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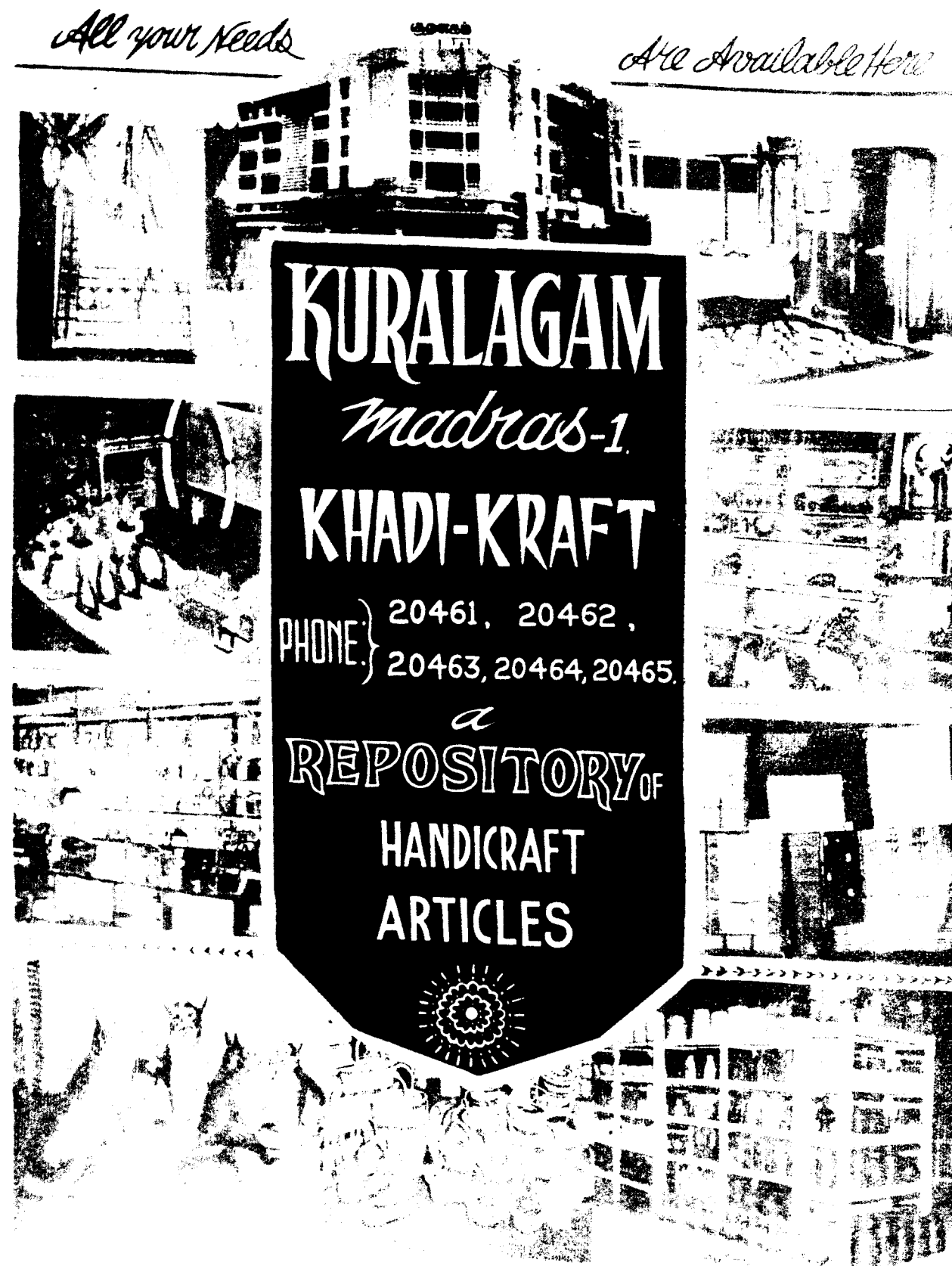
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its assuming powers—schemes that are designed to ensure the reach to the largest number of people.

Laudable Efforts

The birthday gifts of Chief Minister Karunanidhi are an extension of this approach. While the Government could introduce a number of welfare measures such as slum clearance, ensuring drinking water to all the villages, allotment of land sites to the agricultural labour and the like, there were many social welfare schemes which could not directly be charged on the exchequer. Since the excellent organisational frame work of the DMK Party lent itself to a facile collection of large funds from the public, Karunanidhi pitched upon the idea of collecting these for specific welfare measures to be initiated as part of his birthday celebrations.

Beggar 'Hatao'

The beggar rehabilitation fund was introduced on this principle on the



The photo picturing the Chief Minister and his Cabinet colleagues and a cross-marked hand-pulled rickshaw and Cycle-rickshaw symbolises the change in the line of socialistic attitude and activity of the State Government.

48th birthday of Karunanidhi with nearly a crore of rupees collected within a short time. The scheme has the laudable object of rehabilitating the leprous and other infirm beggars scattered all over the State in new homes built

specially for them at different parts of the State. This measure has been a reasonable success. If it is pursued, if necessary, with supplementary grants from the Government, a definite date line may be fixed for the total elimination of beggars in the State.



The first recipient of Cycle-rickshaw — a free presentation to hand-rickshaw puller — at the hands of the Chief Minister on 5th June 1973.

Ninty Free Eye Camps And 40,000 Operations

For his 49th birthday last year Karunanidhi announced the organisation of free eye camps where eye operations would be carried out by expert surgeons at the various parts of the State and free spectacles would be provided to the poor. It is gathered some 40,000 persons had been operated upon so far in the free eye camps conducted in the last one year. The nintieth of these camps was conducted at Madurantakam early this month. The incidence of eye illness is indeed large in tropical countries. Due to many factors including malnutrition and lack of adequate eye care, myopia, cataract and the whole range of eye diseases are all too common. No wonder this

scheme of the Chief Minister also proved to be quite popular.

A Tyranny of Six Decades :

For the 50th birthday celebrated on June 3, 1973, Karunanidhi pitched on yet another equally laudable scheme—the abolition of hand pulled rickshaws in the State. Though no precise data is available on the introduction of this mode of conveyance, available records indicate that these were in vogue as early as 1911. It is gathered some 2,000 hand rickshaws are in operation in the whole of Tamil Nadu. Of these 1,294 ply in the city. The cost of replacing these hand rickshaws by cycle rickshaws is estimated at Rs. 20 lakhs. This amount has been raised and handed over to Karunanidhi on June 3, 1973 and as in the earlier cases, collections are bound to be considerably larger than the target set.

In an impressive function held in the Government Estate opposite to Rajaji Hall on June 5, 1973,

three hundred and one rickshaw pullers received gift cycle rickshaws from the Chief Minister.

The scheme is imaginatively conceived. A licensed puller, who does not own a vehicle, would be presented with one free of cost. The owner of hand rickshaws, who had to surrender the vehicles, will be compensated through liberal bank loans to buy cycle rickshaws. For each hand rickshaw surrendered at the traffic police office, Rs. 200 is paid as compensation. It is gathered that each hand rickshaw thus surrendered will get only around Rs. 25 as its wood value. Before the end of this month another 406 cycle rickshaws would be distributed. Before September 15, the birthday of C.N. Annadurai, the hand rickshaws in the State would completely be replaced by cycle rickshaws.

A Symbol of Social Injustice :

