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CONTENTS

EDITORIAL—SOME HIGHLIGHTS

I General Economic Scene

State :

Climate and Prices : August saw the continuation of the south west monsoon in the southern part of Tamil Nadu with its effect on the filling the hydel reservoirs and preparing the ground for agricultural operations. The programme for the provision of drinking water in the rural areas which have no such supply is being intensified. The government announced the allocation of Rs. 140 lakhs for the year to the State Water Supply and Drainage Board in addition to its fund of Rs. 7 crores for the provision of drinking water supply to 4,000 villages which have no water source within one kilometre. On the price front in the state, August recorded no change from the high levels attained during the year. Urban consumer prices showed a certain measure of stability according to CSO's April report, at 298 for the months January to March, with a slight fall in food prices (by 2 points) and a sharp rise by 8 points in cloth prices between January and February. Rural prices on the other hand registered a steady rise by 9 points in February and 6 points in March, with food prices rising sharply by 17 points—over 5 per cent. But between January and March, inter-urban price movements showed a rise in February (by 2 points) for Madras, with lower stable prices for Madurai and Tiruchi.

Power : The power situation in the State continued to be normal in August. The State Electricity Board agreed to extend on a trial basis from August 20 supply of power to urban LT units by one hour each in the morning and in the evening during the period of peak hour load restrictions to help the small scale units who need power at this time. On the other hand in the districts of Coimbatore, Madurai, Salem, South Arcot and Dharmapuri where the water table has gone down sharply, the Electricity Board has been instructed to go slow in giving new power connections for deep borewells. There are over 2 lakh applications for power connections for pumpsets against which only 35,000 connections

are being granted annually. Hence the need for priorities. It is estimated that when Kalpakkam becomes operational in 1979–80, 470 MW would be added to the installed capacity of the State and the southern region, and by 1982, 750 MW would be added to the power generation of Tamil Nadu and 800 MW to Karnataka. The government also announced in August a reduction of 2 paise (from 16 to 14 paise per unit) to small farmers, that is, those holding 5 areas of dry land or less and 2.5 acres of wet land or less.

For the country, August saw an improvement in power generation because of the good rains but restrictions on industrial and other consumers were continued in the northern region. In July power output increased by 276 million units to 7,385 million units. However against the need of 66 million units a day, only 58 million units were available, so that power cuts continued in Haryana, Punjab, Rajasthan and Uttar Pradesh. Haryana reported in August that its industries were about to be halted due to the depleted power supply from the Delhi Indraprastha thermal plant and sudden failure of the 60 MW thermal plant at Faridabad. The Energy Ministry reports, on the basis of a plant by plant review, a high rate of forced outages in the country's thermal plants, involving a high 13 per cent of the country's installed capacity. All State Boards have been advised to use the monsoon period for maintenance, repair and rehabilitation of thermal units so that later the power system could be used for full utilisation and outages prevented. It is estimated that all India power requirements are 97,000 million units and availability 90,000 million units for this year. In addition to careful transmission planning to cut back on losses, the government reports that for the VI Plan, 18,000 MW to 20,000 MW of new capacity will be needed. Of this, 6,000 MW is ongoing and 5,000 MW new projects are already sanctioned. Hence projects of the order of 9,000 to 10,000 MW will have to be taken up during next two years. On the positive side, Andhra Pradesh lifted its 30 per cent cut on HT consumers in August and generated 800 MW against 1,200 MW of installed capacity. Also the Union Cabinet approved the first 500 MW thermal plant to be located in Bombay and BHEL has readied the designs and drawings in conformity with the advanced technology necessary for the 500 MW boiler. REC reports sanctioning of 20 projects for Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh and Punjab at a total cost of Rs. 5 crores. The new projects will cover more than 650 villages and energise about 6,000 irrigation pumsets, provide power to 470 small units, 8,800 domestic and commercial connections, and 4,000 street lights. Training centres in Andhra Pradesh, Himachal Pradesh and Bihar are being set up to train linesmen and other junior staff working in REC financed schemes.

Water: On the water front, August recorded many developments. The prime one was the Cauvery and the Mettur reservoir water issue. Through the month, water was let continually in the Cauvery, Vennar and Grand Anicut systems and no turn system was used for the release of water. The problem of course was with the tail enders, that is. farmers in Sirkali, Vadapathimangalam and Talai Nayar who will not receive enough water for seed bed raising and transplanting unless 25,000 to 30,000 cusecs are let out of Mettur. 9 lakh

acres of paddy lands are served by the Cauvery and the Vennar and 2.26 lakh acres under the grand canal system. From mid August the daily Mettur release was increased from 25,000 to 28,000 cusecs to help the tail enders. Throughout the month, the Chief Minister of Tamil Nadu was in continuous touch with the Chief Minister of Karnataka to obtain release of waters from Krishnaraja Sagar which was full all the month, in order to help farmers in the tail end areas to transplant the paddy seedlings and for all farmers to complete the *Kuruvai* operations. The storage in Mettur which was a little over 50 feet against the full level of 120 feet is not enough to meet the full requirements of the 4 lakh acres of Cauvery Delta under *Kuruvai*. Hence the insistent request to Karnataka to release some water into Mettur. Fortunately some heavy rains in August in the river delta have helped the farming operations but the need for a permanent long term solution of the water problem of the Thanjavur farmers of the State must be found. The government has set up an all-party committee to work on the problem, but the long term solution will be either water from Karnataka in return for power or other resources that this State can give it, or a change in the cropping pattern of the Thanjavur district to lift it out of its mono (paddy) cultivation emphasis. The possibility of Karnataka recognising the lower riparian rights of Tamil Nadu is receding and no administrative tribunal is going to help in this difficult matter. Before the rains at the end of August, the catchment areas of the *Tambaraparani river* were dry and as a result in the first fortnight of August, the *Papanasam* Dam had meagre water storage. With regard to the Krishna waters for Madras city, the meeting of the chief ministers of Tamil Nadu, Andhra Pradesh and Karnataka with the Union Minister for Agriculture and Irrigation on August 23 at which alternative routes—an open channel *versus* a conduit system to carry the water from Srisailam to the Poondi reservoir—were discussed and further studies commissioned. On the possibility of harnessing the west flowing rivers of Kerala to irrigate Tamil Nadu lands (out of 72,520 million cubic metres of water from 41 west flowing rivers, 40,490 million cubic metres of water are flowing into the sea), the Union government is requesting speedy agreement of the Kerala government for a committee of engineers set up in December 1976 to work on this problem of diverting the waters for agricultural use in this state in Tirunelveli, Madurai, Ramanathapuram and Coimbatore districts. The chief ministers of Kerala, Karnataka and Tamil Nadu reviewed the problem on the occasion of the meeting of chief ministers at New Delhi at the end of July, Kerala's initial reaction has been negative because it feels that it will need this water for its irrigation in the future. Also the possibility of using the Pandiar-Punnampuzha project for irrigation purpose in this state is unlikely because at the time of establishing the scheme there was a definite undertaking by this state that it will use the project only for power and not for irrigation. Two more developments. The government announced the setting up of the Madras Metropolitan Water Supply and Sewerage Board to deal exclusively with water supply and sewerage in the Madras Metropolitan System and as a first step has appointed a special officer, an engineering director and a financial director to launch the system. It is reported that in addition to the Rs. 22.64 crores so far spent on the completion of the *Veeranam project* to increase the city's drinking water supply, for this year

Rs. 4 crores have been set aside for the laying of pipes.

Land Reform and Farmers' Agitation: The government is contemplating amendments of the State Land Reforms (Fixation of Ceiling on Land) Act so as to bring it in line with national guidelines and to streamline its operations. The Act which prescribes a ceiling of 15 standard acres for a family of 5 subject to an overall limit of 30 standard acres per family, has as at March 31, 1977 notified 1,13,962 acres as surplus land, taken possession of 92,291 acres, distributed 85,239 acres to 50,181 persons including 17,340 scheduled caste citizens and 13 scheduled tribe citizens. The Tamil Nadu Agriculturalists' Association organised a statewide hartal on August 12, somewhat similar to the agitation in 1972 (see Vol II No. 8, pp 1-2) for lower taxes, power and irrigation rates, higher support prices, etc.

Communications: In August the Union government released a loan of Rs. 2 crores for the Madras port development, making total Plan advances to Madras Port Trust of Rs. 90.70 crores. The current loan is to finance the mechanised ore-handling plant with a rated capacity of 4,000 tonnes per hour at the Bharathi Dock. The first stream of the plant was commissioned in July and the second stream will be commissioned in October. The State government is urging on the railway Ministry and the Planning Commission the urgency of extending the electrical lines from Villupuram to Tiruchi so that the 1965 project of electrifying the Madras-Tiruchi line may soon be realised.

Housing: As noted in Vol VII p 4, the World Bank is funding the Tamil Nadu Slum Clearance Board to the extent of Rs. 4.5 crores this year, which will cover 30 slums at an estimated cost of Rs. 140 lakhs. Further, over 47,000 families living in about 40 slums on the banks of the Buckingham Canal (Madras) are to be resettled in multi-storeyed tenements in two stages. Under Stage I, 2,100 tenements will be constructed on PWD land. In Stage II, lands will be acquired from private land owners. Under the Accelerated Slum Improvement Scheme, 504 slums will be provided with basic amenities. During the current year, 50 more rural housing co-operatives are to be organised at the *taluk* level for which Rs. 2 crores have been provided. Again, World Bank aid will be available to the State Housing Board for developing the sites and service schemes consisting of 13,467 serviced plots, covering 168 hectares at a total cost of Rs. 932.88 lakhs.

Third Pay Commission and Tourist Development: The government has set up the Third Pay Commission of the State to look into the scales of pay, retirement benefits and emoluments of all government and government-related services. There was agitation on the issue during the last 2 months (see Vol VII p 430) and now the Commission will provide a framework for dealing with the problem for the Sixth Plan. On tourist development, the state government is implementing a master plan for the Yercaud Hill Station and for the improvement of its lake area. For the current year Rs. 1.93 lakhs has been provided for preliminary work on the lake and Rs. 20 lakhs for other developmental work in the Hill Station. Similarly the area around Muttukadu-Covelong on the Madras-Mamallapuram route is to be preserved

as a national park using the background of the backwaters.

National:

Vth and VIth Plans: In relation to the question raised, (see last issue p 499) the Planning Commission has stated that the government has agreed that it must retain the functions of Annual Plan formulation and project approval. CSO is launching from September the first economic census of the structure, activity and performance of the unorganised segments of the non-agricultural sectors of the economy. In the first phase there will be census of all non-agricultural units in urban and rural areas (within 2 months) and in the second phase sample surveys on the values of inputs, outputs, emyloyment and investments in the units will be undertaken (within 2 years). There are about 3 million such units in the country. For the VI Plan, the Planning Commission is concentrating on the following studies which will lead to an approach paper to be considered by NDC by the year end. The studies are: (a) an irrigation plan with larger allocations to minor and underground irrigation; (b) area planning on which the August workshop recommended a sizeable increase in the allocation from the Rs. 8 crores for the current plan year along with renewed emphasis on block level planning, involving a quick assessment of the resources of a group of villages, their exploitation to support and match the skills of labour available in the area, the volume of employment and the size of investment that would be required; (c) a programme to meet the needs of the bottom 40 per cent of the population and for this it has set up a working group to redefine the minimum needs of the people in accordance with goals of the new government's declared objective to remove destitution in 10 years; (d) in choice of technology suitable for promoting employment-oriented growth for which the Commission has with the help of the Administrative Staff College of India (Hyderabad) and the Institute of Applied Manpower Research (New Delhi) started an appraisal of technology and industrial policy; and (e) a macro model of allocating investment with employment content and on this the Commission is working on a mathematical model for use in the VI Plan formulation. In evolving the VI Plan strategy, emphasis is to be on the physical content of various growth targets.

Prices and Anti-Inflation Measures: The wholesale price index for July registered a 0.4 per cent decline over that for June and at 187.9 points was 0.3 per cent lower for the last week. This marginal decline during the month was due to a fall of 3.6 per cent in sugar prices and a decline of 2.3 per cent in fibre prices. There were marginal declines in edible oils, paper, chemicals, metal products and electrical machinery prices. For the 12-month period, the price rise was 12.5 per cent, due mainly to 45.9 per cent increase in oil seed prices, 45 per cent rise in edible oil prices, 39.2 per cent rise in the price of pulses and 15.8 per cent in the price of cotton textiles. The August decline in wholesale prices was beginning to be reflected in retail prices. The monthly retail price index for Greater Bombay compiled by the *Economic Times* shows a low 0.2 per cent rise for July, making an annual price increase of 10.2 per cent. During July, vegetable prices declined by 4.4 per cent owing to the banning of their exports (see last issue p 508), meat, fish, eggs and sugar prices declined by 1.1 per cent

each and cereals by 0.6 per cent. Edible oil prices rose by 3.3 per cent, pulses by 1.4 per cent, clothing by 3.1 per cent and non-food (pan and tobacco) by 8.2 per cent. Hence anti-inflation measures are being planned and intensified: (a) The Chief Ministers' Conference held at the end of July decided to use the Essential Commodities Act to curb hoarding, over-pricing and unfair trade practices; (b) the Union government is providing Rs. 10,000 for share capital, Rs. 2,000 as managerial subsidy and Rs. 2,000 as outright grant for opening 500 co-operative fair price shops for supply of essential commodities; (c) the states have been urged to develop a monitoring system under which they would get periodic reports from the districts on price movements of essential goods; (d) The RBI has asked all banks to scrutinise existing and new advances to traders against indigenous and imported oils and oil seeds to prevent stocking; (e) the Union government announced that restrictions on inter-state movement of groundnut oil seeds and oil will be removed from November, the start of the oil season; (f) the Janata Working Committee resolution on the country's economic problems lists further measures which will be taken up by government such as controlling money supply, regulating the credit system for greater production of consumption goods, improving the public distribution system, reviewing the pricing policies of agricultural commodities and a shift in their growth to meet consumer needs for pulses and edible oil seeds and the setting up of autonomous Price and Quality Vigilance Boards to keep a watch over price hikes and to ensure quality maintenance by industrial units; (g) a gentleman's agreement among representatives of cotton growers, traders and spinning units to maintain price discipline in both cotton and yarn in the cotton season beginning September which was reached in mid August by the group with the help of the government; (h) to meet the needs of the *vanaspati* industry and of the fair price shops, STC has contracted for the import of 6 lakh tonnes of edible oils at a cost of Rs. 300 crores and has decided to build a buffer stock of 1.8 lakh tonnes to ensure uninterrupted supplies; (i) of the same order in regard to contracting money supply, is the government's decision to create further tranches of 2 central loans for Rs. 100 crores and the decision of the 20 state governments to raise Rs. 257 crores as loans for the current year. Tamil Nadu's share amounts to Rs. 25.50 crores. On the other hand, in addition to cash payment of the second CDS repayment referred to in the last issue (p. 500) the Union government also announced in August, and followed it up with an ordinance enjoining the payment of a minimum bonus of 8.33 per cent by all production units. Also pension rates have been increased by 5 per cent to compensate cost of living increases. These measures together will inject some Rs. 500 crores into the economy. To counter this, the government announced on August 20 the scheme of 5-year National Development Bonds with 13 per cent interest to mobilise these additional moneys pumped into the economy. The response of the bond issue will be reported in subsequent issues of the *Bulletin*.

