quite frequent in India. During these, large number of people from different parts of the country congregate for a short time and hence the arrangements of water supply to such fairs and festivals have to be planned carefully so that these gatherings do not serve as focal points for the spread of water-borne diseases. It is necessary that these places should be probvided with protected (piped) water supplies but until then, as temporary measures, lorries fitted with pumps, filters and disinfection equipment should be maintained or temporary storage tanks and public standpoints should be put up.

Sea Water

The question of developing a public water-supply for drinking purposes from sea-water has also been engaging the attention of scientists and engineers but this is still at an experimental stage and the cost is prohibitive.

A water supply that is adequate in quantity and satisfactory in quality, is an essential amenity and hence, it is necessary to make plans well ahead for providing this amenity. Naturally occurring water often requires treatment to render it fit for drinking. Such treatment is aimed at rendering the water "aesthetically satisfactory and epidemiologically safe". The possible approaches in providing "protected water supplies" to rural and urban areas and the several problems encountered in water treatment have been dealt with.

Polluted water can cause severe outbreaks of epidemic diseases. Every care has to be taken to see that the wells yield safe water. When we are dealing with surface supplies, it is necessary to ensure that the treatment is aaequate and effective so that the water, as it reaches the consumer, is *always* of a safe quality. The operator has to be ever vigilant as any lapse on his part can result in the outbreak of disease. The operator has to be well trained for his job and should realise that he is the guardian of the health of the community he serves.

Fruit Canning Industry

Science in the news

Everyday that passes in this Age of Science registers some important progress or other as a result of which new and improved techniques emerge to lighten the burden of the housewife, the common artisan, the small businessman and the big industrialist. This feature takes note of such developments.

The Indian fruits and vegetables canning industry currently produces just about 50,000 tons of canned products. In 1958 the output was only 32,000 tons comprising beverages (juices including synthetic products), 35 per cent; canned fruits and vegetables, 15 per cent; pickles, 20 per cent; murabbas, jams and chutney, 12 per cent; vinegar 3 per cent; and miscellaneous, 15 per cent. The Third Plan target for canned fruits and vegetables has been set at 100,000 tons.

In the absence of adequate facilities for preservation about 20 per cent of fruit production (60-65 lakh tons) goes waste. The Central and State Governments have now provided several incentives to the industry. These include loans for planting fruit gardens and for establishment of fruit preservation facilities, supply of sugar and containers at concessional rates, and technical assistance from various sources such as the Central Food Technological Research Institute (Mysore), Jadavpur University (Calcutta), U.P. Fruit Utilisation Department and Fruit Sections of State Departments. A scheme for setting up regional research stations under the Central Food Technological Research Institute is also being implemented by the Council of Scientific and Industrial Research, New Delhi.

A tentative provision of Rs. 1·25 crores has been proposed in the Third Five-Year Plan for expansion and development of the industry. It is expected that the total production of fruit and vegetable products by 1965-66 will go up to 100,000 tons; exports are also likely to go up to 15,000 tons compared to 2,500 tons at present. The programme includes schemes for training growers in fruits and vegetables preservation and setting up of peripatetic mobile units. The capacity of cold storage for fruits and vegetables, estimated at 20 lakh maunds in 1955, is likely to go up to 42 lakh maunds in 1965-66.

The Right Fruits

There exists wide scope for canning most fruits and vegetables grown in India but the fruits which offer better possibilities are: (i) pineapple which can be cultivated extensively within a very short period; (ii) certain types of mangoes which can stand sterilisation and whose flavour does not deteriorate with high temperature or during long storage; (iii) various types of citrus, pineapple and mango products; and (iv) fruit squashes and beverages of various kinds.

So far as vegetables are concerned good scope exists for peas, green gram and tomatoes since all these vegetables are available fresh for a relatively short period when they are cheap and are too costly out of season; besides their canning presents no difficulty. Mango slices in syrup and in brine, canned pineapple, orange segments, orange juices, mango chutney and a variety of pickles are already in demand in foreign countries.

Chief Justice Ramachandra Iyer is seen delivering the presidential address at the United Nations Day celebrated recently at Rajaji Hall.