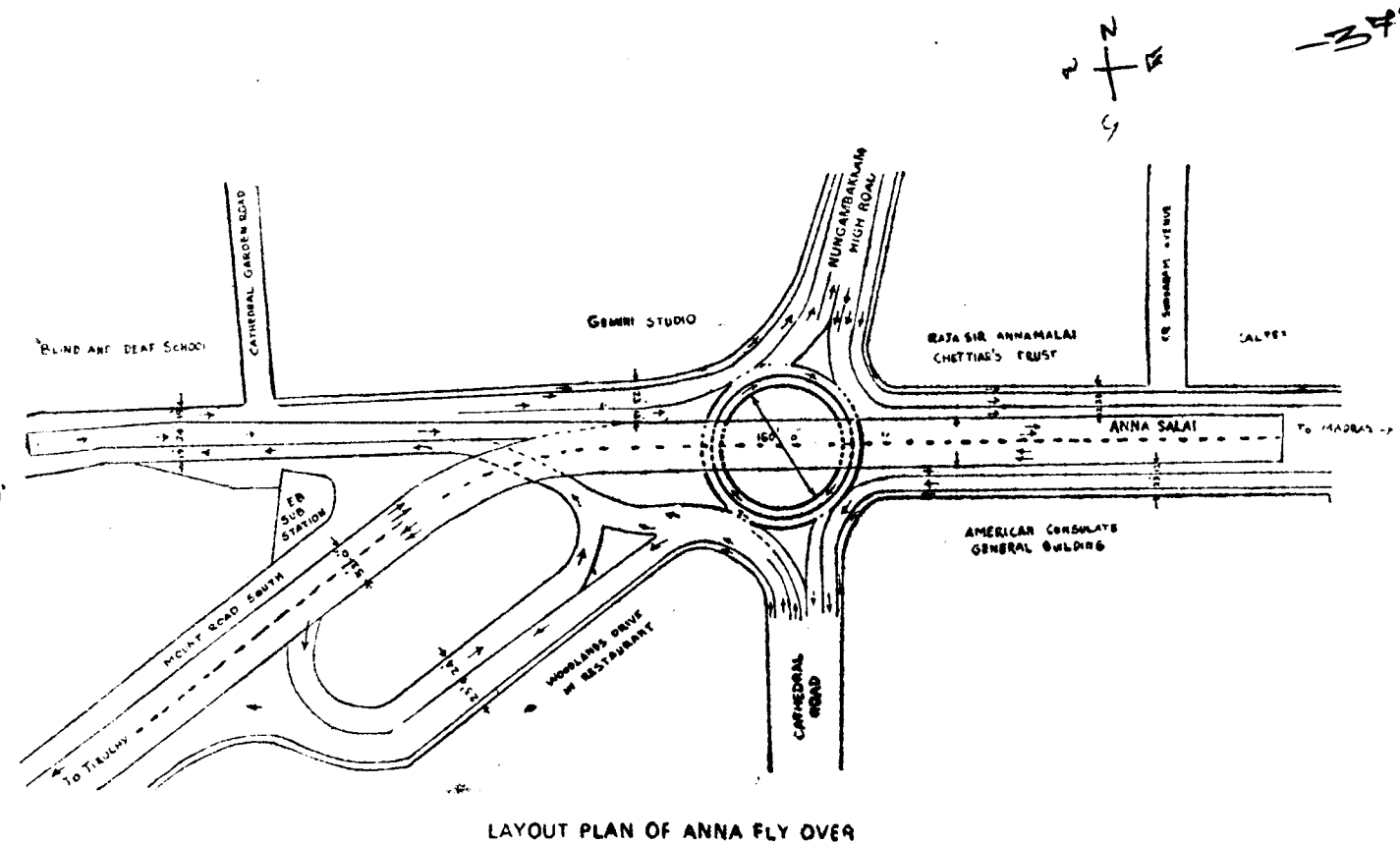
The hand drawn rickshaw was certainly a symbol of social

injustice. As Education Minister Nedunchezian pointed out at the function, none had the imagination to abolish it till now. For removing this injustice, Karunanidhi and his party deserve congratulations.

Facile Collections :

The more interesting aspect of the scheme is the facile manner in which funds are raised. There are of course complaints about the element of coercion employed at certain levels by commercial tax officers and the like. When similar or worse tactics are employed for collection of funds for far less important things such as raising party funds or for the holding of some seminars, which are of interest to a very few, one finds, even when such means were adopted, they could be excused in the light of the end envisaged. One should wish many more birthdays for Karunanidhi each intended to initiate some good scheme or other for the poor and the downtrodden.

ALL ABOUT THE ANNA FLY-OVER



LAYOUT PLAN OF ANNA FLY OVER

The round about at Gemini corner of Anna Road is an important road junction in the city of Madras where as many as 9,000 vehicles per hour pass through during the peak period of the traffic at this junction. Signal systems were in operation to regulate the traffic at this junction. But the traffic hold-up was unduly long and so a solution for providing a regulated and also an uninterrupted flow of traffic became very essential. Hence this Fly-Over-Cum interchange.

The main fly-over is of 4 lanes width, 2 lanes each for up and down traffic in the Anna Road, the main artery at the Junction. In addition,

there is an access ramp of 24' width from G. N. Chetty Road to join the main Fly-over and also a down ramp from the main fly-over running on a "clover leaf" leading to G. N. Chetty Road under the fly-over at a suitable point. All the traffic turning to left are accommodated in the 4 service roads provided at the corners of the junction. The straight traffic on Cathedral-Nungambakkam High Road and right-turning vehicles make use of the rotor of 150 feet diameter under the fly-over at the point of intersection. The pedestrians and cycle traffic make use of the extreme lanes of service roads and suitable crossings have been provided for them.

HAPPY HOMES FOR THE HAPLESS



A Leprosy Beggar Rehabilitation Home—48th Birthday gift of the Chief Minister to the unfortunate leprosy afflicted brethren of the society

INDIA'S BIGGEST FLY-OVER COMES INTO USE

ANNA FLY-OVER AT GEMINI INTERSECTION

IN MADRAS CITY

A Fly-over differs from an Over-bridge in the strict technical sense that the former provides an additional tier of road-way usually of long lengths, obviating the delay and difficulty due to cross-traffic, while the latter just bridges an intervening gap like a railway line or a water-crossing. Fly-overs are thus a rapid means of road communication system in metropolitan cities and are widely used in countries like Germany and England in the West and Japan in the East. But our country is yet to make any rapid stride in this direction. The Fly-over, just completed at Gemini Intersection, is the first of its kind in our State and the third in the country, counting two "mini-fly-overs" at Kemps corner and Marine Drive in Bombay. However it will be the longest in India as at present.

The Madras metropolitan area is the fourth longest urban concentration in the country with a population of 3.1 million in an area of 1,180 sq. k.m.

The Gemini Roundabout on Anna Salai is the most important road junction in Madras city with a continuous flow of traffic from morning till night. This intersection is very close to another intersection of Anna Salai and Lloyds Road on the north; Anna Salai and Gopathy Narayanasami Chetty Road on the south and Kodambakkam and Nungambakkam High Roads on the west of Gemini Studios. During peak traffic hours, when as many as 9,000 vehicles pass through the intersection, there is locking up of traffic resulting in traffic congestion and traffic hazards. Signal

system that was in vogue, no doubt, helped to a certain extent the regulation of traffic, but the traffic hold-up was unduly long and vexatious. So it became absolutely necessary to provide continuous flow of traffic at this junction by means of a Fly-over-cum-Interchange in the interest of not only the individual motorist but also of the nation in the matter of transportation cost and economy.

The Fly-over-cum-Interchange, now completed at Gemini Intersection, consists of a main wing, running from north to south of Anna Salai of four lanes 48 feet wide, 1,599 feet long. Two lanes will cater to straight traffic on Anna Salai from north to points south of Gemini Circle and two others to north-bound traffic at the roundabout. An access ramp 24ft. width has been provided on Gopathy Narayanasami Chetty Road to link up with the main Fly-over, just south of the intersection.

Vehicles coming down from north to Gopathy Narayanasami Chetty Road will take the left extreme lane of the Fly-over and then branch off into an elliptical path called "Clover-leaf" linking up with Gopathy Narayanasami Chetty Road at ground level through a longer span provided for the purpose in the main Fly-over.

SERVICE ROADS LAID

Service roads have been laid on the four corners of the junction to cater to the needs of the left-turning vehicles. These roads vary in width from 19' to 35' depending upon requirements of traffic. In addition, a central rotor of 150' diameter, is also put up at the junction, providing a two-lane roadway around in order to accommodate the straight traffic on Nungambakkam-Cathedral roads both ways and the right-turning vehicles also go around this circular island weaving in with straight traffic in east-west direction. Foot paths and cycle-paths have been provided in the four service roads with suitable crossing zones about the intersection. This Fly-over is solely intended for fast-moving traffic and all other vehicles are to use only ground level roads. Several traffic islands also have been constructed at the required places for the proper segregation and safety of traffic.

The proposal for constructing a Fly-over at Gemini junction was mooted out by the Highways and Rural Works Department as early as 1960 and it has become a reality only in 1973. After long thought-out study of a number of plans in the light of reduction of cost of the Fly-over with good traffic effect, the Government reviewed the position and accepted the proposal and the Fly-over had taken the shape of what it is seen today.

The work was also programmed to be carried out in three stages, viz.—

- (1) Western half of Main Fly-over and access ramp on Gopathy Narayanasami Chetty Road,
- (2) Portion south of junction in the eastern half and the clover-leaf and
- (3) The balance of eastern half of main Fly-over.

The design and planning of the entire scheme has been done to facilitate the construction and the phasing of work in such a way as to help the movement of traffic without any undue and long diversion from the junction. This has resulted in savings to an extent of 4 to 5 lakhs, that would have been otherwise spent on improvement and maintenance of long diversion routes.

Avoidance of main sewers along Anna Salai became possible by adopting shallow but wide raft foundations and the column footings have been so staggered as to avoid 36" water main crossing the junction from west to east. Other services and man-holes have been suitably dealt with either by shifting them from the area of foundation or footings have been redesigned.

Foundation of shallow type, unlike other major bridges in the State, have been adopted in this case not only with a view to avoid the major services passing underneath, but also to facilitate easy and quick construction that has accelerated the time of completion to a very great extent. Each column of 36" diameter is supported on a raft foundation of size 20' x 10' thereby helping the total load on each column to be very near the bearing capacity of the soil, viz., 1.2 tons/sq. ft. The clayey nature of soil to a considerable depth is another factor against adopting deep foundation in this case.