Industry : The Planning Commission estimates that industrial growth for the current year will be half that of last year (see Vol VII p 431) at five or six per cent, based on the four-per-cent rate of growth in the 4 months April-July 1977. This means that the Economic Survey and Union Budget assumptions of "a substan-

tial step up" in industrial production are not likely to be realised. Textile production this year is forecast to be 4,000 million metres (less than the 1975 level), cement 18 million tonnes (same as last year) and estimates are for a sharp fall in non-ferrous metal production. Hence the industry ministry has drawn up a comprehensive work programme to push large and small industry and for this it is setting up a high power group to take care of sickness in industry, a cell to monitor industrial relations, a plan to increase productivity in public sector units, remove the financial hurdles faced by small, village and cottage industries and create a market network for them. The minister is also planning a more clear-cut and precise industrial policy statement for the next session of Parliament. Four zonal conferences of state industries ministers are to be held in September out of which the new industrial policy will be forged. A working group of economists has advised the government to institute a constant dialogue between government and industry on problems of development and a strong monitoring mechanism to keep watch on prices and performance of critical industries. Industries should be allowed to import power plants ranging from 5 to 250 MW and a clear delineation of area and function for large industrial houses as well as multinational corporations should be set forth. One reason for the declining industrial performance is the finding of the ICICI study of 671 joint stock companies assisted by it, that interest costs for these industrial units have increased by 31 per cent in 1975–76. These increased costs absorbed 29 per cent of gross profits (against 2.2 per cent the previous year). Gross capital formation increased by 9.8 per cent, gross fixed assets by 11.3 per cent, and inventories by 6.9 per cent. Though inventories as a percentage of sales declined from 34.1 per cent in 1974–75 to 32 per cent in 1975–76, bank borrowing for working capital used in the main for increased stocks of finished goods, increased by 20.9 per cent.

Public Sector Performance: The production target for the public sector units under the Department of Heavy Industry for the current year has been revised and set at Rs. 1,012.97 crores on the basis of the order book position of the units. The profits for the year will be Rs. 66 crores compared to last year's Rs. 52 crores. Their 1976–77 total production was Rs. 828.78 crores against the target of Rs. 852 crores. This year's revised target is a rise from the original Rs. 944 crores but a cut back from the later raised figure of Rs. 1,020.83 crores. Studies are under way to revise the debt-equity ratio of these units which now stands at 1:1. Some units like Neyveli have been allowed to switch to a ratio of 1:2.25, which raised its equity to Rs. 39.25 crores and placed it on a sounder financial footing. The HSL has been a victim of the 1:1 ratio and Coal India and IDPL need to be given relief from this formula to enter on a productive profit making course.

National Production Front:

Steel: Rourkela produced 80,529 tonnes of saleable steel in July, involving a record April-July production of 3.68 lakh tonnes and a growth rate of 6.2 per cent. Similarly ingot steel, slab rolling, plates, hot rolled coils, electrical sheets—all recorded increases. Despatches increased from 5.35 lakh tonnes to 5.61 lakh tonnes. Durgapur steel plant on the

other hand continued to make losses which would increase by Rs. 2.5 crores this year because among other matters, the Railways pay unduly low prices for the wheels and axles manufactured by the plant. Apart from this correction, DSP proposes to change its product mix in certain items and to double the capacity of its medium structural mill from 2 lakh tonnes to 4 lakh tonnes and convert its one-version scrap mill to a combination mill with a view to liquidate its cumulative losses of Rs. 217 crores. With regard to future plans, the expansion of Bokaro from 1.7 million tonnes to 4.4 million tonnes in the second stage will use more Indian expertise—MECON, EPI and BHEL—and to that extent lessen technical aid from the USSR. The cold rolling complex in the second stage which was to be set up by the Soviet Union at a cost of 3,000 roubles per tonne will be set up by Indian engineers with some foreign collaboration from the U.S. and West Germany. The steel ministry has been considering the setting up of 3 export-oriented gigantic steel plants with foreign capital assistance in the public sector. How such heavy reliance on foreign (private) capital can be reconciled with the commitments that these plants will be in the public sector is not clear. The government has also under study the position of SAIL *versus* that of Hindustan Steel Limited. It is beginning to have doubts about breaking up SAIL and Hindustan Steel. The break-up of HSL will increase the tax liability of Bhilai and Rourkela, which because of the heavy losses of Durgapur have not had to pay any taxes. Against this the decentralisation of responsibility is rather a vague objective and can be attained by other procedures. Apart from separating the post of Chairman of SAIL from the Secretaryship to Government, Ministry of Steel, it is now proposed that HSL should be amalgamated with SAIL. The relationship of MECON, NMDC, etc. with SAIL should be further thought through. The Minister also informed the Lok Sabha that the Vijayanagar location of the steel plant in Karnataka has not been abandoned as the study of an alternative coast-based location has just started. The new steel distribution policy summarised in Vol VII p 439 needs further review: its concession of Rs. 24 per tonne is too small to be attractive and it favours the large units which alone have the private railway sidings that are needed. This last is serious and it is important that the small producer be given the benefit of the concession and not the current stockyard price concession.

Crude: The government has made arrangements for the import of 14.1 million tonnes of crude for 1977 to meet the country's shortage of crude oil of 14 million tonnes. This means that despite the increased demand from 24.1 million tonnes in 1976-77 to 26 million tonnes in 1977-78, the imports are the same as that for last year because of the increased availability of offshore and onshore oil from 8.8 million tonnes last year to an expected 11.3 million tonnes for 1977-78, Bombay High alone contributing 2 million out of the additional 2.5 million tonnes. But the total cost of imported crude and petroleum products which was Rs 1,450 crores in 1976-77 will increase to Rs. 1,530 crores for 1977-78, crude imports alone costing Rs. 1,270 crores, This means that oil exploration becomes urgent as well as economy in oil use. ONGC will take up

the drilling work in West Bengal basin abandoned by the U.S. firm Natomax (see Vol. VII p 440) whose data it is now processing. ONGC will also do the exploration at Tapti and Kutch areas (Gujarat) soon after the monsoon, following the work abandoned by the US firm Reading and Bates. Also crude pipelines with a capacity of 20 million tonnes and gas pipelines of 7.2 million tonnes are being laid with Uran (Bombay) as the terminal. ONGC announced in August that it struck oil in Nokha district in Nagaland. One multinational firm and several large Indian business houses are bidding for the Bombay High gas. The gas supply is to be extended to Union Carbide, Polychem, Calico and NOCIL among others who are now falling over each other in their bid to use gas, in contrast to their earlier coolness to this possibility. Now the government has to fix the price of gas and must take into account its opportunity cost in doing so. The US company Brown and Root has been selected for laying the 210 km pipeline from Bombay High to the Uran terminal (Bombay) which will also be connected with the Bassein oil and gas fields near Bombay. A Japanese loan for Rs. 66 crores is to be used for buying machinery and equipment in Japan for the third phase of the project when the Japanese firm Nippon Steel will build the platform. Asamera of Calghery (Canada) after drilling for 3,700 metres in the Gulf of Mannar, Cauvery offshore basin, is giving up this area as the well has turned out to be dry and will be discussing with ONGC where it should next do the drilling. ONGC is planning to review its exploration in the Cauvery basin and has sent its seismic ship, Anweshak, to the Karaikal offshore area where after the survey, drilling will be started. On the economy of use side, the government announced in early August accepting the recommendation of the Fuel Policy Committee to restrict the use of fuel oil at the time of issuing fresh industrial licenses and for this purpose has asked the nationalised coal industry to set up coal dumps in all industrial centres. All industries except those for whom fuel oil is essential technically are being asked to switch over to coal. This also means that the location of future industries in relation to coal availability will be taken into account. Towards the end of August, the government took up with the Burmah Oil Company the compensation to be paid to it for surrender of the 50 per cent shares of OIL it now holds. All the issues—the debts, the accounts, the statutory dividend payable, the reimbursement to AOC for crude supplies—have been settled and now the final agreement for the take-over from 1 January 1977 is being established along with the acquisition of the assets of the BOC subsidiary.

Coal and Minerals: Coal production in May at 7.7 million tonnes declined marginally compared to the April output of 7.8 million tonnes. One of the problems to which attention should be paid is that while Coal India reports mounting coal stocks at the pitheads, small traders are finding it difficult to get coal. The need to ensure adequate supplies of the grade of coal needed by different groups of consumers is another issue that needs attention. In this connection, Coal India reports testing new types of coal in the integrated steel plants both to meet the requirements of the plants and to conserve coking coal. With regard to mineral production as a whole, May witnessed a decline in production at Rs. 95.9 crores compared to the April production of Rs. 99.4 crores. Mineral fuels accounted for Rs. 73.9

crores, metallic minerals Rs. 14.6 crores, with limestone maintaining a steady monthly output of 2.4 million tonnes. To operate the nickel smelter plant at Jamshedpur, it has now been decided to import the needed technology, as the efforts at using indigenous technology through the Chemical Metallurgical Design Company have failed and the foreign exchange on the import of nickel is steadily rising from Rs. 14 crores for 3,998 tonnes in 1974–75 to Rs. 16 crores for 4,316 tonnes and in the 9 months from April to December 1976 to Rs. 16.50 crores for 3, 887 tonnes. With international prices continuing to rise, the need to develop the smelter becomes urgent.

Textiles, Cement and Machine Tools: As at August, 31 cotton textile mills, due to shortage of finance, disturbed labour relations and bad management, were lying closed. The rise in cotton and yarn prices has affected all units, with the weak and marginal ones going under. Among measures taken to revive the industry are governmental action to improve the availability of cotton. So far 8 lakh bales have been imported and 3.5 lakh bales contracted. The commerce ministry's conservative estimate for the current crop season is 65 lakh bales, compared to last year's 59 lakh bales (see Vol. VII p 85). If rains in September are normal, the output could even reach 70 lakh bales which together with the carryover of 13.5 lakh bales would be more than adequate to meet the mills' and other demand for 68 lakh bales. With the voluntary agreement on cotton and yarn prices referred to earlier, the import of staple and polyester fibre under Open General License (see Vol VII p 378) and the obligation on the mills to use at least 10 per cent manmade fibres, the liberalisation in meeting credit needs of weak units and their exemption from producing controlled cloth and the IDBI scheme for modernisation of cotton mills now operating, there should be some improvement in the position of textile mills in the coming months. With regard to cement, the gap between availability and demand is widening. In 1976–77 the demand was 24 million tonnes againt the installed capacity of 21 million tonnes and actual production was 18.7 million tonnes. For this year the installed capacity is the same, production is likely to be 17 million tonnes and demand 25.9 million tonnes. For next year the demand will further increase to 28 million tonnes. Against this background two actions are necessary. First the government and public sector demand for cement which has jumped from 35 to 45 per cent must be put back to 35 per cent. Second the incentive to open new plants and increase investment in cement production must be speedily announced—such as increased return on equity investment in the industry. On the machine tools front, the Development Council reports a total production of Rs. 117 crores in 1976-77 (against Rs. 114 crores in the previous year) with reduced reliance on imported technology (50 per cent against 80 per cent in 1973) and exports of Rs. 10 crores. The industry is now able to meet 75 per cent of domestic demand (compared to 36 per cent in 1976) and will be able to meet the doubling of the demand—particularly for electrical tools and oil and hydraulic equipment—by the end of the Sixth Plan.