Smokeless Domestic Coke

The low temperature coal carbonisation pilot plant which went into operation recently at the Central Fuel Research Institute, Jealgora (Bihar), will provide valuable process data for designing commercial plants for the production of smokeless domestic coke by low temperature carbonisation of coal.

The pilot plant, installed at a cost of Rs. 10 lakhs, has a capacity of 20-30 tons of coal per day. Built almost entirely from indigenous resources, the plant is a modification of the one developed by the Fuel Research Station, U.K. It can treat both caking and non-caking coals and is particularly suitable for sized high-ash middlings from coal washeries.

Besides the production of domestic coke, if required, the plant can be used as a gas plant or for production of coke for low-shaft iron-making furnaces or for carbide manufacture.

Successful Trials

Though formally inaugurated last May, the plant has been in continuous operation since January 1961 and much valuable process data on heat balance and tar quality have already been gathered. As a result of successful trials in this plant, the current wasteful practice of coke production by open-stack burning of coal in *bhattas* at colliery sites will become obsolete. The coke obtained by open-stack burning is inferior and it is not possible to recover any of the valuable byproducts of carbonisation.

The potentialities of the L.T.C. process for the country's fuel economy are great. Domestic soft coke requirements of urban population in the next 10—15 years are estimated at 35 million tons; demand from West Bengal and Bihar alone is put at 2·5 million and 345,000 tons respectively. At present only 1·8 million tons of soft coke are produced in India by open-stack method. A large number of cities of Northern India can thus support L.T.C. units of 1,000—1,500 tons of coal throughout producing 750—1,000 tons of smokeless fuel per day and 5—7·5 million cubic feet of rich coal gas for use in manufacturing industries. The tar produced in these plants could be pooled and processed for production of diesel fuels and chemicals.



Tableaux presented in connection with United Nations Day celebrated at the Rajaji Hall recently.

Medicinal Plants

More than 2,000 plants, out of a total of 11,000 species found in India, are reported to possess some medicinal property or other, and are enumerated in the literature on indigenous systems of medicine. Often it is difficult to corroborate, by experimental evidence obtained from modern physiological and pharmacological tests, the medicinal value of the plants.

Systematic investigation of Indian medicinal plants started some three decades ago and some progress has been made as a result of active support and encouragement by the Indian Council of Agricultural Research, Indian Council of Medical Research and the Council of Scientific and Industrial Research.

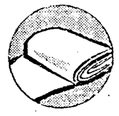
Research is being undertaken in many institutions specially set up for the purpose and also in other research establishments and universities. Outstanding work has been done on the chemistry of Indian medicinal plants and several hundreds of them have been partially screened for their medicinal properties. Available information of Indian medicinal plants has been collected and compiled and many useful publications like the *Glossary of Indian Medicinal Plants* and the *Wealth of India* have been brought out containing results of investigations carried out in recent years.

A special supplement of the Journal of Scientific and Industrial Research (August 1961) presents the results of a systematic and correlated research programme in progress for nearly a decade in the laboratories of the Ciba Scientific Department, Bombay, and the Cetus Research Laboratory, St. Xavier's College, Bombay

WHAT THE PLAN MEANS TO YOU


Rise of Rs. 55
in per capita income


enough food for all


nearly 2 more yards
of cloth


free and compulsory
primary education


improved
health services


14 million more jobs


pure drinking water
for the villages



help implement the Plan through hard work, courage and enterprise for

A Good Life for Everyone

Paradise for Tourists....

There are Excellent Reasons why the Traveller down South finds Madras State a veritable Paradise for Tourists.

Towering Temples of surpassing beauty and ageless grandeur provide him endless aesthetic thrills here.

Ootacamund, the Queen of Hill stations and Kodaikanal, the Jewel of the South, assure alluring prospects of fine climate and visual delight. And the invigorating Courtallam Falls offer incomparable pleasures for Holiday-making.

The Mudumalai Game Sanctuary in Nilgiris district and the Vedanthangal Birds Sanctuary near Madras promise other surprises. So, do not tarry....

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