The limiting factor of low bearing capacity of the soil is also responsible for adopting the short but most economical spans of 34'-9" each from centre to centre of column and also the multi-beam perforated deck, thereby considerably reducing the dead load on foundation. It is also incidentally to be pointed out that the use of hollow-beam deck for a road-bridge is the first of its kind in India. This perforated deck comprises of both pre-cast and in-situ units. The precast portion is laid in the form of Tamil letter "L" and thirteen such beams were hoisted by means of a Gantry, locally made and placed in position side by side and propped up, before in-situ concrete was laid to for the perforated deck. The top and bottom slabs of the deck are 6" and 3½" respectively and the vertical connecting rib is 7" thick, but the end verticals have got 12" thickness. The individual box, thus made, measures 24" wide and 27½" deep.

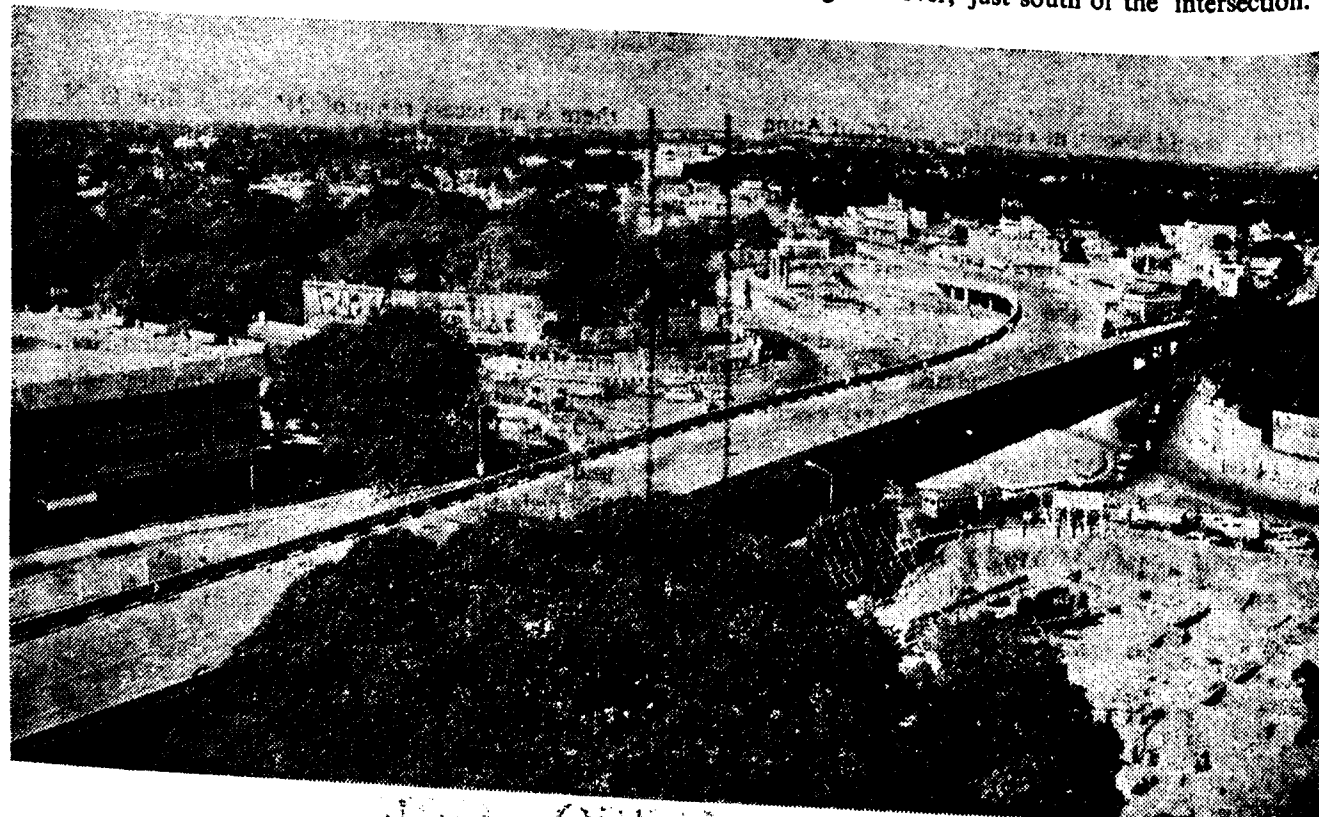
The concrete used for the entire construction is of special grade with a strength of 4,500 pounds per sq. inch after 28 days curing. This multi-beam deck rests on either side on the projected ends of cross-beams, over "Neoprene" pads 6" wide and 26' long. Neoprene is a material that has been recently introduced in bridge construction. These bearings do not yield under pressure but allow movement of deck, though imperceptible, at either ends. This sort of "articulation" joints of the deck considerably reduce the "shock" from the deck to the cross-beam due to impact of moving loads. The cross-beam is also connected to with columns by means of hinges and mortar pad to reduce the movement on the column. The cross-beam has been suitably placed from the inner end to the outer in the curved portion of Fly-over, so that decks in all spans may be of equal length.

The super elevation required for the curvature in the portion of Fly-over has also been effected by suitably increasing the height of cross-beam from the inner end to the outer. There is a separate cross beam for each half of Fly-over supported on two columns, 12' apart from centre to centre with an overhang of 7' on either side.

The wearing coat for the entire roadway on Fly-over had been changed over to Asphalt concrete wearing coat from cement concrete as the latter with a number of joints filled with bituman might not provide a smooth riding surface. This Asphalt wearing surface is specially designed for the Fly-over with non-skidding and non-creeping characteristics. P.V.C. water stops also have been used for construction joints and also to prevent water from seeping through the "articulation" ends of the deck.

Drainage arrangements are made by providing opening in the kerb and water taken into the drainage gallery within the kerb and on to A.C. out-let pipes inserted into the deck and attached to the column.

The main Fly-over consists of both trestle and non-vented portions. This trestle portion, of length 1,112' has got 30 spans each 34'-9" centre to centre and one span of double its length. This longer span is intended to allow the traffic coming from



Panoramic view of Anna Fly-over at Gemini Intersection

"Clover-leaf" to Gopathy Narayana-swamy Chetty Road at ground level. Of these 31 spans, central 15 spans from level portion on Fly-over with a vertical clearance of not less than 16' 6". The Fly-over is sloping at a gradient of 1 : 25 for 8 spans on either side. This main Fly-over has further got solid fill ends for a length of 260' on the north and for 227' on the south.

Appropriate provision in the construction of this Fly-over for its extension on either side in future is also provided. Accordingly, in the sloping spans, eight on either side,

the cross beam has been connected to the columns by means of a pin with a Neoprene pad in between, so that the entire deck with cross-beam can be jockeyed up to level, columns raised and Fly-over extended. This arrangement also would not have been possible in the originally accepted proposal.

This entire Fly-over complex has been planned, designed and constructed entirely by the Highways and Rural Works Department of Tamil Nadu Government through the contracting agency Messrs.

East Coast Construction and Industries. 901 metric tons of steel and 3,765 metric tons of cement have gone into the making of this Fly-over. The work has been completed in a period of 21 months which is by no means a small achievement in the face of great many odds met with. The limited space available at this crowded junction has compelled to sacrifice a little of standards but in so far as it is a maiden attempt, it can be fairly judged as a success and is a fore-runner for many more Fly-overs to come in the city and elsewhere.

PORTFOLIOS OF TAMIL NADU MINISTERS

The following are the portfolios of the Tamil Nadu Ministers as redistributed from July 2 :—

Dr. M. Karunanidhi (Chief Minister): Public, Finance, General Administration and Police.

Dr. V. R. Nedunchezian (Minister for Education): Education including Technical Education, Official Language, Legislature, Tourism and Tourist Development Corporation.

Thiru K. Anbazhagan (Minister for Health): Public Health, Medicine, Tamil Nadu Drainage and Water Board and Town Planning.

Thiru N. V. Natarajan (Minister for Backward Classes): Backward Classes, Information and Publicity, Registration, Ex-servicemen, Prosperity Brigade, Youth Service Corps, Bhoodan and Gramdan.

Thirumathi Satyavanimuthu (Minister for Harijan Welfare): Harijan Welfare, Women's and Children's Welfare, Fisheries, Beggars' Homes, Orphanages, Approved Schools and Vigilance Services, Indian Overseas and Refugees and Evacuees, Newsprint Control and Passports.

Thiru P. U. Shanmugham (Minister for Public Works): Public Works, Minor Irrigation including Special Minor Irrigation Programme Works, Highways and Ports.

Thiru S. Madhavan (Minister for Industries): Industries, Handloom, Law, Courts and Prisons.

Thiru S. J. Sadiq Pasha (Minister for Revenue): Board of Revenue, District Revenue Establishment, Deputy Collectors, Commercial Taxes, Prohibition and Excise Revenues and Waqfs.

Thiru Si. Pa. Adithanar (Minister for Agriculture): Agriculture, Food Production, Agricultural Engineering Wing and Animal Husbandry.

Thiru A. P. Dharmalingam (Minister for Local Administration), Municipal Administration, Community Development and Panchayats and Panchayat Unions.