Floods, Arable Land Space and Fertilisers: The annual floods have had a devastating effect this year in August. By mid August a population of 52 lakh persons and an area of 13.4 lakh hectares

are reported to have been affected by the floods, with 103 deaths and 5.6 lakh hectares of crops damaged. The main damage has been in Assam, Gujarat, Haryana, Punjab, Rajasthan, West Bengal and Delhi. In Haryana alone, the flood losses are estimated at Rs. 60 crores. Once more the country has been caught unprepared and the various plans and programmes for control of floods discussed since the Sixth Finance Commission made its report (see Vol III pp 156 and 157) have not been acted upon. This is one area where the country's science and technology can be mobilised for effective action. One of the fall-out effects of the long standing proposal to link the Ganga and the Cauvery would be control of and relief from floods. The Union government has received the Dastur Plan which estimates that at a cost of Rs. 14,000 crores, a 3,680 km Himalayan Canal and a 8,800 km Southern and Central Canal can be constructed to divert the waters of the Himalayan streams. It also provides for the construction of 300 reservoirs, 600 storage tanks which would store and make available for irrigation 1 million acre-feet of water all over Central and South India. The Plan is under study by the Central Water Commission. On the other hand the World Watch Institute reports that because of deforestation, overgrazing and overcropping, areas in the north west of the country are turning into desert. For instance, it reports that while the grazing area declined from 13 million hectares in 1951 to 11 million hectares in 1961, the population of goats, sheep and cattle has increased from 9.4 million to 14.4 million. So too accelerated deforestation has resulted in non-renewal of the soil as have unsound farming practices. Improved farming techniques and greater concern for the small farmers constitute one way of preventing increased desertification of Rajasthan. With regard to fertilisers, the requirements for 1977 *kharif* are estimated at 1.97 million tonnes (1.3 million tonnes nitrogen, 4.2 lakh tonnes phosphates and 2.5 lakh tonnes potassium). The total requirement for the year is estimated at 4.27 million tonnes against last year's consumption of 3.41 million tonnes. While phosphates are produced internally, potassium has to be imported and stocked at 600 places in the country. Against the demand of 28.26 lakh tonnes of nitrogen, this year's production will be 22 lakh tonnes compared to last year's 18.57 lakh tonnes.

Agricultural Production: Subject to a more detailed assessment of the crop damage in the 4 states through floods, in August *kharif* prospects seemed good and if rains continued in September/October, the *kharif* crop could be 70–74 million tonnes. Rainfall was good and evenly spread through the country, so that transplantation was completed everywhere, the supply of seeds, fertilisers and credit was timely and liberal. The result is that the government is expecting a very good paddy crop from the 37 million hectares in the northen states. A production target of 16.1 million has been set for edible oil seeds this year and to achieve it an increase in plant protection measures on groundnut, rape and mustard crops through large scale aerial spraying supported by a ground campaign, the popularising of phosphatic fertiliser application for increased groundnut production for which the farmers should be provided with increased short-term loans, and a strengthened and subsidised seed production programme are under way. Widespread rains in Maharashtra and Gujarat in August

provide the basis for expecting a record groundnut crop from the 7.5 million hectares over which groundnut has been sown. Another crop which needs to be quickly increased is pulses. A campaign to increase production in the country's *rabi* season in rainfed, irrigated and unirrigated areas, is now ready and will be launched by ICAR with the help of agricultural universities and extension agents. West Bengal reports that with the higher pay off from HYV paddy, jute farming is being steadily shifted to marginal lands. The area under jute has fluctuated sharply (8.15 lakh hectares in 1971–72, 5.85 lakh hectares in 1975–76), due to weather, price, diversion to other crops, etc. In the current season, the government has sanctioned a special grant for free distribution of fertilisers to supplement the efforts of farmers to increase the production of jute and *maesta*, the area under improved seeds standing at 3.82 lakh hectares at present. At the end of August, the country's foodgrains stock stood at a little less than 20 million tonnes. Food Corporation of India is releasing imported wheat damaged at its open storage of Sholavarm airstrip and the part which is unfit for human consumption has been sold to Tamil Nadu Dairy Development Corporation as cattle feed. This is part of a general problem of foodgrain losses from the open or CAP storage which the government is planning to replace by building 3.5 million tonnes storage space and encouraging private enterprise to build storage for 2.5 million tonnes of foodgrains. The damage this year is serious because of the incessant rains and the high moisture level (14 per cent) in day time. Before the monsoon, damaged grains were 40,218 tonnes—0.2 per cent of covered grains and 0.5 per cent of that in CAP storage. After the rains the problem of storage or recycling stored grains has increased. FCI's total storage availability is 19.56 million tonnes—8.02 million tonnes owned and 11.54 million tonnes hired. The lifting of inter-state movement restrictions on wheat and freedom to private trade has not lightened the storage problem because of the small margin between ration shop prices and market prices of foodgrains. One bright spot in this situation is the agreement of the Soviet Union to take 1.5 million tonnes of FCI's stored wheat in repayment of their wheat loan. On sugarcane production, the government is aiming to get the mills to pay sugarcane farmers their dues promptly and for this purpose has advised the state governments to follow the price fixed by the Union government and not further raise it, as the Union price is an attempt to reconcile 3 irreconcilable factors: an incentive price to the growers reasonable consumer price of sugar and normal profit to the mill. On some long term features, the World Bank report commends the country's agricultural extension services which it regards as a first priority for increased production gains as seen in the Chambal project areas of Madhya Pradesh and Rajasthan, where farmers have increased their paddy production from 2.1 tonnes to 3 tonnes per hectare in 2 years, while combined irrigated and unirrigated wheat yields have increased from 1.3 tonnes to 2 tonnes per hectare. So too in the case of West Bengal's paddy and wheat production, the World Bank recommends a systematic programme of the village extension workers and agricultural extension officers whose message should be focussed on selected contact farms. The trend rate of growth in agriculture is low in relation to the needs of the country, and has been decelerating in the last 25 years according to an ICAR

and Planning Commission study. Argicultural output grew at a compound rate of 1.95 per cent between 1962-65 and 1970-73 against a Fourth Plan target of 4.7 per cent for farm produce. Growth rate of foodgrains was higher at 2.74 per cent against the target of 4 per cent. Despite increase in domestic production, 1.71 million tonnes of foodgrains were imported annually, while per capita availability declined from 458.6 grammes in 1962–65 to 450.6 grammes in 1970–73. Total agricultural output is valued at Rs. 1,236.25 crores during the seventies compared to Rs. 1,058.90 crores in the sixties, with Uttar Pradesh, Punjab, Haryana, Tamil Nadu and West Bengal being the major contributors.

Exports : The trade balance for the first three months, April to June, of the year continues to be favourable at Rs. 118.45 crores, exports being Rs. 1,224.68 crores and imports Rs. 1,006.23 crores. June exports were Rs. 368.5 crores, Rs. 3 crores more than that of June 1976. Imports however were Rs. 280.7 crores compared to Rs. 366.75 crores in June 1976. The monthly performance of exports shows a certain stability but without reaching the target. It is imports which are declining and producing the surplus. What the year's trend will be is difficult to foretell, beyond the general consideration advanced in the last issue (p 508). India's exports may well go beyond last year's Rs. 4,981 crores. Imports during 1976–77 fell to Rs. 4,908 crores, a decline of 7 per cent, but for this year the pick up of the economy will need a much faster expansion of imports. In all probability and certainly for the health of the economy, there should be an unfavourable trade balance at the end of this year and with the Rs. 4,000 crores of foreign exchange reserves as at August, such an unfavourable balance could be a favourable factor for economic growth. The good export performers reported in August include synthetic textiles which during the six months of 1977 earned Rs. 22 crores which was an increase of 268 per cent over the Rs. 8.2 crores during the first six months of 1976. Rayon items predomninated, followed by polyester fabrics with Iran, UK, Saudi Arabia, US and Poland being the main importers. Another good performer is engineering goods which are making a break–through in Latin America and on the basis of which the year's target has been raised from Rs. 625 crores to Rs. 650 crores. There is one problem here, and that is West Germany has entered India's main market, namely West Asia. The orders for the 3 months April–June amounted only to Rs. 69 crores and exports here will have to face stiff competition from the West generally. India's exports of wool and woollen goods are increasing, reaching Rs. 108.9 crores in 1976–77 compared to Rs. 73 crores in the previous year, with woollen carpets and druggets leading followed by hosiery. Silk exports increased in quantum to 7.36 million sq. metres and in value to Rs. 22.51 crores in 1976-77 from Rs. 16.47 crores in the previous year with mulberry silks and tussores leading, to the UK, Germany and the US in the main. In the first six months of this year, it further increased to Rs. 22.06 crores compared to Rs. 8.23 crores during the corresponding period in 1976. Cane and bamboo exports rose during the first 11 months of 1976–77 to Rs. 27 lakhs. Iron and steel exports earned Rs. 296 crores in 1976–77 involving export of 2.35 million tonnes of products, with bars, rods and rerollers leading, followed

by pig iron. Handicraft exports increased to Rs. 162.18 crores in 1976–77 from Rs. 109.58 crores in the previous year, with woollen carpets, *namdas* and hand–printed textiles leading. These export trends have two implications. First with the diversified export markets the multicurrency peg of the Rupee is justified and calls for the banks rendering assistance to the small producer in non–urban centres with his export finance needs. Moreover the external surplus created by exports and foreign exchange remittances can be turned into domestic investible resources by a more vigorous import policy and programme. A planned trade deficit is thus a condition for developing overall payments viability at the present juncture. Second, with this foreign exchange surplus, India was able to repay in August IMF its entire outstandings amounting to 281.2 million SDRs (Rs. 228 crores)—against the loans obtained under the gold tranche and first credit tranche availed in February and May 1974 (see Vol. IV pp 281 and 430). On the other side, India's export of cement to Iran is being cut back in view of the internal supplies and demand situation, and after exporting 3 lakh tonnes, India is buying 10 lakh tonnes from abroad to meet its Iranian commitment to pay for crude imports. More generally the government announced that it will be promoting exports of goods in which the country has a along term competitive advantage and not continue with the policy of making it obligatory for weavers to export rayon fabrics at Rs. 20.22 a kg while allowing them to import rayon yarn at Rs. 27 a kg. Similarly the quota policies of Texprocil which is resented by 60 leading textile exporters who have rebelled against the strait jacket system, stands in need of review. The controversy with ECM over the multi–fibre agreement (see last issue pp 508–509) similarly needs to be resolved flexibly in the interest of the textile industry in the countries concerned.

Aid: The World Bank in its loans to the country is shifting from the project approach to the package approach, under which instead to examining each project separately, a line of credit is opened for a programme. Thus in August the Bank opened a line of credit for $ 200 million for minor irrigation projects, without specifying the projects. Similarly a credit of $ 150 million is under negotiation for the Korba Superthermal Power Station to be set up in Madhya Pradesh. Netherlands extended a grant in August of Rs. 6.85 crores for the city development and improvement programme of the Calcutta Metropolitan Development Authority and for the removal of city kept cattle from Calcutta and Howrah. As noted earlier, Japan signed an agreement in August for a commodity loan of Rs. 66 crores for the Bombay High third phase.

International :

Bangla Desh: In July end/August, a second nine days round of talks (second since the April agreement between the 2 governments) was held between India and Bangla Desh on the sharing of the Ganga waters at Farakka as a result of which the move towards an agreement has advanced and the difference between the two countries were narrowed. The agreement is moving towards both short term and long term resolution of the water problem, including the Brahmaputra-Ganga link and the most effective

method of ensuring the link.

World Monetary Reform: On August 3, IMF auctioned 524,800 ounces of gold at a price of $ 146.26 per ounce, resulting in making the total Fund $ 722 million. On the same day the Australian dollar was devalued by 1.51 per cent in terms of a trade weighted basket of currencies used by Australian authorities to manage the currency, which was in addition to the 17.7 per cent devaluation of last November. On August 25, Denmark devalued its currency by 5 per cent and Sweden withdrew from the European *SNAKE*. The fall in the value of the US Dollar in August was causing concern to Western countries and currencies following a record increase in the US trade deficit—the fifth in six months. To date the US trade deficit stood at $ 12.59 billion and for the year the forecast is $ 25 billion. There are considerable differences between the US and EEC countries on the exchange rate policy—which add further uncertainties to the confused world monetary system.

World Economy and World Debt: The real output in 1976 in industrial countries increased by 5.5 per cent, world trade by 11 per cent, while unemployment rates continued to be high. Pointing to these features, the 28th annual report of IMF also refers to the growing protection in both industrial and developing countries, particularly subjecting a greater proportion of world trade to more restrictive policies by a large number of countries using tariff barriers to selective imports. These were supported also by export restraint agreements. In particular, EEC countries maintained or introduced new quotas or licensing procedures besides restraint agreement with several developing nations. Japan subjected some imports to pre-notification requirements, while non-EEC countries used quantitative import controls. On the other hand, the US had not restricted imports even when its domestic industry was affected. On the inflation front, during the 3 months, April to June, the cost of living index was 8.2 per cent higher than in April-June 1976. This acceleration in inflation in the industrial countries in April-June 1977 was due to the US rate of 6.8 per cent and Canada 7.7 per cent. On the other hand, Japan, Belgium, Netherlands and West Germany slowed down their inflation rate, though in the first 3 countries it still ran at 7-9 per cent. Switzerland kept its rate down to 1.3 per cent, while in Argentina and Chile the inflation rate was running at 150 per cent in April and 109 per cent in May respectively. UNCTAD reports that non-oil developing countries will have a total debt of $ 253 billion at the end of 1978 compared to $ 180 billion at the end of 1976. The current account deficits of these countries have risen by 28 per cent to $ 36.3 billion this year and will rise to $ 39 billion next year. The surplus of the main oil producing countries will drop to $ 41 billion by the end of this year and $ 37.5 billion by the end of next year. OECD countries will have a deficit of $ 5.5 billion (up from last year's $ 3.7 billion) but will end with a surplus of $ 12.5 billion next year. East European countries will have a deficit of $ 6 billion this year and $ 5 billion at the end of next year.

World Exports: World exports which declined in 1975 increased in 1976 by 10.6 per cent in quantity and by 14 per cent in value. India's share of world exports in 1976 remained at 0.6 per cent. In general the developing countries found

themselves better placed than industrial countries during 1976. The unit value of developing countries' exports rose by 6 per cent while for industrial countries it was almost nil and for both groups together the unit value of imports rose by 1 per cent. So the terms of trade of developing countries improved by 4 per cent and that of the industrial countries declined by 1.1 per cent. Export prices in general ruled high except for cereals, sugar and groundnut oil in 1976. Primary commodities as a group advanced by 3 per cent, minerals by 3.2 per cent and non-ferrous base metals by 9.2 per cent. Cereal prices declined by 12.1 per cent due to increased cereal production and competition among major grain exporters.

UNCTAD Commodity Plan: UNCTAD's integrated commodity plan (see Vol VI p 87) despite 17 preparatory meetings (since Nairobi) on 8 commodities (sugar, copper, jute, wood, fibre, rubber, cotton, vegetable oils and oil seeds) has made little progress towards specific commodity agreements. The key element is the Common Fund which is now on the point of agreement after the Paris conference decision (see Vol VII p 444). The Negotiating Conference on the Common Fund on November 7 will, it is hoped, result in agreement on the aims, mode of financing, and management of the Common Fund. The UNCTAD Board has before it a proposal from its Secretary General for the establishment of a separate international institution to guarantee medium and long term export credit, while the finance for such a facility will be a fraction of export credit guarantee. The Board's meeting in August should mark a move forward in the programme.

OPEC Aid: The meeting of the Executive Committee and Finance Ministers of OPEC meeting in early August sanctioned $ 146.7 million in long term interest-free loans to developing countries hit by rising oil prices. This is part of the $ 1.6 billion fund established in February by the ministers (see Vol VII p 296). It was agreed that the second $ 800 million will be contributed on the same basis as the first $ 800 million. Part of the second instalment will be used to finance the UNCTAD Common Fund referred to earlier for supporting raw material prices.

World Food: World cereal production increased during the last two years, leading to a build up of stocks of 163 million tonnes at the end of 1976-77 crop year, which is an increase of 54 million tonnes over a two-year period. This provides a greater margin of security against crop failure. 1976-77 also is a bumper foodgrain production year at 1.48 billion tonnes, an increase of 116 million tonnes over that of 1975-76. The largest increase has been in wheat production estimated by International Wheat Council at 400 million tonnes for 1977-78. Production of rice has declined marginally and coarse grains increased by 8 per cent to a record of 715 million tonnes. The good cereal output is due to the recovery in Soviet grain output in 1976-77 at 224 million tonnes. Now the setting up of the international grain reserve is no problem, but there must be agreement on the means of financing its cost by the World Food Council, which

also calls attention to the unsatisfactory rate of growth of foodgrain production in developing countries which has been 2.5 per cent per annum during 1970–76 against the annual target of 4 per cent in the International Development Strategy. The Council estimates that $ 8 billion will be needed in external resources to help these countries achieve the 4 per cent target. Meanwhile the $ 1 billion IFAD Fund is expected to become operational by the end of 1977 to help poor countries increase their food production.

World Seismic System: Under the UN conference of the Committee on Disarmament, an international system for monitoring data on seismic events is taking shape. An *ad hoc* group of scientific experts has drawn up for the committee the elements of the system composed of data centres for detection and location of seismic events and reduction of identification parameters. Meanwhile the Japanese Meteorological Agency is installing "stethoscopes" on the bottom of the Pacific Ocean near Central Japan to monitor the readings in this earthquake prone area.

ADB 1970-1974 Report: The Asian Development Bank report for the first half of the seventies states that in its 13 member countries the green revolution profited the rich farmers and land owners, the inadequate extension and input delivery systems and non-transfer of laboratory results to the small farmers hindered agricultural growth, and the average per capita intake was 2,000 calories which was well below the minimum nutrition needed. The region is heading towards a shortage in wheat, rice and maize ranging from 24to30 million tonnes by 1985, which can be halved by increased food production. The countries imported an average 11 million tonnes a year during 1970–74 but this did not increase the per capita availability of food in the countries and certainly did not reach the poor. It refers rather caustically to the fact that some of the world's poorest and most malnourished countries are talking about the need to export cereals to maintain farm prices—an obvious reference to India. The report recommends accelerated agricultural growth, the sharing of the benefits of growth by poor and small farmers and the rural workforce being given wage employment for supplementary farm or non-farm activity, reinforcing growth in industry and agriculture, alongside of international trade arrangements supporting the growth in agriculture. To this must be added agrarian reform and change in current assets distribution—implementing a real programme of rural development.

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II Agricultural Development

Paddy and Other Production and Levy :

Paddy target production for 1977–78 has been set at 62 lakh tonnes against the 1976–77 achievement of 53 lakh tonnes. The production target for millets is 19 lakh tonnes (18 lakh tonnes last year), pulses 3 lakh tonnes (2.9 lakh tonnes last year), oil seeds 14.9 lakh tonnes (against 13.43 lakh tonnes last year), sugar cane 14 lakh tonnes (13.5 lakh tonnes last year) and cotton 4 lakh bales (3.6 lakh bales last year).22 lakh hectares are to be brought under HYV paddy, with special efforts to extend it in Chingleput, Ramanathapuram, Pudukottai and Kanyakumari districts. The area under pulses is to be increased from 9.7 lakh hectares to 10.4 lakh hectares by bringing additional areas in rice fallows and adopting mixed cropping. The area under groundnut is to be increased by 15,000 hectares to attain a total of 11 lakh hectares, and for sunflower an additional area of 25,000 hectares will be covered to achieve a total of 1.25 lakh hectares. The area under rainfed cotton will be increased by 2 lakh hectares and irrigated cotton by 7,000 hectares. The sugarcane area will be increased by 9,000 hectares in the factory zones of Thanjavur, Perambalur and Palacode. The vegetable production programme is to be intensified to produce 6.88 lakh tonnes from a total 50,000 hectare area. The government announced in August that it was reviewing the paddy levy system which had been a system of levy on traders as against the alternative system of levy on the farmers and would announce in September the system to be followed for this season. It also reports that in view of the 8 lakh tonnes short–fall in paddy production in 1976–77, it has requested and obtained release of 50,000 tonnes per month for four months from May from the Central Pool. The State's public distribution system needs 40,000 tonnes a month, though as a result of the removal of restrictions on inter–district movements of rice and the narrowing of the price differential between the public distribution channel and open market, the pressure on the farmer has declined. The government plans to keep its eye on pockets of scarcity and step in with supplies in such areas.

Research results :

A study by the Tamil Nadu Agricultural University indicates that well irrigation has reached a saturation point in Coimbatore region and recommends a ban on sinking of new wells in the *taluk*. The minimum depth of wells in the area is 15 metres and maximum 65 metres, with an average of 30 metres. The deeper the wells, the higher will be the cost of irrigation, with mounting electricity charges. The share of irrigation in total cost per hectare works out in the case of a less than average well to 13.5 per cent for *cholam*, and if the well is deeper than average to 28.26 per cent, 19.36 per cent for *ragi* which increases to 35.81 per cent, 20.69 per cent for *maize* which becomes 33.99 per cent, 25.24 per cent for *chillies* which becomes 41.36 per cent, 13.98 per cent for tomatoes which

becomes 33.92 per cent, 28.13 per cent for onions which increases to 34.67, and 16.29 per cent for cotton which becomes 25.73 per cent. This steep rising of the cost of well irrigation makes it unviable. The university has also published its findings as to the soil and timing for the sowing and transplanting of the first and second tomato crops and the possibility of increasing Vitamins A and C by 30 and 70 per cent respectively by application of potassium at 70 kg per hectare for the variety CO-2. Another important research finding is the application of the cross protection principle in the case of virus infected lime plants by the Banglore Agricultural University. The method calls for immunising young lime seedling against the virulent *trisetza* with mild strains of the virus. The result is a new lift for the Tirunelveli district and the 30,000 hectares of lime growing lands in the country which have been struck with this virus. Research in the US on the fodder-cum-fertiliser plant, lucerne, indicates that this method of feeding our cattle and assuring nitrogen fixation in the soil needs to be adopted and adapted in our farming communities.

Fertilisers and Credit:

The State government proposes to set up a fertiliser testing laboratory in Tiruchi to help supply quality fertilisers to farmers. This is part of the programme to attain our agricultural targets and of the several programmes to promote single and double crops and dry farming. Fertilisers will be supplied to farmers in adequate quantities and in time. In addition schemes are being operated to lend tractors to small farmers at nominal charges and to distribute pesticides to them at subsidised rates. During the year, village agricultural societies will advance short term and medium term loans to the extent of Rs. 135 crores, 50 per cent of which will go to small and marginal farmers and agricultural labourers. In 1976-77 co-operatives issued 119.33 crores as short term credit and Rs. 5.79 crores as medium term credit. The possibility of further increasing credit to the small and marginal farmers and agricultural landless labourers through jewel and consumption loans is also envisaged.

Tea :

The tea crop in the six months, January-June 1977, was 197.6 million kg, an increase of 20.4 per cent over the first six months' production of 1976. Similarly South Indian tea production increased during this period by 18.9 million kg, compared to the previous year's 12-month increase of 5.2 million kg. South India is now producing at the rate of 120 million kg a year. North Indian tea production has also increased but not at the rate in the south which is due to better technical improvement in tea cultivation and processing in the south. The world output of tea for the first six months shows that for the year there will be increased production of 90 million kg above last year. For the first 5 months of 1977, every country has obtained substantial increase at a total of 400.4 million kg compared to the first 6 months of 1976 production of 332.1 million kg and of 1975 of 376.4 million kg. The falling trend of international tea prices continued (see last issue p 515). Since the imposition of the export duty on April 9, prices at Cochin fell by 50 per cent, at Calcutta by 33 per cent and London by 36 per cent. In late August, the Union Commerce Ministry asked the tea trade to bring down the common grade tea price to Rs. 17 a kg immediately

because the North Indian auction prices were averaging Rs. 14.50 to Rs. 15.50 a kg. The ministry has also asked the trade to bring down the price further as and when the auction price falls again.

Coffee :

The Coffee Board reports that the receipts of coffee for 1976–77 season was 100,844 tonnes, of which 31,274 tonnes have been exported, 28,803 tonnes released for domestic sales, leaving a stock in hand of 45,767 tonnes. The 1977–78 crop which was earlier estimated at 1.02 lakh tonnes is now forecast at 1,06,580 tonnes, comprising 56,467 tonnes of *Arabica* and 50,113 tonnes of *Robusta*. Including stocks carried from the previous year, coffee exports in 1976–77 were 51,440 tonnes, earning Rs. 150.80 crores, the unit value jumping from Rs. 11 a kg in 1975–76 to Rs. 29 a kg in 1976–77. In April/May 11,220 tonnes were exported at Rs. 53 per kg and even with a severe fall in prices that the output recovery in Brazil and Colombia will involve, both the quantum and value of coffee exports this year will increase. With coffee production stabilised at 1 lakh tonnes, the Coffee Board's plan to raise coffee output by two and a half times by 2,000 AD is timely and is being further worked on by the Planning Commission and State governments. Under the Plan an additional 1.30 lakh hectares of land is to be brought under coffee cultivation by 1993–94 to yield by the year 2,000 at least 1.15 lakh tonnes so that total coffee production would then be 2.52 lakh tonnes. To begin with, an additional 40,000 hectares will be brought under cultivation by 1984–85 with a capital outlay of Rs. 84 crores. Of the total addition of 1.30 lakh hectares, 58,000 hectares will be in the traditional coffee growing areas of Karnataka, Kerala and Tamil Nadu and 72,000 hectares in the non–traditional areas—Andhra Pradesh and Assam 16,000 hectares each, Orissa 4,000 hectares and other states 36,000 hectares. This means that 3,000 hectares of new areas must be brought under cultivation each year till 1980–81, then 6,000 hectares annually till 1982–83 and then on 10,000 hectares per year. With regard to international coffee prices, the Latin American producers who are the major producers (Colombia, Mexico, Costa Rica, Venezuela, Brazil and Panama) are discussing a proposal to set up financial reserves to stabilise coffee prices within the function of the International Coffee Organisation. Since 1975, coffee prices have fluctuated from 45 cents to $ 3.40 a pound and led to a boycott by consumer countries leading to a 20 per cent decrease in coffee consumption, some stabilisation of prices is in the interest of both producers and consumers.

Rubber :

Production of natural rubber increased by 2,582 tonnes at 56,223 tonnes in the first five months of 1977. Consumption reached 58,911 tonnes, representing an increase of 10,004 tonnes over the corresponding period of the previous year, 5,076 tonnes were exported, with an export subsidy of 25 per cent announced by the government in mid August. STC has been asked by the government to purchase and export 12,000 tonnes. The Rubber Board estimates that there will be a further 12,000 tonnes available for export. As international prices are low, it wishes the government to bear the

loss, and hence the subsidy. Government also fixed the minimum price on 9th August at Rs. 655 per quintal. The relation of this floor price to the market price and the costs of production of rubber need review by the government, with a view to fixing the floor price at a reasonable level.

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III Industrial Development

Salem Steel :

In mid August, the Union government announced that it had approved the detailed project report of the Salem steel plant and has asked the project team to go ahead with the construction of the first stage of the project to produce 32,000 tonnes of cold rolled stainless steel sheets and strips at a cost of Rs. 127 crores to be completed in 54 months. The second stage will create facilities for iron and steel making from basic raw materials including magnetite ore from Kanjamalai, continuous casting, hot rolling facilities for feeding the cold rolling mills and additional rolling facilities. This second stage will require import of technology which will be decided after examination of the foreign collaboration offers. Meanwhile, as noted in earlier issues, all infrastructure work on the project site is now completed at a cost of Rs. 13 crores.