Thiru Mannai P. Narayanaswami (Minister for Food and Co-operation): Food, Co-operation and Agricultural Refinance.

Thiru K. Rajaram (Minister for Labour): Labour, Housing and Accommodation Control, Legislation on Weights and Measures, Statistics and Slum Clearance Board.

Thiru O. P. Raman (Minister for Electricity): Electricity, Forests and Cinematograph Act.

Thiru S. Ramachandran (Minister for Transport): Transport, Nationalised Transport, Motor Vehicles Tax, Stationery and Printing and Government Press.

Thiru M. Kannappan (Minister for Religious Endowments): Religious Endowments, Khadi and Village Industries and Rural Industries Project and Milk.



The President seeing the exhibited Tamil books along with the Tamil scholars of note

"Thirukkural not only contains the best of poetry and pearls of wisdom, but gives practical guidance to the people in the art of living. As such the message of Thiruvalluvar, though nearly 2,000 years old, is essential and inspiring and shall continue to guide the people of this land for centuries to come.

"I believe it is the universalistic and unifying quality of Tamilian spirit that is responsible of the greatness of Tamil literature. The language stands absolutely unique among the world's languages for length and continuity of life".

—V. V. GIRI,
President of India.

TAMIL IS UNIQUE

"Tamil contains the best of Poetry and Pearls of wisdom but gives practical guidance to the people in the art of living" said Thiru V. V. Giri, President of India while inaugurating the All-India University Tamil Teachers' Conference at Madras on 20th June, 1973.

"I am very happy to be here in the midst of eminent Tamil scholars and inaugurate the 5th Conference of the All-India University Tamil Teachers' Association. It is fitting that this Conference of Tamil scholars from all over India is being held in the Presidency College where renowned Tamil servants like Dr. U. V. Swaminatha Iyer and Prof. C. R. Namasivayya Mudaliar have adorned the Tamil Chair.

"The advanced Research Centre for Tamilology, under whose auspices this conference is held, was inaugurated by my esteemed friend Thiru K. K. Shah, Governor of Tamil Nadu, during the last academic year and I am glad to know of the progress it is making. I hope that this Centre in this premier educational institution will grow from strength to strength.

"It is a matter of gratification that All-India University Tamil Teachers' Association has been constituted purely for academic purposes. The primary aim of this Association is to promote Tamil Research in a scientific manner. No doubt traditional Tamil scholars are known for their learning and mastery of details but in modern times constant efforts should be made to infuse the scientific spirit in language research and development.

EXCHANGE OF IDEAS

"This Association serves an eminently useful purpose of bringing together all the Tamil scholars in India. Incidentally, I believe this is also an excellent way of promoting national integration. Scholars from places like Delhi, Trivandrum and Mysore and Tirupati, should meet often and exchange ideas in their respective fields. In this way co-ordination of research work on Tamil language and literature could best be achieved. The research findings of scholars in every nook and corner of India should be made available to all the students of Tamil so that Tamil literature may spread far and wide and reach the intellectuals the world over. This will pave the way for a comparative study of Tamil literature with that of other modern languages.

WELL - MAINTAINED LITERARY TRADITION IN TAMIL NADU

"Tamil Nadu from times immemorial has always given a pride of place to its literatures. Such a tradition has been well maintained, thanks to the successive writers through different centuries who have made a signal contribution not merely to the enrichment of Tamil but for providing an impetus to the people of this land to make their lives sublime. I would like to quote the example of Thirukkural. It not only contains the best of poetry and pearls of wisdom but gives practical guidance to the people in the art of living. Thiruvalluvar does not merely dwell on high philosophic issues, but provides the norms and values that can be fruitfully followed by every householder. The message of Thiruvalluvar, though nearly 2,000 years old, is essential and inspiring and shall continue to guide the people of this land for centuries to come.

STRENGTH OF TAMIL LANGUAGE

What has contributed to the strength of Tamil literature? I believe it is the universalistic and unifying quality of the Tamilian

spirit that is responsible of the greatness of Tamil literature. The language stands absolutely unique among the world's languages for length and continuity of life. It is both a classical and a modern language. Great names like that of Kamban and Elango adorn the firmament of Tamil literature. The depth and range of this literary heritage is matched only by its depth, catholicity and universalism. Centuries ago, a great Tamil poet of the Sangam Age proclaimed: "The world is my village and all folk are my friends". The same message of universalism is emphasised by Thiruvalluvar who said "He alone lives who knows that he is one with all. The rest have the place among the dead". Dr. Pope had rightly called Tamil as the language of devotion. The Bakthi literature of Nayanmars and Alvars is something unparalleled in its devotion combined with musical charm.

BHARATI A SOURCE OF INSPIRATION

"Coming to recent times, Subramanya Bharati, another valiant fighter in the cause of India's political and economic emancipation aroused national consciousness by the eloquence of his poetry. His patriotic, and philosophic poems constitute one of the finest collections ever written anywhere. The lofty ideals which Bharati pursued and kept before the writers of his times, the vibrant thoughts of his poetic compositions and the manner in which he lived upto them continue to be a source of inspiration to the writers even today. It is for the men of letters and the intellectual leaders to recapture the dignity, the mission and destiny of our ancient land and engender an invigorating climate of ideas which will lay the foundations for a new social order."

GROWTH OF INDIAN LANGUAGES

"One of the significant happenings of recent years is the growth of our Indian languages. They are coming into their own and with care and devotion we can make them effective vehicles for conveying modern scientific and technological thought.

Mother-tongue as the medium of instruction in our schools and colleges is our accepted policy. It is also gradually becoming the language of administration and law courts. Thus, Tamil and other Indian languages have a great future ahead of them. In my view, there is no room for any meaningless language controversies. We must concentrate on the constructive work of developing our languages. It is by hard and sustained work that we can make our languages serve the needs of a modern progressive society."

Collection Bonus in Pallavan Transport Corporation

A review of the system of awarding bonus out of daily collections to the crew of Transport Corporation buses has revealed a sea-change in passenger-crew relations on the one hand and has improved total collections on the other. It is said that in most routes the driver and conductor each is able to earn about Rs. 5 per shift.

The daily collections of the Pallavan Transport Corporation have increased by Rs. 36,000 to Rs. 3.48 lakhs following the extension of the "collection bonus" scheme for the bus crews to all the ten city and three mofussil depots from June 1.

Pallavan Transport Corporation managing director Thillainayagam, who disclosed this on Monday, said the scheme was a "grand success" and there had been an appreciable change in the attitude of busmen.

The scheme has also helped to bring down the number of trip bus from 2,200 to 11,08 a day. Break-downs has dropped from 160 to 82 a day.

The Pallavan Transport Corporation also proposes to reduce the stage distance in the city between 1.5 km. and 2.5 km. to the present 0.98 km. and 3.7 km.

Improve- ment of School Education in Tamil Nadu

The syllabi now adopted in our schools were last revised in 1965. Realising the need for a constant review of the content of the syllabi and for up-to-dating the system of instruction, the Government constituted committees in December 1970 for revision of the entire school syllabi. The draft revised syllabi finalised by these committees for Standards I to V were published in November 1971 and those for Standards VI to VIII in January 1972.

Re-training the teachers cost Rs. 40 lakhs.

The revised syllabi were introduced from the academic year 1972-73 in Standards I to V in all subjects other than Mathematics and Science. The revised syllabi for Mathematics and Science lay emphasis on problem-centred and activity-centred programmes. They will be introduced in these standards from 1973-74. The teachers who are to handle the subjects have already been given special training to equip them adequately. A massive in-service training programme was conducted in Teacher Training Institutes in the State during 1972-73 at a cost of about Rs. 40 lakhs, and 58,500 teachers will get retrained before June 1973.

In order to provide a permanent machinery for curriculum development, a Curriculum Development Wing has been set up in the State Institute of Education. It will engage itself in curriculum research, development of teaching materials, etc., and will work in close collaboration with the State Evolution Unit.

English Language Teaching Campaign :

Tamil Nadu is the only State in South India where English is being taught as a second language from III Standard onwards. A massive programme of in-service training for teachers of English in Primary Schools has been organised in collaboration with the British Council. During the past six years, about 8,000 teachers have been trained in English teaching at the Madras English Language Teaching Centres at Palayamkottai, Coimbatore, Thanjavur and Cuddalore. Besides these training courses, seminars and workshops are also being conducted periodically. Twenty-five

candidates from our State are deputed to the Regional Institute of English Studies at Bangalore.

With a view to strengthening the teaching of English from the very beginning, reading and writing in English were introduced from Standard III onwards with effect from 1972-73. The Text-Book Society brought out a new Reader for Standard III in 1972-73. A Teachers' Hand Book was also published.

Examinations :

Educational experts all over the country have underlined the need for immediate reforms in the examination system. It is Government's desire that the consensus among educational experts on this problem should be the guide in implementing the necessary reforms in the examination system. The recommendations of certain All-India Level Committees on Examination Reform have also been received and they are under examination. A State Evolution Unit was set up in 1971-72 to improve methods of educational evolution. It is now preparing a comprehensive programme of examination reform both at the external and internal level. A scheme of total assessment of pupils was introduced on an experimental basis in 12 city schools. The question of extending it to 200 schools in the neighbouring districts is under consideration.

Library Movement :

Tamil Nadu is one of the few States in India which have enacted a Library Act and are giving continuing support to the Library Movement. There are now 13 District Central Libraries, 1,437 Branch Libraries and 1,882 Delivery Stations in the State. Local Library Authorities have also introduced the mobile library service, home delivery of books, library service for children and women, for tourists, for prisoners and for police personnel and a hospital library service.

Sports and Physical Education :

Educational institutions in our State continue to attach great importance to the promotion of physical education and sports. District and State level sports meets are organised

periodically. The State Sports Council and the District Sports Councils render valuable service for the promotion of sports and games, not only among the students but also among the public. The need for popularising sports in the rural areas calls for our special attention and it is hoped that the organisations concerned with this will apply themselves to this very vital and pressing task.

The State Government are providing grants for the construction of sports stadia in the districts. So far grants have been given to the districts of Tiruchirappalli, North Arcot, Salem, Madurai, The Nilgiris, Chingleput and Kanyakumari. For 1973-74 also a sum of Rs. 2 lakhs has been provided for assistance to two

districts for the construction of Stadia. Besides this, the State Government have sanctioned a special grant of Rs. 15 lakhs to the Madras Cricket Association for the construction of a modern stadium at the Chepauk grounds and a sum of Rs. 12 lakhs has already been disbursed.

MEDICAL CHECK UP.

A pilot Project for medical check-up has been introduced in the City of Madras for about 5,000 pupils in elementary and secondary schools in the City. In the districts of North Arcot, Salem, Coimbatore, Tiruchirappalli and Madurai, Mobile medical vans with a qualified physician visit schools and do medical inspection. The scheme is financed by the special fees collected for Medical Inspection.

In order to encourage and carry out a programme of internal assessment of students to get them interested in physical education, games, etc., the Education Department has set up a State Evaluation Unit in Madras. Further the Education Department has put across to the teachers and headmasters all over Tamil Nadu a new concept to study the aptitudes and abilities of pupils through internal assessment.

Computers have been in use from last year for S.S.L.C. Examination result. This year the method is expected to help the department in a different way. From now on, computers are to be used to name the backward school in a backward area of a backward district.

Mobile Science Labs. Take Science Teaching To All Schools.



The Education Minister Thiru Dr. V. R. Nedunchezian seeing the Mobile Science Laboratory van model.

MEDICAL EDUCATION IN TAMIL NADU

logy, Micro-Biology, Mid-wifery, Dermatology, Radio-therapy, etc., are conducted in the Medical Institutions in this State.)

Out of the Fourth Five-Year Plan out lay of Rs. 433 lakhs for Medical Education, Rs. 380 lakhs are for the extension-cum-completion of the new Medical Colleges at Chingleput, Tirunelveli and Coimbatore. It may be noted that the construction of buildings for the new Medical Colleges at Tirunelveli, Coimbatore and Chingleput and also the construction of buildings for men and women hostels for these institutions have been completed and a few items that are pending will be finished before the end of 1973. Certain additional facilities like provision of Cold Storage Plant, Animal House, Glass Blowing Room, etc., and also Mortuary for the Tirunelveli Medical College are nearing completion. During 1973-74, additional building works like the construction of Hostel facilities for Sanitary Inspector Trainees in Chingleput Medical College, a 100 bedded ward in the Coimbatore Medical College Hospital water-supply arrangements for Coimbatore and Chingleput Medical Colleges will be taken up.

POST-GRADUATE INSTITUTE.

The University of Madras has proposed in the year 1965 to establish at Madras a Post-Graduate Institute in Basic Medical Sciences, with the monetary assistance from the University Grants Commission, who have promised to meet about two-thirds of the non-recurring and half of the recurring expenditure on the scheme. The balance of expenditure on the scheme has to be met by the University. The University requested the Government to meet the entire balance of the non-recurring expenditure over a period of four years. It had also requested that the annual recurring grant of Rs. 19 lakhs now being given to it, might be raised to Rs. 20 lakhs to cover the recurring expenditure on the scheme. The Government examined the proposals of the University carefully and decided to accept them subject to the modification that the annual recurring grant of Rupees one lakh might be given as a separate grant.

Health facilities are a basic human right of every citizen and the money spent on public and individual health represent an investment in the Nations' Economic Structure. The Government are, therefore, very keen in using the scarce resources to the maximum advantage in order to ensure a healthy nation. Towards achieving this end, the Government have been planning their medical and public health schemes so as to be within the easy reach of the common man and be useful to the society at large.

The more we attach importance to public health problem, the more we must create scope for the availability of qualified people to carry out the schemes. In view of this unassailable fact, the Government schemes have been so framed as to ensure that sufficient number of qualified medical and nursing personnel are made available, facilities for post-graduate medical education and research are reasonably provided and that adequate technical man power is always available for serving the people.

The Indian Systems of Medicine, particularly Siddha System, which was long neglected, is given a distinct status in the set up of Health Administration in this State. It has also given due recognition to the Homoeopathy System of Medicine which had remained unrecognised so far in this State. Homoeopathy will be given its rightful place in the health services of this State in the coming years.

PLAN OUTLAY.

The Government have invested a sum of Rs. 248 lakhs during the First Five Year Plan towards provision of Medical Services and Medical Education facilities for the benefit of the people. This has been increased to Rs. 459 lakhs during the Second Five-Year Plan and to Rs. 644 lakhs during the Third Five-Year Plan. In the Fourth Five-Year Plan the outlay has been stepped up to Rs. 17,31.59 lakhs. There is thus a marked increase in the outlay on Medical Services and Medical

Education in respect of Plan Schemes.

The amount allotted for Medical Education, Medical Services and Indigenous Medicine, during the years 1972-73 and 1973-74 (which include both plan and non-plan schemes) are as follows :—

	1972-73.	1973-74.
	(Rupees in lakhs)	
Medical Education.	11-17	12-33
Medical Services	10-93	12-35
Indigenous Medicine.	13	20

It will be seen from the above that there has been substantial increase in the allotment to the several wings over the provisions made in the 1972-73.

MEDICAL EDUCATION.

There are at present eight Medical Colleges established by the State with an annual intake of 1,015 students. Besides 35 students are admitted every year to the B.D.S. Course. In addition to M.B.B.S. Course, several Post-Graduate degree courses and Diploma courses are conducted in these Medical Institutions. Hospitals have been attached to these Medical Colleges and the total bed strength of these hospitals during 1972-73 is 12,047. The bed strength will be increased to 12,314 in 1973-74. (All these institutions are under the control of the Director of Medical Education. Course up to M.D. level in General Medicines, General Surgery, Patho-

The Government, accordingly, sanctioned the payment to the University of Madras of a non-recurring grant not exceeding Rs. 12.50 lakhs spread over a period of four years from the year 1965-66 and to the incurring of an expenditure not exceeding Rs. 3,12,500 on this account during the year 1965-66. Sanction has also been accorded to the payment to the University of Madras of a recurring grant of Rs. 1 lakh per annum for the above purpose from the year 1965-66.

RESEARCH.

Over thirty schemes have been taken up for research work in the State Medical Colleges under the auspices of Indian Council of Medical Research and P.L. 480 funds. Research work has been completed in about ten cases and the work is in progress in respect of other schemes. Results of the Research work in certain schemes have been published in the Journal of Indian Medical Association.

About 72 Research Schemes on various subject have been taken up for Research by the Research workers attached to the Government Medical Colleges and Hospitals throughout the State of Tamil Nadu under the auspices of the Tamil Nadu State Research Committee.

EMPLOYMENT OPPORTUNITIES.

The Government have been bestowing considerable thought to the question of providing ample employment opportunities to medical graduates and others who have come out of the colleges. The number of students who come out successful every year will be roughly about 500. While the absorption of all of them in public sector would be a stupendous task, the Government are doing their best to provide employment opportunities to as many as possible by creating every year more posts of Assistant Surgeons, Nurses and other para-Medical personnel.

Two hundred and eighty posts of Assistant Surgeons have been sanctioned during the year 1972-73. During the year 1973-74 as many as 122 posts of Assistant Surgeons, 73 posts of Nurses, 27 leave reserve posts of Pharmacists and ten posts of Dental Assistant Surgeons for ten Dental Clinics for non-teaching Hospital are to be sanctioned.

INCREASE IN REMUNERATION

During the year 1972, the Government have raised the remuneration of all the Compulsory Rotatory

House Surgeons and Dental House Surgeons of this State from Rs. 175 per mensem to Rs. 200 per mensem. The remuneration given to the Resident Internees has also been raised from Rs. 175 per mensem to Rs. 200 per mensem. The Government have also sanctioned 45 posts of Resident Internees in the New Medical Colleges. Powers were delegated to the Director of Medical Education to create 18 posts of Dental House Surgeons in the Dental Wing of the Madras Medical College, Dental Institute, Madras.