Neyveli :

The second mine cut at Neyveli, which is needed for it to be the site of one of the 5 super thermal plants, is the subject of a feasibility report by the Union Department of Coal. The report will be examined by the Central Electricity Authority by the end of September after which it will have to be processed by the Planning Commission and sent to the Public Investment Board for approval.

BHEL and ICF :

BHEL is readying itself to take on future thermal plant establishments on a turn-key basis in order to increase the efficiency of the plants by 15 per cent without any additional cost, and for this purpose to train the Electricity Board personnel in better operation and effective maintenance of the units. The work done by BHEL engineers on units 1 and 2 at Ennore showed how after modification of the equipment and training of the staff the plant's efficiency

increased. In mid August, BHEL announced the management take-over of India Meters after arranging for its capital credit with the financial institutions and re-organisation of the factory, thus ending a prolonged period of closure. The Integral Coach Factory has been assigned the design and manufacture of special type coaches for the Calcutta Metropolitan Transport (underground) Railways Project. This is the first time that this type of coach is being made in the country, and in the first order ICF will be making 16 prototype coaches in two formations of 8 coaches each. The major electrical equipment for manufacturing the coaches will be supplied by the Bharat Heavy Electricals and NGEF. For the year, the ICF will be producing 643 coaches and next year will reach its capacity of 750 coaches. In addition, it is producing 12 double-deck coaches and is designing a prototype of the 76-feet coach with sleeping capacity for 77 persons.

TIDCO:

TIDCO's Ariyalur dry process cement plant's 2.5 lakh capacity of the first kiln will be commissioned this September. By April 1979 the plant will have a capacity of 8 lakh tonnes. It is setting up an asbestos cement sheet project at Alangulam at a cost of Rs. 1.6 crores and with a capacity of 36,000 tonnes of sheets per year. Tamil Nadu Steel at Arkonam produced 28,948 tonnes of steel billets in 1976-77 and reduced its loss from Rs. 153 lakhs in the previous year to Rs. 7.28 lakhs. It is examining the possibility of setting up a modern steel blooms project which might be used as an input into BHEL's seamless steel tube project in Tiruchi. In the joint sector, TIDCO will promote a Rs. 6.5 crore aluminium fluoride unit in Ramanathapuram to go into production in mid 1979. Also the Rs. 1.49 crore export-oriented project for manufacture of gloves, garments and upper and lining leathers at Ranipet will commence production by the end of 1978. The first phase of the bearings project at Hosur will be ready by mid 1978. Its new joint sector refractories project in the first stage envisages benefication of raw magnetite and production of 50,000 tonnes per annum of basic brick at a capital cost of Rs. 15 crores A dye plant at a cost of Rs. 10 crores is being set up at Cuddalore jointly with Atul products.

Electronics:

The government announced in August that to accelerate the development of electronic industries, an Electric and Electronics Corporation has been set up with a provision of Rs. 25 lakhs. It is to take over all electric and electronic activities of the Directorate of Industries, and provide consultancy services, technical approval for financing institutions, joint sector participation and marketing assistance. A developed estate for electrical and electronic instruments industry is being set up near Madras.

TANSI and TIIC:

TANSI plans this year to establish seven projects. A project for the manufacture of machine tools will work in collaboration with HMT, Bangalore. Another project for quarrying black granite stone is to be launched with an export orientation, with a modern finishing unit at Tindivanam. A third project at Ooty is for the assembling of watches, a fourth is for the modernisation of foundry units and others are for

expansions of tool rooms, establishment of a super tool room and manufacture of plastic moulds. TIIC reports during the 3 months, April to June, loans to 116 units for Rs. 4.50 crores, of which small units were 92 receiving 1.45 crores and backward areas 65 units for Rs. 3.07 crores. For import of plant machinery Rs. 1.41 crore loans from the World Bank credit was made to 7 units. It also reports that with its streamlined procedures, it takes 6 weeks to process an application, as a result of which it has only 12 applications pending on June 30, 1977, compared to 110 applications on June 30, 1976. The major areas of its loan operations were engineering, textiles, chemicals, leather and electronics. Its recovery rate at Rs. 1.25 lakhs for the 3 months has improved by over 30 per cent. Its loans to small units are at 9.5 per cent interest.

Small Scale Industry:

During the year a service centre for electro-medical equipment is to be set up at Salem, a field extension service research station for salt and marine chemicals and a centre for inspection, testing and maintenance of electro-medical equipment with training facility is to be set up at Madras. A scheme for popularising new varieties of mulberry and irrigation facilities for it will be provided this year. Small scale industrialists reviewed their problems with the chairman of the National Small Industries Corporation in late July including the problem of inadequate allocation of business by NSIC to the state unit because its products were not on the preferred list of NSIC; also the units did not get their share of machinery supplied on hire purchase. Like the consortium for marketing formed by the hosiery and matches units, there is need for similar arrangements for steel furniture, pumps, motors, castings and other units. These should be attended to.

Alcohol-based Industry and Micro-Nutrients:

The country needs more alcohol to be diverted for industrial use than for liquor production. Of the country's 17 major producers, Tiruchy Distillery and Chemicals and Sakthi Sugars are at the top and need to be strengthened and expanded to help the manufacturers of plastics, synthetic rubber, drugs, pharmaceuticals, insecticides and chemicals. From this point of view, the decision of the government to provide the industry with incentives and the setting up of the committee to draw up a detailed scheme of incentives is a welcome move. The price of industrial alcohol also needs to be revised and this is being examined by the Bureau of Costs and Prices, and the state governments in their turn must standardise their sales and excise taxes on this important industrial input. The Department of Agriculture is producing 700 tonnes of Micro-Nutrient Mixture (MNM) to be used as a supplement to fertilisers by farmers growing groundnuts, cotton and potatoes. The MNM series are separately developed for each crop and increase yield by 15–24 per cent.

Textile and Sugar:

The 12 co-operative mills in the state (with an installed capacity of 2.12 lakh spindles and producing about 5,000 bales of yarn) are to be expanded in capacity to 3.26 lakh spindles capable of a monthly production of 9,500 bales of yarn. State and Union level committees have studied the problems of 38 sick

mills and made recommendations on their financing by banks, as a result of which seven mills have re-opened. Textile workers in the state decided to observe September 17 as a strike day to press their demands for government take-over of 8 closed mills and 7 sick mills in this state. The 8 closed mills are: Madurai Raja, Kodandaram, Lakshmi Cotton, Muthanenthal Somasundaram, Coimbatore District Lotus, Prakash, Padma and Tamil Nadu Spinning Mills. The 7 sick mills are Mathu Spinning, Janarthana, Ravindra, Sakthi Textiles, Kamala, Bhavani and Pudukottai Kaveri. On the sugar front, the sugar industry offered in August to the Union government a package deal which would not only ensure a remunerative price to the cane grower, but also increased revenue to the government and the mills. SISMA has proposed that the cane grower be paid Rs. 10.50 per quintal linked to a recovery of 8.5 per cent, that the excise duty be reduced to 10 per cent on levy and 30 per cent on free sugar, and the excess realisation be shared equally between the industry and the grower. The 60 factories in the south face growing stocks and falling free sugar prices. While the return in other industries is 14.5 per cent, in sugar it is 9.5 per cent and falling. The price formula needs review, it says, and new mills should be started to increase production to 60 lakh tonnes.

Handlooms:

The new government points out that of 5.56 lakhs of handlooms in the State, only 1.8 lakh handlooms are organised in primary weaver co-operative societies. Within 3 years it plans to bring 60 per cent of handlooms in the co-operative fold and to set up a Handloom Industries Board to achieve a major break-through in the handloom sector. On the marketing side, handloom garment exports are on the decline following EEC quota restrictions, and the requirement that the importer himself must get his licence. US demand on the other hand is reviving and new markets for handloom fabrics, ready-mades, bed spreads and fringes are opening in Australia, New Zealand and Fiji.

Leather :

As part of the industrial development programme of the state, the government announced in the Legislative Assembly in August the setting up of a Leather Development Corporation to promote leather exports, and made a provision of Rs. 10 lakhs for this year for the Corporation. The Union government has set the target for leather exports at Rs. 340 crores for the current year. Last year exports rose to Rs. 317.72 crores exceeding the target of Rs. 300 crores. The Export Promotion Council proposed a target of Rs. 357 crores but in view of the April-June export figure of Rs. 61.92 crores against last year's first quarter export of Rs. 76.16 crores, the government fixed the lower target. One problem that is continuing to worry tanners in the state is the problem of pollution and effluent waste disposal. The state government had fixed a deadline of the 1st week of August by which time each tannery had to take steps to treat the wastes before they were let out, after which date licenses would be renewed only in those cases where such preventive action had been taken. The tanneries see the seriousness of the problem and accept the need to take corrective action, but are still searching for some economical and viable process.

The process suggested by CLRI is costly (Rs. 40,000) and can be adopted by large units or a number of small ones clustered in one place. Most tanneries are located in isolated areas, far away from one another. Of the 600 tanneries in the country, 400 are in the south, the largest number being in North Arcot. One question is whether on the basis of a special levy on the tanneries, the government should provide this process for the units or not.

Private Sector :

The annual report of Shaw Wallace for the year ending 31 December 1976 discloses a 6.7 per cent increase in fertilisers produced and sold, a 26 per cent increase in agro-chemical sales, a 37% increase in its shipping, a 105 per cent expansion in its exports, an increased cargo of 2,069 tonnes, an increased sales turn-over of yeast of 12.6 per cent and an expansion of a number of other joint sector activities. The company reports a pre – tax profit of Rs. 1.58 crores and a group profit of Rs. 4.03 crores.

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IV Education, Science and Health

Educational Unrest and Reform :

August saw a continuation of unrest in educational institutions on a somewhat diminished scale. 7 cities involving 42 colleges in this state were involved in strikes and agitations of various kinds owing to problems, welfare and amenities of student but very largely due to the release of student energy and activity after the emergency. Outside the state, three university centres report similar disturbances. On the education reform side, the major event was a meeting of the state ministers of education to review the new pattern of education. The Prime Minister who inaugurated the meeting questioned the validity and use of the new pattern 10+2+3, as dealing with form and not substance, and not aimed at character building while neglecting education in the mother tongue. The meeting, however, noting that most states had adopted the new pattern and others were ready to do so, decided that all states would adopt the new pattern by the end of the Sixth Plan. One of the decisions was that universal enrolment

of the 6-14 age-group in schools should be attained within 7 years. The content of the 10-year school programme is now under review by Ishwarbhai Patel Committee and its conclusions will lead to reform of the curriculum. The +2 higher secondary stage is to be vocationalised by internal restructuring and modification of content and by developing strong links between education and various development departments of government service: industry, commerce, agriculture, health and community development. On the degree course, each state will decide whether it will have a 2 or 3 year degree course in consultation with UGC. Each state is to prepare a state plan for universalisation of primary education and adult education based on block level plans, with special programmes for girls, scheduled castes and tribes and other weak sections along with the funds needed to which the Planning Commission and the NDC will be asked to give the biggest priority. There will be multi-point entry, continuous assessment with no detention upto class VIII, introduction of a certificate examination on a voluntary basis at the primary and middle school levels, non-formal and part-time education; and in adult education, 10 crores of persons in the 15-35 age-groups should be covered in the next decade. At the nursery school level, the State Federation of Private Schools has agreed to the state recognising private schools and setting forth guidelines for their efficient functioning, prescribing syllabus and conducting orientation courses for the teachers. The Federation has 2,500 schools as members, using 13,000 teachers and covering 4 lakh students. The Union education minister has under consideration a scheme for introducing NSS at the school level in order to involve students in various developmental activities. A study couducted by NCERT in Andhra Pradesh shows that fewer students dropout or fail in basic schools than in other types of elementary schools, and recommends the opening of such schools in urban areas, improving the equipment and teacher status and conditions of such schools and giving these schools a position equal to the others. At the university level, the Tamil Nadu Legislative Assembly towards the end of August, passed the Bill amending the Madras and Madurai Universities Act as a result of which 4 colleges—Loyola, Madras Christain, PSG Arts and PSG Technology and the 2 post-graduate departments of chemistry and economics of Vivekananda College of Madras University and American and Parasakthi colleges of Madurai University become autonomous. This is a long awaited reform of higher education which will introduce flexibility and capacity for innovation in the system.

Adult Education and Mass Media :

The Union government announced in August the setting up of a National Board of Adult Education comprising 21 members (4 Union ministers, the deputy chairman of the Planning Commision, 4 state ministers of education and 12 specialists) to plan and operate an adult education campaign as a mass movement involving government teachers, students and voluntary agencies. As noted earlier, it is proposed to make literate 10 crores out of the 23 crores of adult illiterates. Excluding the age-group 0-4, illiterates the literacy rate in 1977

was 33.85 per cent (up from 14 per cent in 1947) but due to the increase in population the number of illiterates rose from 24.7 crores in 1951 to 30.9 crores in 1971. The target of 10 crores out of 23 crores refers to the age-group 15–35. The Committee set up by the Union government on the news agency has recommended that Samachar, the news agency, should be broken up into two agencies: Sandesh, an English language agency and Varta a multilingual news agency. The two agencies, it is recommended, should set up an international news agency to be called News India. The Union government has also set up a 11-member committee to work out the structure, phasing, staff and other arrangements to establish AIR and Door Darshan as autonomous bodies which can provide mass information, news, education and entertainment programmes on an objective and independent basis.