With a view to increase the promotional opportunities for Pharmacists, the One Man Committee has recommended that 10 per cent of the posts of Pharmacists should be upgraded as Chief Pharmacists. This recommendation is under the consideration of the Government.

With a view to provide more employment opportunities to B. Pharmacy graduates, the Government have under consideration a proposal for the opening of "Hospital Pharmacy" in the Government General Hospital, Madras and the Government Erskine Hospital, Madurai.

GROWTH OF SUGAR INDUSTRY IN TAMIL NADU

Prof. C. S. MAHADEVAN

The Sugar Industry has attained a new stature in the past decade and with an unprecedented growth in consumption, the need has arisen for achieving a much faster rate of growth in the next decade. At the beginning of the Planning era, all-India production was only 11.34 lakh tonnes and this rose to 18.90 lakh tonnes in 1955-56 and a decade later to a new high level of 35.32 lakh tonnes (1965-66). Four years later, in 1969-70 a fresh peak of 42.65 lakh tonnes was touched.

The developments in the Fourth Plan period, however, have unmistakably indicated that new trends in consumption have emerged and with an increase in the requirements of the rural population there would have to be a regular growth in production by atleast 10 per cent annually with consumption in 1970-71 at 40 lakh tonnes.

Tamil Nadu has been making its contribution to significant increase in production in the past decade and is now accounting for about 9.58 per cent of the output for the whole country. In 1950-51, there were 2 mills accounting for an output of 92,342 tonnes and by 1960-61, there was an increase in the number of mills to 8 and in production to 1.31 lakh tonnes. It is, however, in the subsequent decade that this vital industry has grown considerably in stature with 12 mills functioning in the co-operative and private sectors producing as much as 2.23 lakh tonnes. Thereafter, 4 more sugar mills have come on the scene and with the implementation of expansion schemes by many established units, the output in 1971-72 was 2.99 lakh tonnes in respect of 16 mills. In 1972-73, the output will be further higher at 3.20 lakh tonnes. The following table throws light on the position of the Industry in 1972.

According to Mr. A. S. Padmanabhan, I.A.S., Convener, working group on Agro Industries in the Tamil Nadu Planning Commission,

Name of the Factory. (1)	Existing capacity in 1971-72. T.C.D. (2)	Production in 1971-72. (in M.T.) (3)
I. Co-operative Sector.		
Madurantakam Co-operative Sugar Mills, Padalam.	1,000	12,717
Amaravathi Co-operative Sugar Mills, Limited, Krishnapuram.	1,250	13,644
North Arcot District Co-operative Sugar Mills, Ambur.	2,200	26,210
Salem Co-operative Sugar Mills, Mohanur.	1,000	17,497
National Co-operative Sugar Mills, Alanganallur.	1,000	9,698
Kallakurichi Co-operative Sugar Mills.	1,250	13,360
Dharmapuri District Co-operative Sugar Mills, Palacode.	1,250	1,767
II. Private Sector.		
Thiru Arooran Sugars, Limited, Thanjavur district.	1,200	14,676.4
Deccan Sugar and Abkari Company Limited, Pugalur, Tiruchirappalli district.	1,500	21,912.0
Cauvery Sugars and Chemicals Limited, Tiruchirappalli district.	1,000	13,939.0
Madura Sugars, Limited ..	240	5,107.39
E.I.D. Parry Limited, Nellikuppam, South Arcot district.	2,200	29,619.0
Kothari Sugars and Chemicals Limited, Tiruchirappalli district.	1,500	17,163.2
Aruna Sugars Limited, South Arcot district.	1,200	25,338.17
Sakthi Sugars Limited, Erode Coimbatore district.	2,000	55,709.16
South India Steel and Sugars Limited, South Arcot district.	1,250	18,000

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the Industry will have to plan vigorously for increasing production to 65 lakh tonnes by 1978-79 and to 90 lakh tonnes by 1983-84. It is assumed that there will be a growth rate of 8 per cent in the first 7 years of the perspective plan period and of 6 per cent in the subsequent 5 years. Even though, Tamil Nadu has a surplus now after meeting its requirements, it will have to continue to produce more for meeting the needs of other areas besides providing also fully for the requirements of the State population. Even on the basis of the All-India average, consumption in Tamil Nadu, in 1978-79, may be in the region of 5 lakh tonnes in 1978-79 and 6.25 lakh tonnes in 1983-84. There will actually be a higher level of consumption in the region apart from the need for creating large surpluses for being sold in other areas. It may, therefore, be assumed that the target of production will be 8 lakh tonnes in 1978-79 and 1.1 million tonnes in 1983-84. In the early years, an increase in the output by over one lakh tonnes can be brought about by making better use of the existing capacity with greater attention to the cultivation of better varieties of cane over larger areas adjacent to the existing units. As there will have to be a virtual doubling of capacity in 1978-79 at least 12 more factories, with a capacity of 1,500 to 2,000 tonnes daily, will have to be established in Tamil Nadu. As the economic of agriculture has to be improved in Thanjavur and large tracts are available in that district, half the new capacity can be established in this area. This will mean that six new factories will have to be brought into being in five years commencing from 1973-74. It will be advisable to select areas in the interior where there will be no problem of drainage and it will also be possible to achieve a higher recovery. The area required for this purpose will be over one lakh areas. There will be no problem on this account; what is needed is careful attention to cultivation of cane for securing a recovery of over 9 per cent.

Thiru Padmanabhan rightly holds that the remaining six factories can be located in Madurai, Tirunelveli, North Arcot and South Arcot districts. It will even be advisable to utilise the existing acreage under

cane now mainly being used for manufacturing gur for establishing sugar mills. In that case, the recovery will be fairly high at 9.5 per cent. This will enable a broadening of the base of the Industry and a wider dispersal in the coming years. In 1979-81, the objective should be to increase the capacity of the existing units whose number would have risen to 29. The additional capacity of 25,000 tonnes can be easily achieved in the Sixth Plan period by implementing merely expansion schemes. The duty of the Planner will, therefore, lie in raising immediately the output by 50 per cent in the two or three years with the existing facilities by increasing the availability of cane and improving its quality. Subsequently large areas will have to be brought under cane in entirely new regions and Thanjavur may gain the distinction of being an important producer of sugar besides rice.

The extent under cane cultivation in Tamil Nadu at present is 1,48,522 hectares as compared to the acreage of 36,422 hectares cultivated in 1953-54. Production of cane increased nearly fourfold between 1953-54 and 1971-72. About thirty per cent of the cane cultivated is now being utilised for sugar production and about sixty per cent of it is utilised for the manufacture of gur.

The Directorate of Sugar was formed in October 1969 and all matters relating to the industry are now being attended to by the Directorate. The Directorate has the special responsibility of developing and fostering the industry in the co-operative sector. For this purpose assistance is obtained from National Co-operative Development Corporation and Industrial Finance Corporation.

The Government of India have been fixing basic minimum price for sugarcane at Rs. 7.37 per quintal linked to a recovery of 9.4 per cent or below. For 1972-73 season, the Government of India have fixed the basic minimum price for sugarcane at Rs. 8 per quintal linked to a recovery of 8.5 per cent or below with a premium of 9.4 paise per quintal for every 0.1 per cent increase in recovery above 8.5 per

cent. The announcement of a higher basic minimum cane price with a reduction in the basic recovery and an increase in the premium for higher recoveries based on the principle of full proportionality is to maximise sugar production.

Besides the Government of Tamil Nadu, have decided that the premium for enhanced recovery will be disbursed in the season itself. This will be in addition to the premium to be given by the Government of India as part of the next season's price based on previous season's recovery.

In order to maximise sugar production, the Government of India gave an incentive to sugar factories by allowing a rebate in excise duty at Rs. 16 per quintal for sugar produced during 1st December 1971 to 30th September 1972 which is in excess of 80 per cent of the quantity of sugar produced during the corresponding period in 1970-71. For 1972-73 season, Government of India has announced that rebate is allowed only if production exceeds 10 per cent of what was produced in the 1971-72 season (up to December) and the factories are eligible for rebate only if production exceeds 115 per cent of what was produced in the corresponding periods of 1971-72 season for the period December to April. Government of Tamil Nadu have requested Government of India to adopt the same basis as in 1971-72 season as the present scheme will not benefit most of the factories in Tamil Nadu who have worked efficiently in 1971-72 season producing maximum sugar. The objective is to bring about a substantial increase in sugar production during 1972-73 season and also to make effective use of the existing capacities in the Mills.

There is also a proposal to establish a Sugar Research Institute in Tamil Nadu during the season 1971-72. Government have proposed to incur a revenue expenditure of Rs. 5 lakhs in the setting up of the above institute. The factories have offered to contribute Rs. 5 lakhs. The proposed institute will have teaching, research and development, advisory and extension services wings and will meet a long-felt need of the industry.

HANDLOOM INDUSTRY IN TAMIL NADU



Dr. M. Karunanidhi, Chief Minister, enjoying the fine texture of handloom clothes exhibited.

Handloom industry is the most ancient and the largest cottage industry in Tamil Nadu. There are about 5.50 lakh handlooms which represents a little over 25 per cent of the number in the country. Nearly 20 lakhs of people are depending on them for their livelihood. With an annual production potential of about 39 crores yards of handloom cloth of the value of Rs. 48 crores with export capacity of nearly Rs. 4 crores every year this industry occupies an important place in the economy of the State.

Problems of Handloom Industry.

The Handloom Industry has always been facing problems relating to raw materials, finance and competition from the organised textile mills industry. The Government of Tamil Nadu have been taking an abiding interest in the promotion of the industry and the welfare of the people engaged in it. Governmental assistance is extended to stabilise and promote the industry mostly through Co-operatives which constitute a suitable institutional agency for securing raw materials, funds and marketing facilities on favourable terms.

Experiments are also being conducted for producing cloth on handlooms using chemical fibres such as Acrelic yarn and Terelyne yarn. A suitable scheme has been drawn up for training the weavers in this direction.

Special Assistance For Disposal Of Stocks :

The Government have been rendering special assistance to the societies in disposal of their stocks. During periods of stagnation of goods with the Primary Weavers' Co-operative Societies, finance is provided to the Tamil Nadu Handloom Weavers Co-operative Society for intensive procurement so that the members of the societies may get continuous employment. During the year 1969-70, the Tamil Nadu Handloom Weavers' Co-operative Society was given a loan of Rs. 50 lakhs for this purpose in addition to a loan of Rs. 25 lakhs already provided. During the year 1970-71 the Tamil Nadu Handloom Weavers' Co-operative Society was given temporary loan of Rs. 50 lakhs.

As on 31st March, 1972, there were 726 Primary Weavers' Co-operative Societies and 23 Industrial Weavers' Co-operative Societies in the State. The Primary Weavers' Co-operative Societies alone serve as many as 1.65 lakhs handlooms which account for about 30 per cent of the total number of handlooms in this State. In addition to these, there are 20,000 silk looms of which as many as 3,352 looms are represented by 14 Silk Weavers' Co-operative Societies.

The handloom weavers enlisted as members of the societies were given loans for 75 per cent of the share value subject to a maximum of Rs. 75 per member till 1972. But

the above limit was relaxed in the year 1972 and the State Government issued orders that the entire share capital required for the admission as member of Weavers' Co-operative Society might be given as loan subject to a maximum of Rs. 100 per member. Loans are also given to the existing members for strengthening their share capital subject to a maximum of Rs. 75 per member.

Reorganisation of the Societies :

A programme for reorganisation of the Primary Weavers' Co-operative Societies has been taken up with a view to eliminate the weak and uneconomic societies. Consequently their number has been reduced from 1,069 in June 1967 to 710 in March 1972. The number of dormant societies which was 369 in 1969 was reduced to 122 as on 31st March 1972. Members of liquidated societies have been admitted in the neighbouring viable societies. New members were also enrolled in the existing societies. Steps are also being taken to start new Weavers' Co-operative Societies wherever possible. During 1972-73, 12 new societies have been started in various parts of Tamil Nadu, while five dormant societies have been revived.

Working Capital For Weavers' Co-operative Societies :

The provision of adequate working capital to Weavers' Co-operative Societies at a reasonable rate of interest is the most important pre-requisite for the development of these institutions. The Reserve Bank of

India provides funds to the Weavers, Co-operative Societies through the State Co-operative Bank and the District Co-operative Central Banks for production and marketing at 1.5 per cent below the Bank rate.

The working capital loans provided to the Weavers Co-operative Societies including the State Handloom Weavers, Co-operative Society is backed by Government guarantee. During the year 1971-72 the Government have given guarantee in this regard to the extent of Rs. 625.29 lakhs to the Reserve Bank of India. For the year 1972-73 the Government have extended a guarantee to the extent of Rs. 771.25 lakhs to the Reserve Bank of India. During 1973-74 a sum of Rs. 800 lakhs is expected to be recommended for Government guarantee.

Under the scheme of guarantee of reimbursement of loss, the Government of India and the State Govern-

ment have agreed to bear the losses, if any, arising out of non-recovery of working capital loans advanced to the Weavers, Co-operative Societies from the Reserve Bank of India credit as well as from the own resources of the Banks to the extent of 50 per cent and 40 per cent respectively, the balance of 10 per cent being borne by the Co-operative Financing Banks. The liabilities of the Central and State Government have further been limited to an upper ceiling of 5 per cent of the total fund disbursed to the Handloom Industry by the Co-operative Central Banks.

In order to help the marginal societies to provide the required margin money, the Government are strengthening their own resources by subscribing towards their share capital. An amount of 10 lakhs have been invested in 119 societies during 1971-72 and an estimate of

Rs. 10 lakhs have been made for 1972-73, and a sum of Rs. 6 lakhs has been provided for 1973-74.

The Weavers, Co-operative Societies have to improve the productivity and the technique of weaving, so as to produce attractive fabrics and face the competition from the mill sector. Government therefore, subsidies 75 per cent of the cost of improved handloom and weaving appliances and provide the balance of 25 per cent as loan. The establishment of large and small dye houses is financed by the Government.

With the object of improving the varieties and designs of production of handloom goods, a scheme for training the members of Weavers Co-operative Societies has been under implementation. Under the scheme conducted in 12 Training Centres in Tamil Nadu, Weavers drawn from neighbouring areas are being trained in several methods of improved weaving. Training is also given to the dyers employed in the Weavers Co-operative Societies in the improved methods of dyeing. There are five courses in a year for training 30 weavers in each course in each centre. The weavers are selected from among the members of the Societies running the scheme and from the other societies in the area. Training is given in the production of two or three fast moving varieties with little competition from the mill sector like bed sheets, carpets, towels, shirtings, sarees or high counts and latest designs, etc. After the training, the weavers are required to produce the new varieties on behalf of the societies and they are given the improved appliances at subsidised cost. The duration of each course is 60 days and a trainee is given stipend of Rs. 100 per mensem. Annually, 1,800 weavers are being trained. The training centre in a district moves from place to place within the district after training a reasonable number of weavers in each place. It is hoped that this training which is intensive as well as extensive, will enable the industry to stabilise itself by producing easily marketable varieties of handloom goods. The expenditure under this scheme during 1970-71 was Rs. 4.45 lakhs and a sum of Rs. 5.19 lakhs was spent during 1971-72. A sum of Rs. 5.83 lakhs is estimated for 1972-73 and a sum of Rs. 5.04 lakhs is proposed for 1973-74.



Thiru V. R. Nedunchezian, Minister for Education, enjoying the handloom clothes exhibited.



A view of the INSTRONICS Estate, Adayar.

ELECTRONICS COMPLEX NEAR MADRAS

With a view to develop the Electronics and Instrumentation Industry in Tamil Nadu, various promotional measures have been instituted by the State Government with the active assistance and guidance from the Government of India, National Laboratories and Higher Technological Institutions. As a first step towards this, the State Government have set up a functional Industrial Estate for Electronics and Instrumentation Industry in Madras in the heart of the Adyar technological campus adjoining the Indian Institute of Technology and other higher educational institutions to provide the basic infrastructural facilities like suitable factory units, water-supply and electric power. This area is being developed as an Electronics Complex and will cover an extent of about 30 acres in all.

A thorough study of the types of electronic industries which have scope for development in the State

was made by a Working Group constituted by the Government during 1970 comprising of leaders in industry and technological institutions. The entrepreneurs who will be settling in this functional Industrial Estate would be made to take up to such line as have been identified by this Working Group so as to ensure a systematic development.

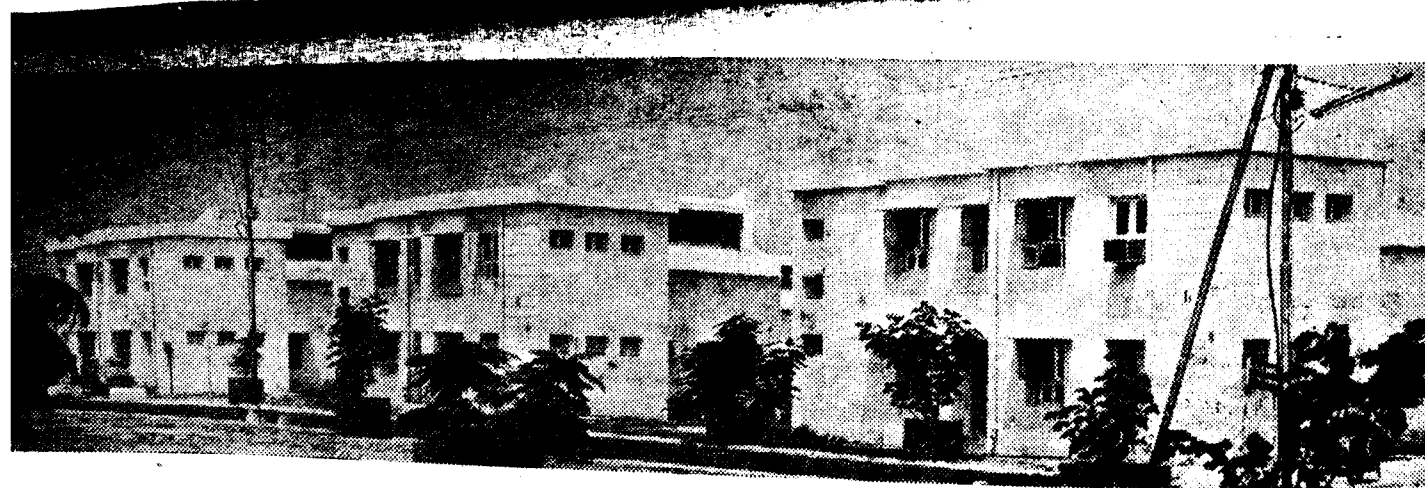
The total ultimate outlay on this Industrial Estate is about Rs. 45.00 lakhs and in all 45 factory units of various sizes engaged in the manufacture and assembly of electronic instrumentation components, sub-assemblies, systems, auxiliaries,