Technical Education :

The Assembly was also informed that the proposal for the University of Technology comprising the Engineering College (Guindy), MIT (Chromepet), and the 4 technology departments of the AC College of Technology (Guindy) had been cleared by UGC and a bill to set up the university would be introduced in the next session of the Assembly. On the other hand, the request by some members of the Assembly that more agricultural colleges and polytechnics should be opened in the state was not accepted by the government which pointed out the difficulty of existing agricultural graduates to find jobs. Further any such move will have to be approved by the ICAR which has advised against further increase in the number of these professional institutions at this stage of the country's development. The system of admission to medical colleges based on interviews has resulted in admissions not being completed till mid August in the colleges and in the serious disruption caused to the arts and science colleges as a result of the migration of some 1,000 students from those colleges to the medical colleges. The government announced in the Legislative Assembly that the future selection to the medical colleges will be made on the basis of a written test so that merit alone will be the guiding factor, allowing for students from scheduled castes and tribes and backward classes, and speeding up the whole selection process. The system should be extended to admissions to other professional courses including engineering. For this year's medical admissions, backward classes annexed 55 per cent of seats: this is 487 out of 883 seats. 212 were selected in open competition and 275 in the reserved quota. 164 were from the scheduled castes and tribes. 343 were women and 40 per cent were from rural and 60 per cent from urban areas. The government announced that it is upgrading the Madras Medical College complex and Hospital as a postgraduate education and research centre.

Science :

The major development in August was the decision of the government to reorganise the CSIR and place 28 out of its 44 laboratories with various Union ministries and services in the following manner: National Botanical Gardens and Central Indian Medical Plants Organisation (Ministry of Agriculture), Central Electro-Chemical Research Institute and Central Salt and Marine Chemical Research Institute (Department of Chemicals),

National Aeronautical Laboratory (Department of Defence Production), Tea Research Association (Commerce Ministry), Central Fuel Research Institute and Central Mining Research Station (Department of Coal), Central Mechanical Engineering Research Institute and Automotive Research Association of India (Department of Heavy Industry), Indian Institute of Experimental Medicine and Indian Toxicology Research Centre (Ministry of Health), Indian Institute of Petroleum and Central Road Research Institute (Ministry of Shipping and Transport), National Metallurgical Laboratory (Ministry of Steel and Mines), Central Building Research Institute (Works and Housing Ministry), Central Leather Research Institute, Central Glass and Ceramics Research Institute, Indian Plywood Research Institute and Cement Research Institute (Ministry of Industrial Development), Ahmedabad Textile Industries Research Association, Bombay Textile Research Association, Silk and Art Silk Mills Research Association, South India Textile Research Association, Wool Research Association and Indian Jute Industries Research Association (Department of Textiles), Birla Industrial and Technological Museum and Visveswaraya Industrial and Technological Museum (Ministry of Education). This means that the laboratories that are to remain with the CSIR are: National Physical Laboratory, Scientific Instruments Organisation, National Geophysical Research Institute, National Institute of Oceanography, Regional Research Laboratories (Jammu, Hyderabad, Jorhat and Bhubaneswar), National Environmental Engineering Research Institute, Structural Engineering Research Centre, Publications and Information Division, Indian National Scientific Documentation Centre, Central Drug Research Institute, Central Electronic Engineering Research Institute and Central Food Technological Research Institute. This decision is questionable on both scientific and procedural grounds. On scientific grounds the CSIR has developed these institutions on an inter-disciplinary basis and despite the problems of centralisation, bureaucracy and lack of consumer orientation which have been pointed out in this *Bulletin*, they have gradually developed the kind of science and technology needed for the technological development and self-reliance of our economy. To continue on this path, they need to maintain technological and scientific autonomy and ethos which will now be lost. On procedural grounds, this decision should be taken only after consulting the scientific community and the governing body of the Council. To say that this is to be done and the decision is subject to its recommendation is of little use because much harm has been done to the devoted band of scientists who man the laboratories. The energy ministry is drafting a programme of application of solar energy to the rural sector, particularly in the remote areas where it is needed for agriculture and power development. Solar pumps have been given priority with 12 laboratories and institutions working on them. Two technicians in the Bardoli Ashram in Gujarat have designed a big solar cooker so that cereal food can be cooked without the 15 per cent cost of fuel. The cooking time ranges from 1 to 4 hours a day during which 300 meals can be cooked. Further solar driers and solar water heaters have been developed in other stations, while in Gujarat and Tamil Nadu solar energy for desalination of sea water and conversion of brackish water is being tried out from the point of view of optimisation of cost. Scientists at IIT (Madras) report running a spark-ignited engine entirely on hydrogen as a result

of years of research on biogas and hydrogen–the most promising alternative fuels. CSIO reports that it has developed the technology for making an electron microscope and that a fully engineered system will be available by the end of the year. The results of the 1974 census of scientists and technologists have been published in the handbook brought out by DST according to which there were in the country 13 lakh science and technology personnel in December 1974. Of about 1.21 lakhs employed in R and D establishments, 38 per cent were engineers, 23 per cent agricultural scientists and 1 per cent medical scientists. The King Institute, Guindy, is now to prepare and distribute anti (snake) venom serum to supplement the Haffkine Institute's production of anti-venom serum. During August, a meeting of ICSU's Committee on Science and Technology in Developing Countries (COSTED), with 8 members from abroad, was held in Madras at which after 10 days of consultation, it was agreed that there should be a re-ordering of the objectives and priorities of science to have a rural bias in India. The major reason for the failure of the third largest pool of scientists to contribute to the basic needs of the poor people in the country is the non-acceptance of suitable technologies in agriculture, the use of market prices and profitability rather than human need and social priority as criteria of investment in the industrial sector.

Health :

The meeting of the state ministers with the Union health minister on July 30 and 31 resulted in (a) the revised family welfare policy statement which is a continuation of the past policy except that the element of force in achieving sterilisation targets is dropped. Population as a factor in central assistance allocation, the linking of 8 per cent of central assistance to State Plans to performance and success in family welfare programmes, publicity efforts, etc. are all strengthened and continued. In the first 3 months sterilisations were 1.48 lakhs compared to 5.4 lakhs in the first quarter of 1976. The meeting decided that the programme should have a high national priority. (b) The rural health scheme summarised in Vol. VII pp 311 and 393 is to be launched on October 2 in 777 PHCs. Due to financial constraints, the scheme will operate in 8 districts in 6 States and 1 PHC each in the remaining districts at a total cost of Rs. 4.5 crores, instead of in the whole country. It is also good to try this out before launching the national programme. All states except Kerala and Karnataka have accepted the scheme of community health workers. Tamil Nadu will implement the scheme in 9 PHCs. In each PHC 30-40 community health workers from 2 neighbouring sub-centres will be trained from October 2 to the end of March. The state government announced in the Legislative Assembly a scheme to set up mini primary health centres to provide comprehensive health care to the rural people with voluntary agencies' assistance. Every centre will extend preventive, curative and promotional health services to a population of 5,000 the cost being equally shared between the Union and state governments and the voluntary organisations. Also the government is to implement the multi-purpose health workers programme

in Chingleput, South Arcot, Madurai, Salem and Kanyakumari districts, where 2 trained workers including a woman will be posted for every 5,000 people to run curative and health services including treatment of minor ailments. A team of Indian scientists have developed for the first time a vaccine that can produce antibodies against the hormone for the maintenance of pregnancy and that can lead to a rejection of the fertilised ovum. The first phase of clinical trials has been successful and the vaccine is being tried out on women in 6 developed countries. This is the work of the bio-chemistry division of the All India Institute of Medical Sciences, New Delhi.

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V Employment

As on March 31, 1977, the live register of employment exchanges in the state showed 88,84,047 job seekers. In 1976 the number of strikes and lock-outs fell to 207 from 244 in 1975, and the mandays lost fell to 10,00,507 from 16,86,246 in the previous year. In place of the apex body, the tripartite consultative body is being revitalised to advise the government on labour policies. The review committee on the Pilot Intensive Rural Employment Project (PIREP) set up by the Ministry of Agriculture has presented its report, and its main recommendation is that unless the entire planning strategy becomes employment oriented, special employment programmes like PIREP cannot deal with unemployment. All employment projects which meet the tests of financial viability and technical feasibility should become an integral part of the district plan and not an *ad hoc* supplement. It noted that the PIREP lacked support of local leadership as well as the administrative machinery needed for such participation. It refers to overt chronic unemployment being small compared to underemployment measured in terms of unutilised mandays or per capita income. Underemployment could be tackled by improving the productivity of labour through technological and institutional improvements and extending the duration of employment of the underemployed in their existing occupations. Employment in agriculture could be increased by intensification and diversification of production on small farms. Also the artisan class could increase their income and employment through upgrading their traditional technology, product diversification and institutional reform of the credit and marketing systems. The report

admits that even after adopting the type of development and employment strategy, there will be unemployed persons and for these special employment programmes should be developed and operated. It also recommends that the state governments should form a few multidisciplinary teams comprising specialists in area and district planning into which the different special programmes should be integrated.

The 30 member committee set up by the Union government (see last issue p 525) at its first meeting in early August decided that there was a case for a single consolidated central law in place of the multiplicity of laws on labour and labour relations. Such a law could co-exist with state laws which are related to special conditions in each state.

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VI Other Items

Town Planning and Air Pollution Control :

A seminar of the Directorate of Town Planning in Madras in early August reviewed the regional plans established for the State and the means of implementing them. The various connotations of the concept of urbanisation as of the demographic ratio of urban population to total population, urbanism as a way of life and the sociological approach referring to the cultural traits of the population were reviewed, along with the urban scene and the state of the cities and towns. Also in August, the Institution of Engineers organised an exhibition in Madras on air pollution control which made known to the public and transport owners the various ways of controlling vehicular air pollution. The simple gadgets developed by the IIT, such as the smoke meter, gas analyser, dynamo meter, etc. were on exhibition, which should lead to some control of pollution by buses, trucks and cars along with improvement in oil and petrol use.

COSTED and NCERT

As noted on p 603 above a 10-day meeting of the Committee on Science and Technology in the Developing Countries (COSTED) in one of its sessions discussed the input of science and technology in the world model of development elaborated by Wassily Leontieff for the United Nations. The importance of this model is that it shows that the income gap between the poor and rich countries can be reduced by half by 2000 AD and

closed by 2050 under certain conditions and for this science and technology should be an important input. The annual meeting of the council of NCERT, was held in Delhi in mid August and took note with satisfaction of the programme achievements in 1976–77. It decided that the pilot projects for primary, secondary and non-formal education run by the council should draw on the research resources of the universities and SCERTs.

Agro - Industries Corporation and National Staff College

A meeting of the Agro–Industries Corporation was held at Rajaji Hall (Madras) in mid August to popularise the food products made from *cholam* and *cumbu*. In the rural areas where there is both undernourishment and malnutrition and in the urban areas where there is concentration of rice consumption, these new foods produced by the Corporation can help to relieve the food situation. A meeting of the governing body of the National Staff College for Educational Planners and Administrators was held in Delhi in August. The Governing Body approved the programmes of training the finance officers of the universities and of research into costing of educational projects and regional programmes worked out in co-operation with the UNESCO.

IAEA and IAPL

The Executive Committee of the Indian Adult Education Association met in early August and reviewed the plans for the National Conference in October at Udaipur to be followed by meetings of the International Council of Adult Education. There was also an interesting discussion as to whether the association should itself undertake research or simply sponsor and promote research. Views were divided on this and it was decided to return to this issue at a future session. The Madras Chapter of the Indian Association for Programmed Learning and Educational Innovation held its inaugural meeting for the year in August in the Madras University, when the Director of NCERT and the Principal of the Madras Medical College spoke emphasising the urgency for changing the education system into a real learning system.

WUS:

Han Suyin, the noted Chinese writer spoke at a meeting of the World University Service on "China Today and Tomorrow". It was interesting to note the many common problems between the two countries in population, agriculture, heavy industry, rural development and the need for forging closer bonds between the two countries, so that each can learn from the other. WUS also held its Assembly towards the end of August at which it approved its report and accounts for last year and the programme and budget for this year. It was proposed to expand the programme of rural development centres in the mofussil colleges during the year.

College Unions:

The Madras Christian College dairy husbandry training programme was inaugurated in August with 25 trainees from all over the country. The College farm has developed into a viable and efficient animal husbandry enterprise and

has rightly become the focus for training in this area for the country. Guru Nanak College inaugurated its student union in August emphasising the need for the student unions promoting all the extra curricular activities of the students and preparing for entering the semester system next year. SIVET College also held its student union inauguration with emphasis on students settling their problems by discussion and decision and not by strikes and violence. Madras Medical College held its graduate reception at the end of August at which the purpose of medical education in terms of community health and the need to structure the university to meet this need were emphasised.

Association of Schools of Social work

The Association of Schools of Social Work in India held its annual seminar in Madras to coincide with the Silver Jubilee of the Madras School of Social Work. The occasion was used for highlighting the achievements of the schools and departments of social work during the last 40 years and the challenges facing the profession of social work to transform its urban-industrial orientation to one in line with our agro-rural imperatives and the national priority for rural development and to train front-line workers with a B.A. in social work for such service.

UNESCO's University Programme:

There was a week's consultation in Paris on UNESCO's university programme. There was a review of the functioning of the universities in the light of the UNESCO recommendation on education for international co-operation and peace. It was decided that a UNESCO programme should be started with 6 to 8 universities undertaking activities through their language and area studies departments and their research programmes in relation to the documentation and conclusions of the major UN conferences on water, energy, science and technology, habitat, population, food, environment, industry, etc. Madras University was selected as one of the universities for the experiment in promoting human rights and fundamental freedoms.

Madras University Events:

During August, the university events included the inauguration of the post-graduate diploma in portfolio management, the year-long silver-jubilee celebrations of the department of physical chemistry, the Advisory Committee or Space Sciences which reviewed the programme of the past year and recommended its institutionalisation during this year, and the monthly meeting of the Syndicate which approved 3 more post-graduate diploma employment preparation courses and the revision of salary scales of the non-teaching staff of the university.

September Development Seminar

The September Seminar paper "Science and Technology Perspectives" by Dr. Basu John, appears as the first article.

Second Article:

A paper on "Social Work Theory and Practice: its Past and Future" appears as the second article.

SCIENCE AND TECHNOLOGY PERSPECTIVES

By
BASU JOHN
Madras

I. Introduction

a) Development of the area of Science and technology in India.

While the growth of science education and pure research in the basic sciences had long been established in India, and institutions like the Survey of India (1767), the Geological Survey (1851), the Indian Meteorological Department (1875) have existed for over a hundred years, it was the creation of the Board of Scientific and Industrial Research during World War II, that was later expanded to the CSIR, that provided the start of applied science and technology development in India. Although envisaged as instruments for utilisation of the natural resources of the country for the benefit of the people, the government endowed the laboratories and institutions with autonomy from the users of the developments, and the consequent lack of definition between the pursuit of knowledge and the application of science to human good was only to be expected. The position was further undermined by the Scientific Policy Resolution enunciated by the Government in 1958. The following clause contained in it was typical of its effect in totally de-linking Research and Development from the ministries responsible for rapid industrial and agricultural growth involving development and application of technology:

> "To encourage individual initiative for the acquisition and dissemination of knowledge and for the discovery of new knowledge in an atmosphere of academic freedom."

While even educational institutions with their bread and butter output of graduates would have found it difficult to stand upto a benefit/cost analysis of their research spending, especially if the relevance of the papers published to the betterment of all sections of Indian society were the terms of assessment, most research laboratories lost out in competition with imported technology of developments available to multinationals as was evident in the preference of Indian companies acquiring new technology. "Academic freedom" led to research being carried out in areas without clear-cut objectives related to national needs, or sponsorship from possible ultimate

users who were thus isolated from orienting the scope or direction of the development effort and from providing feedbacks, often resulting in reinvention, rediscovery and redevelopment or producing unsuitable outputs, including graduates, suited to an industrialised western environment that absorbed them by providing suitable personal compensations.

b) The National Science and Technology Plan 1973 provided the orientation that had been lacking, by outlining need for appropriateness of technologies, use of employment generating technologies, indicating areas of prime importance and providing the foci for national commitment for the decade. The plan was to provide the government with a blueprint with which to chart the direction and thrust of a whole host of policies which would promote technological self reliance. All policy was to be centralised under the National Committee of Science and Technology, and finance for implementation obtained through a one per cent cess on industrial production (estimated to yield Rs. 300 crores). Even a fraction of the finance could not be raised and the NCST has not met for two years.

c) The Tamil Nadu Plan for Science and Technology outlined a specific approach to fulfil the objectives of the state plan which included doubling of the per capita income by 1984, reducing social and economic inequality and elimination of unemployment through increased productivity by the application of technology. This parallels the basic attitudes in the Janata election manifesto including use of appropriate technology for self reliance, the right to work and full employment, and the narrowing down of rural urban disparities. The views of the new government after taking over concerning "optimising the utilisation of human and material resources, speady development of job oriented industries etc." and the indication of the home minister that "industrialisation would be relatively more small industry oriented, being more capable of dispersal and positive interaction with rural environment", indicate compatibility with the Tamil Nadu Plan's commitment to science in the battle against poverty and the AIADMK's stress on rural development and employment. Hence, while the basic orientation of the approach to science and technology in the state could remain unchanged, the details and areas of stress would necessarily be strongly influenced by the national science and technology policy being formulated on September 29 and 30 by the newly reconstituted NCST under the chairmanship of Dr. Atma Ram. The only indication available is the likely strong rural development orientation and, as indicated by the composition of the committee, the application orientation likely to be insisted on all future development projects.

II. Resources for Science, Technology and Application to Research and Development

Manpower, Technical and Financial Resources

While it would be premature to indicate possible trends in resources likely to be available for science and technology, the growth of manpower resources, and the reorganisation of technical resources like laboratories and institutions under ministries responsible for the major outlays in individual areas, are likely to

enhance the number and size of development projects sponsored. The funding till now has been made directly to the research laboratories from central funding agencies. Under the present trend towards research oriented to specific social goals, the requirements of feasibility studies, technoeconomic viability, confirmed markets/users who would interact even at the development stage to monitor and provide feedback and a benefit/cost analysis to determine resulting social good, are likely to be insisted upon both at project formulation stage and at the implementation stage as ministries and departments, who would now be vested with the responsibility, would themselves need outputs to justify their financial outlays. With the proposal that twenty-eight of the fortyfour CSIR laboratories be transfered to appropriate ministries to ensure better coordination between research and industrial development and the trend to provide industrial orientation to research conducted in educational institutions, personal accountability and institutional responsibility would orient expenditure towards fulfilment of immediate needs for achieving the national goals. With the adoption of the rolling plan concept for general planning and the ending of the Fifth Plan this year to launch the Sixth Plan next year, it is inevitable that the science and technology plan also is devetailed into the rolling plan.

It is felt that science and technology projects could also be revitalised adopting an annual plan concept within the framework of the rolling five year plans. It is expected that the progress of the projects could then be reviewed annually and necessary flexibility incorporated in their implementation.

The NCST will, however, wait for the allocation of funds by the Planning Commission for science and technology to work out the details of the science and technology projects to be taken up during the Sixth Plan.

III. Generation of Relevant Technologies

a) Direction of technological change.

The change in the method of management of research would result in more research being conducted "in house", perhaps with increased efficiency, as demonstrated by agricultural research, atomic energy, defence, railways, etc.

The drive towards rural uplift would call for more development at a completely different level from the present stress on high technology research.

The myth of a purely "Technological Solution" to the vast array of problems of poverty and backwardness that afflict the country has been demostrated as unattainable. A host of difficulties, institutional and otherwise, prevent direct adoption of technology proven elsewhere, as much of it has limited relevance to problems of developing countries, especially with respect to utilisation of labour, adaptation to the capability of local manpower and conditions, and requirement of the local market.

The realisation that neither technology change nor industrialisation can now be considered for any country or geographical region in isolation from world trends in demand and supply of vital raw materials, environmental policies and political pressures, etc. limits the alterna-

tives available to a developing economy to accelerate growth. Successful prediction of long term world trends in technology would also be a prime factor in maximising returns on investments in technology.

(b) Technological change and economic growth:

Technological change and the underlying body of growing scientific knowledge on which it is based is not an exogenous variable, independent of economic forces. Economic needs could be the cause of intensifying inventive activity. The role of savings and the growth in stock of capital goods are insufficient to explain rates of economic growth observed which are sometimes far beyond what would plausibly be accounted for by mere increase in the supply of conventionally measured inputs. A possible link is the ability to learn to use these inputs more productively. This leads to the role of technology as a source of increasing resource productivity.

Starting with the present consensus in favour of research and development in agriculture and rural activities based on the rationale that a small increase in productivity in these fields will serve to raise productivity of 80% of the country's people, besides saving capital costs of rural urban migration and resettlement, development efforts are to be directed towards increasing the viability of dispersed small scale industry and substitution of labour intensive technology suitable to the performance levels of available manpower. Since these production conditions are unique to developing countries like India, a host of problems including evolving of semi-automatic machinery, redesigning of products using local raw materials, etc. are to be tackled if the manufacture has to be viable in competition to the economies of large scale manufacture utilising scarce capital. While a free floating capital market would force upward the cost of capital ensuring rapid transition to substitution of labour for expensive machinery, the increase in productivity of techniques that can be applied to small scale manufacture would help equally in industrialisation of the rural areas at an affordable cost. Technological advancement in comunications, transportation and power generation and distribution can provide the means of reducing the advantages presently enjoyed by urban industrial production, highlighting the manpower advantage of dispersed industry.

c) *Motivations for application of* science and technology.

The rate at which new techniques are adopted and incorporated into the production process has been shown to be one of the prime factors of economic growth and if motivation can be provided, the body of scientific knowledge and its application as technology would be self generating.

All investment for increasing production should be counter-checked with respect to the technology in use as against the state of the art, with special reference to Indian conditions.

All attempts at development should be backed by an efficient data base indicating currently available knowhow and sources, enabling further development to be cost effective by avoiding "rediscovery".

All investments in education, training, defence, etc. should be examined to ensure that any possible changes of orientation or methodology enabling developments with application towards increasing productivity in other sectors, to be obtained as spin-offs are incorporated. This could replace a significant part of the present research funding.

All evaluation of academic, institutional, developmental and production performance, be with reference to contribution towards achievements of national goals.

All recognition of such contributions by individuals, groups or institutions must be in tangible form to provide definite motivation for further effort.

Each development scheme must be assigned a priority based on a rigorous comparative benefit-cost analysis enabling outstanding projects to gain sponsorship.

All efforts must be made to create a public awareness of the need for increased productivity and of the role of science and technology in enabling optimum use of scarce capital and natural resources, for an enlightened and discriminating society is the best safeguard for ensuring an efficient social system.

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Summary of Discussion

In the discussion of the paper at the Seminar held in the seminar room of the Institute, on Thursday 29th September 1977, under the chairmanship of Dr. A. Ramakrishnan, Director, Matscience, Madras, the author said that in as much as the NCST was to meet in Delhi to-day the 29th to discuss and announce the fresh priorities in science and technology development, in light of the new Governments' commitment to direct efforts to development of rural areas, the discussion is on delicate ground. The Tamil Nadu Perspective Plan for Science and Technology, embodied in the report "Science in the Battle against Poverty" was linked to doubling of per capita income, reduction of social and economic inequality and elimination of un-employment through increased productivity. The objectives of this plan are largely in consonance with the approach outlined in the Janata party election manifesto—right to work and full employment, narrowing down of rural/urban disparities and technological self reliance. It is also reflected in the policy of the present AIADMK Government in Tamil Nadu. Regarding the policy for R & D funding, the present allocation

amounts to half percent of GNP as against one per cent envisaged by NCST. The funding to-date from central funding agencies has been directly to research laboratories. Under the modified arrangements a number of laboratories are being attached to user ministries. This is expected to bring about research oriented to social goals with greater attention to feasibility, techno-economic viability and cost-benefit analysis to determine resulting social good. In broad terms, the generation of relevant technologies, the author stated, consisted of three clearly articulated phases, namely, direction of technological change, technological change and economic growth and motivation for application of science and technology. In view of the drive towards rural uplift the technologies should be geared to answer immediate needs. Citing a specific example in the field of medical training, it was pointed out that the need of the hour was not specialists in cardiac and plastic surgery but a greater number of personnel with 2 or 3 years of training in basic medical care and elements of medicine to attend to a large rural population, now without health services. Similarly there appears to be very little need to divert funds to costly fundamental research in areas where the relevant technolgical products are available elsewhere or its application will be of no immediate value. Further, some changes in the socio-economic structure have to be implemented before scientific improvements in production techniques can take place; for instance, land consolidation is necessary before machinery like tractors can be used optimally. At national level there should be a clear cut policy for science and technology development and the decision structure should not be the responsibility of a single department of Government or of an individual. In the area of technical education, instead of the traditional divisions of civil, mechanical and electrical engineering, a regrouping on the basis of more practical categories like transportation, systems engineering, etc. in terms of functions is desirable.

During the discussion, it was observed that the paper represented an engineer's point of view. There is a good deal of change and reorientation by the new government in which some of the national laboratories have been transferred to the Ministries. It should be remembered that we have made a good start in scientific culture, which is in the ultimate analysis a way of thinking, reasoning and action built up from school and college to higher levels. In a large country like ours the development of fundamental research is a categorical imperative as we cannot afford to ignore the need for science studies. Since independence it has been a deliberate policy to make large investments in basic sciences. Therefore, the first emerging perspective is to develop science studies from the school stage. In the area of technological development a start has been made involving beginners' problems. A view was expressed that the transfer of laboratories to user ministries was no solution unless the laboratory concerned was unidisciplinary. For instance the CLRI has developed production technologies with application in various areas. It should be borne in mind that advanced research is as a rule multidisciplinary and multi-commodity. Citing the example of China it was pointed out that there was simultaneous development of simple technological applications and advanced nuclear and space technology. In regard to sophisticated skills in medicine, plastic

surgery could be used for repairing damage from industrial accidents and not restricted to cosmetology. There are only 5 hospitals with this facility in the country. Further, in determining technological priorities, care should be taken not to retrograde from relevant technology into appropriate or intermediate technology with its resulting danger of obsolescence. The goals emerging from the programme of the Janata Government for science and technology appear in some instance to be incompatible; for example more employment may be at the cost of greater output. The section of the paper concerned with the generation of relevant technologies is a valuable agenda for research rather than a prescription of policies. In the context of employment generation, a comment was made that it might be possible to create more employment. However, income growth does not necessarily follow. The task ahead is the identification of technological requirements in specific sectors and organised transfer of technology to meet these. The chairman in summing up observed that investment in technological development should aim at the uplift of the common man. There is a distinction between "Science" and "Technology", though both contribute to economic development. Regarding the status of scientific personnel, three levels are discernible, namely, students upto the post-graduate level, leaders of scientific thought and the middle level scientists. It was suggested that the middle level scientists could be better utilised in industrial and technological enterprises. Similarly in technological structures, three tiers exist—managerial levels, higher type of technologists and the actual working technicians. In our country we generally have managers and technicians in our enterpirses while there is a dearth of personnel in the group of higher type of technologists, which could be ably filled by middle level scientists. This would also relieve the pressure on the academic and research establishments.

Social Work Theory and Practice
Its Past and Future*

The Setting

This celebration of Four Decades of Professional Social Work Practice and Education in India is an important event for us of the academic world and for us as the people of India. It gives us an opportunity to look back with some degree of pride and satisfaction at our achievements on which we can build our future development in the field of social work theory and practice. Even more significant perhaps, it also provides us with a moment of introspection, of critical self-appraisal when we can look boldly at where we have gone wrong, what are the lacks, imbalances and errors that we have acquiesced in, so that we can chart our course ahead afresh with courage and knowledge of these negative elements. There is one rather curious feature in a non-professional like me being invited to join you, eminent social work specialists, in this important exercise. I suppose I have been invited to try my hand at this purpose of this celebration, on the principle in this case of ignorance being bliss. I shall use this my blissful state of ignorance in advancing a few propositions on the plus and minus sides of social work theory and practice as it has developed to date.

A Trained and Dedicated Cadre:

I start with some of our pluses, our achievements. A first achievement, looking back over the four decades since the far sighted decision of the Tatas to establish the first Graduate School of Social Work in Bombay in 1936, is the current spread of 30 Schools or University Departments of Social Work all over the country. Today social work is an accepted university discipline and it is, I believe, one of the few areas of knowledge which starts at the post-graduate level. Through these schools and university departments, thousands of trained professional social workers have been made available to the country and its 985 odd agencies and establishments that need them. In all fields of endeavour, because of the pressure of the problem of numbers, we face the serious issue of misemployment—the misfit of the square peg in a round hole. It may be that because of the motivation factor, (original or induced as result of the discipline's ambience and the education made available by the schools

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Extracts from the inaugural address by Dr. Malcolm S. Adiseshiah to the Seminar on Four Decades of Professional Social Work Practice and Education in India organised by the Association of Schools of Social Work on August 20, 1977 at the Madras School of Social Work, Madras.

which in turn results in a high 89 per cent of its students who want to make a career of social work), that I have found hardly any trained social worker without the competence and skill for the job and the informed motivation to set his or her hand to it—however tough the job may be. For giving the country this band of skilful, competent and devoted social workers, we should on this occasion pay our tribute to this discipline and to the schools and university departments that laboured at it.

Tradition Professonalised

A second achievement in the four decades has been the transformation of the instinct and tradition of service of the poor, the aged, the handicapped, the weak and the underprivileged in society into a professional service with a scientific theory that has been and is being slowly but surely built along with its outflow into practice. The tradition goes back to innumerable acts of individual and collective charity in which upto my mother's generation, we were steeped: weekly visitation of the sick in hospitals, acting as honorary non-official visitor to the central jail in Vellore, feeding the poor on the death anniversaries of my grandfather and grand mother, running voluntary milk distribution, child welfare and Red Cross services, serving as honorary magistrate in Juvenile delinquency cases, on to the establishment of *choultries* and *kanchithottis* (out of which one of our major hospitals and colleges, the Stanley Medical Hospital and College for instance was born), *dharmasalas* and old age homes. With this tradition, as in the case of my mother to whom I have just referred, were associated many known and unknown persons among whom we count Raja Ram Mohan Roy, Ishwar Chandra Vidyasagar, Maharshi Karve, Behramji Malabari, Moropant Joshi, Harbilas Sarda, Pandita Ramabai and Gandhiji. To move from this impressive, if somewhat oppressive tradition, to a differentiated theory of social work and social service is the major achievement of this discipline in the last 40 years. Helping people in need of help starts with the necessary good intentions, but if it is to be of real help it has to be backed up by knowledge and skill, which is what theory is, and we pay our homage today to the Social Work theoreticians who have laboured at this theory.

Disaggregatedness

Another achievement is that theory, knowledge and skill have been built in a differentiated and disaggregated manner. To speak of the needs of the poor or the weaker sections is good shorthand and may be even good political rhetoric, but there are no such general categories. I recall that when three years ago I proposed that we should in a seminar study who were the poor, there was a great deal of righteous indignation among my academic colleagues about the time and resources that were being wasted on a futile search for a definition of the poor, when all around us were the poor. But what was proposed was, to identify who are the groups who are living in poverty, where they are living, what they are doing or not doing for their living, what they are age, sex and education distribution was, so that programmes could be designed for each group to meet its specific needs. So too the achievement of social work theory has been, to identify and conceptualise the needs of and the action for different groups; labour, mothers, children, youth, women, the delinquents, the handicapped, etc. The

details of micro theory building for each of these subgroups and subclasses is a proud achievement of this discipline.

Multi-Interdisciplinarity

Fourth, it was social work which pioneered the multidisciplinary and interdisciplinary path for the social sciences. It was the social work theorist who was the first to put into a theoretical frame the realisation that social service calls for the skill of the biologist, the medical engineer, the social psychologist as well as the sociologist and statistician. Thus the typical faculty of a department or school of social work has come to represent an amalgam of the various social science disciplines, and it is this multidisciplinary analysis and team work and action that has come to distinguish this branch of knowledge. It is my hope that this rather unique feature of the social work faculties will not be lost in the new found enthusiasm for staffing the faculties in question with just specialists in social work. At the heart of the faculty and for its leadership is of course the social work specialist because he or she represents the prototype of interdisciplinarity to which all of us in the Social Sciences are striving. In my rather advanced age, I have come to the definition of any science as being what the scientist in question is and does. Looking into the skull of a social work scientist, I have come to realise that, at least for the present, all interdisciplinarity in the social sciences lies within the head of the individual scientist, and in this rather awesome fact I see that the social work specialists of yesterday—the Wadias, the Kumarappas, the Bulsaras—and those of today—the Gores, Ranades, Nairs, Ramachandrans, Georges *et al*—represent this new breed that out country needs for its true development.

Learning and Living

I would end this rather short and somewhat subjective inventory of the achievements of social work as a discipline over 4 decades with a reference to the synthesis that it has achieved between learning and living, between the world of contemplation and the world of action, between the idea and the actuality, between study and work. As we all know, this synthesis between learning and living is one of the burning issues that the education system in our country and in all Third World Countries is facing. It is in part a quest for relevance and in part a quest for concepts and frames which are valid. In the world of pedagogy, the issue has been joined recently in our country between what is called work experience and what is termed productive work. In the world of technology, some of us heard earlier this week, the Principal of our leading medical college in this city bemoan the fact that students after five years of study in his institution are able to graduate with an M. B. degree, without knowing how to give an inoculation or without ever having sutured a wound. In such an academic world, seeking for a methodology of learning which is grounded in the realities of living, where the necessary abstractions from reality, which all conceptualisation involves, have in turn to be tested in its outflow and crucible of that very reality, social work as a discipline has shown how theory and practice, the methodologies and frames and their application, can be synthesised. This is an important and proud sign post for all of education, as it gropes ist way back into the realm of relevance.

I now turn to some of the gaps in social work education and practice which, on the basis of what we have achieved to date, we should attempt to fill in the coming decades.

Remedy versus Cure

Social work theory and practice deals and deals effectively with some of the maladies and malodorous symptoms of our society, not their causes. For behind the exploited labourer, behind the child suffering from malnutrition and the gestating mother from undernourishment, behind the oppressed and discriminated scheduled castes, scheduled tribes and the backward classes, behind even some of our deviant and delinquent fellow citizens, stands our society with its unequal economic ownership rights and unjust social relationships. Social work can only develop its concepts and methodological frames on the casualties thrown up by such a society: it can do nothing about righting such a wrong society. Sometimes the relevance of the social worker in relation to the basic causal factors of our iniquitous society, reminds me of the relationship of the assassination of Archduke Franz Ferdinand of Hapsburg to the World War I which followed, or that of the *Allahabad High Court Judgement* on Mrs. Indira Gandhi to the Emergency that she later ordained. I have an uneasy feeling of irrelevance of much of social work theory and practice in relation to the real ills of our society and the cure needed, namely, the cure of a society of equality and justice. From this point, I am inclined to give the professional social worker the same kind of advice I gave my experts in UNESCO when I recruited the first group and launched UNESCO's *Technical Assistance* Programme in July 1950. I then defined the success of an expert as being measured by the briefest time span he spent in working himself out of his job, so that a national can take over his job. And so I would call on the Schools of Social Work to give some time to studying the structure of factors of ownership and assets distribution in our society and the lopsided decision-making networks flowing from them along side of the professional training and practice in social work education and *praxis per se* that they are engaged in. I would also hope that such study will enable the social worker to work intelligently and with dedication alongside of others committed to organising the poor, the exploited, and the disadvantaged to fight for their rights so that the time may soon come when the social worker as we know him or her today (as a first aid ambulatory service) would no longer be needed and would have worked himself or herself out of a job. We will then have a new kind of social worker in a new society. That is, with a restructured society which a continuing struggle against the *status quo* can and will produce, the social worker will be advancing social goals in a positive and promotive sense, and be at the disposal in such a society of the few distressed individuals to channel the community resources available and requiring only such channelling. Such an equalitarian society of sufficiency and the recognition of social work service within such a society is an attainable end that I would like to place before you for the next decades.

Second, our schools of social work arose as noted earlier from certain historical circumstances—the vision of the Tatas, the conviction and skill of Manshardt, the largest urban-industrial complex of the country that Bombay represented in the

thirties. Social work has thus devoted itself to correcting the ills and distortions imposed by the city urban agglomorates and their industrial culture. In time, however, and today, there has developed a national consensus that in our country the subject and object of all development and therefore of social work and social service is the rural countryside, where 80 per cent of our people live, around three quarters in conditions of poverty and destitution, contributing despite their marginal existence to 60 per cent of our employment, with over a third of them seriously underemployed and hence illiterate, undernourished and subject to various diseases, and providing 50 per cent of the total national income of the country, instead of at least half more of that, as does our neighbour, China, which is the only country which is comparable to our own. In this situation of the emerging agreement on rural development as being the national priority, there is a very real danger of our schools of social work and their teaching, training and research programmes becoming marginalised, if not regarded as not very relevant, if they continue with their urban industrial complex preoccupation. Today professional social work and trained and skilled social service—together with its antecedent or *post hoc* theory building—are needed to take care of the problems of the small, marginal and drought prone farmer, the landless agricultural labourer, the unschooled and undernourished rural child, the women who without employment and facing all kinds of discrimination have to keep the family together and the youth who are facing the frustration of mis-education and non-employment. Today it is the Small Farmers Development Agency (SFDAs), Marginal Farmers and Agricultural Labourers (MFALs), PHCs, co-operatives and rural regional banks, the *panchayat* councils and municipalities which need the skills and know-how of the professional social workers, even more than the personnel departments and labour welfare sections of our industrial firms, the psychiatric and artificial limbs departments of our city hospitals or the correctional services of our urban administrative systems. It is this call of the rural poor, of the vulnerable, weak and exploited people of village India where the real India lives, that calls for a thoroughgoing recasting and restructuration of the concepts, methodologies, frames and techniques of social work theory and practice as a discipline in the coming decades.

Front Line Workers

Such a restructuration involves a complete overhaul, a wholesale reconceptualisation of the social work discipline, not the kind of adaptation and tinkering that is tried out, in referring to social work techniques as universal all-purpose techniques that can be adapted to any situation. Let us frankly recognise that our present conceptual frames and professional methodologies arise from a highly urbanised industrial environment. We have to think through and conceptualise the completely different rural environment and its social work imperatives. And in the process, I feel that we need quite a variety of variegated levels of social workers. The average MFAL, SFDA, PHC or *Panchayat* Union needs not a researcher or a trainer of trainees, but a front line social worker who can use his skills in the problem situation that he faces. This means that in the coming decade, we would have to design a Bachelor level course for such front line social workers. The content of that course must be such as to prepare the BA

in social Work for working with his hands and head both with the rural people in need of his sciences and with his professional colleagues in agriculture, health, family, planning, sanitation and education. Equally, he should be skilled in identifying issues which should be forwarded to the referral services for further study, research and analysis not available to him locally. The need for the future is for such front line professional social workers—that is, in educational terms, for a first level degree.

Deprofessionalisation

Finally, I would like to express my slight disquiet at the increasingly closed shop atmosphere that is developing among professional social workers and schools of social work, somewhat like what has developed with regard to the medical, architectural, accounting and cost accounting professions. In part, it is this trend towards the closed shop professionalisation which is giving rise to the demand for the barefoot doctor, the barefoot architect and barefoot engineer and might soon also result in the demand for the barefoot social worker. But the case for some degree of deprofessionalisation rests on much wider and more insistent grounds. The skills of the social work professional are needed not only for the rural poor who constitute the majority of the country, the skills are needed in schools, colleges, and universities in discharge of their community and national service obligations, among the medical profession, agriculture and health extension agents, in fact, over a wide range of other occupations and programmes. Here I have two suggestions. First, I believe the time has come to provide for part-time first and second degree courses in social work, so that professionals employed in other areas might be equipped with the conceptual frames and methodological tools of social work. Second, I also think the time is ripe for a diploma course in social work, both for those who at the village and town levels are called upon to undertake the tasks that are one part of the work of the social work professional as well as for those who need this skill in the work that they are now doing. I invite your attention to the increasingly pressing demands for a wider network of professionals, semi-professionals, non-professional and community workers and assistants in rural and urban areas, who need this part-time or diploma type education and training in social work.

Inauguration

I began by saying that I wondered whether you realised the risk that you were running in asking a non-professional like me to join you in your opening celebrations. I have made bold to pass on to you some of my reflections because of the confidence that you inspire in me and in the country through your solid achievements over the last four decades. And it is in that faith and courage in the vistas opened by further future decades of social work theory and practice that I inaugurate this Seminar on Four Decades of Professional Social Work Practice and Education in India.

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