ancillaries and final-assemblies would be located in this estate. The estate is situated opposite the Lattice Bridge in the Technological Campus, Adyar and is accessible both by the Lattice Bridge Road and the Central Polytechnic Campus Road. The factory buildings in this estate are specially designed to be free from dust, noise, and Radio interference. The location of the estate itself is very close to the Indian Institute of Technology, College of Engineering, Polytechnic and other National Laboratories of the C.S.I.R. Complex, where from testing and consultancy facilities may be availed of by the entrepreneurs. Special protected water-supply is made available to this estate from a departmental well and a pumping unit put up at a distance of 1 1/2 miles from the estate.

Two types of sheds, one about 1,600 sq. ft. ground floor and 950 sq. ft. first floor and 1,800 sq. ft.



ELECTRONIC ASSEMBLING PROCESS.



A long view of group of factory sites in INSTRONICS Estate, Adayar.

ground floor and 920 sq. ft. first floor have been designed. Twenty-two of these units have already been constructed and allotted. Three are under finishing stage and four more are being taken up. Even the three units nearing completion have been allotted. Fifteen units have gone into production and are making

1. Electronic Recording and Indicating Temperature Controller for Chemical Plants, Plastic Units, Sugar Plants, Refineries, etc.,
2. Industrial Thermometers and Pyrometers for Refineries and Fertilizer Plants,
3. Resistors for Electronic and auto-electric industries.
4. Glass Instruments like Hydrometers, Mercury Switches, etc.,
5. Car Radios.
6. Standby Power supplies to Defence areas,

7. Instruments,
8. Electrical and Electronics measuring instruments,
9. Sub-units for larger Electronic equipments.

Other units, which are in the various stages of development are to make components for specialised instruments, battery, eliminators, ferrites for electronic equipments, television components, special batteries for Electronic controls and Systems, Television Receivers, Transducers, Electronic hardware and medical electronics. A few of the items, like Process Control instruments and Industrial Thermometers made in this estate have already found their place in equipments made by larger units for exports. The car radios produced in this estate have caught export market in developed countries.



Electronic testing.

One of the most important requisites for an organised development of Electronic and Instrumentations Industry is good certification testing and product-development laboratory with suitable facilities so as to ensure perfect quality conforming to both National and International Standards. There are no testing and certification facilities of the kind in this State at present and in order to make the goods produced not only in this Estate but also outside the Estate conform to export standards, good quality-certification and calibration laboratory is being set up by the Government in the campus of this functional industrial Estate so that it will not only act as a Reference Laboratory but also as a certification Laboratory. The exact nature of the facilities established at any place would depend upon local conditions and the emphasis on the types of products manufactured in the region. With the above view, the Department of Electronics, Government of India were approached by the State Government with a detailed Project report for assistance in setting up of a testing certification Product Development, which will ultimately cost about Rs. 40 lakhs. The Department of Electronics have accorded their approval to set up this laboratory and have sanctioned financial assistance towards the equipments. This laboratory which will be housed in the same campus is expected to function by 1974-75, and will go a very long way in providing this much-needed facility for this sophisticated industry, particularly in the small scale sector.

In addition to the above, the Central Electronics Engineering Research Institute, Pilani have also been approached by the State Government to set up a service Centre for the Repair, Service and Maintenance assistance in regard to specialised Electronics Equipments, Instruments, Controls, etc., so as to serve the small scale industry in this field in a much bigger way. This Centre will also be located close to the Industrial Estate.

Special type of small factory units with a covered area of about 1,100 sq. ft. have been put up in this Estate on nominal rental basis exclusively for allotment to technically qualified entrepreneurs. Eight of these units are being put up in the first-stage and twelve more are expected in the next one year.

The private units in Industrial Estate and also the Laboratory will provide very good openings for the qualified entrepreneurs and craftsmen in not only setting up Industries in small scale but also in getting equipped with the latest technological developments in the field of Electronics and Instrumentation. It is not worthy to mention that out of the 29 present allottees in this Estate, 26 are highly qualified Technicians.

Two of the joint sector projects of the State-owned Tamil Nadu Industrial Development Corporation (TIDCO) viz., one to Manufacture of T. V. Receivers and the other to make Precision Instruments will be housed in the same scope for ancillary development and employment opportunities.

The total employment potential in this complex would be around 1,500 ultimately including highly qualified personnel, semi-skilled and skilled craftsmen and women; with double the number as indirect employment by way of manufacture of components and feeder-industries. These units would not only be making highly sophisticated original equipments like Instruments and Controls but ancillary sub-assemblies and sub-systems to larger electronic complexes like Bharat Electronics, Indian Telephone Industries, Electronics Corporation of India, Hindustan Teleprinters and Space Research Organisations. A beginning in this regard has already been made by some of the units in the Estate.

It can be hoped without the least doubt that this Complex, aptly called INSTRONICS CAMPUS, with the private units of the Estate, Laboratory and the Service Centre will be one of the most important nerve-centres for the development of Electronics Instrumentation in the country.

EXPORTS OF INDIAN HANDICRAFTS

DIRECTION OF EXPORTS

Exports of Indian handicrafts have increased more than four-fold during the last ten years from a modest amount of Rs. 19.34 crores in 1961-62 to Rs. 90.52 crores in 1971-72.

It is significant to observe that exports of handicrafts accounted for 5.6 per cent of total exports of India during 1971-72 as compared to 2.9 per cent during 1961-62. Handicrafts have come to occupy a place of pride as one of the foremost export items along with jute manufactures, tea, iron ore, leather goods, engineering goods and cotton textiles.

Exports of handicrafts along with total exports from India have been as follow :-

COMPOSITION OF EXPORTS

Exports of Indian handicrafts are broadly divided into 15 groups. More than half of the total exports of handicrafts are from the sector of precious, semi-precious and synthetic stones. Wollen carpets, rugs and druggets constitute another 15 per cent. Wollen carpets from Kashmir and Mirzapur have become famous all over the world. Art metalware accounted for 8 per cent of total exports during 1971-72, and the share of handprinted textiles about five per cent. Among other important handicraft items are artistic woodware, imitation jewellery, zari, cotton carpets, embroidered goods, ivory products, etc.

Over the years, exports of art metalware, specially brassware of Moradabad, and woodware of Saharanpur have registered significant increases. The Indian hand-printed silk scarves were also very popular in western countries during 1969-70, but due to quick changes in fashion, their demand slowed down during the last two years.

About 45 per cent of the total exports of handicrafts is being shipped to European countries while another one-fifth goes to American countries. Countries of Asian and African region share the remaining 35 per cent. Important countries where Indian handicrafts are being supplied in large quality are the U.S.A., West Germany, Belgium, the U.K., Japan, Hong Kong, Netherlands, etc.

EXPORT PROMOTION.

All India Handicrafts Board is the main Central Government organisation for undertaking the development and export promotion of handicrafts in India. Besides the Board, State Governments also undertake development programme for handicrafts in each State. Central Government have also set up a commercial organisation known as Handicrafts and Handloom Export Corporation to boost the export of Indian handicrafts.

During the last few years the Board has sponsored a number of study teams to visit important foreign markets like E.E.C., Japan, U.S.A., etc. The Board has also participated in foreign exhibitions and produced publicity literature and colour documentaries on different crafts such as carpets, art metalware and wood carvings. On the domestic front the Board has taken several measures to enlarge the production base including training under master craftsmen, setting up of common facility centres, etc.

The Board has planned to double the export of handicrafts to Rs. 200 crores during the next five years. With the growing awareness of the exquisite quality of Indian handicrafts in foreign markets, it will not be difficult to achieve the target of the Fifth Plan.

The ancillary movement is not new to this country. It assumed greater importance during the Second Five-Year Plan in the context of growth of small-scale industries by leaps and bounds in the country. Much headway has been made in many industrial and consumer products as ancillaries to large-scale industries.

DEVELOPMENT OF INDUSTRIES THROUGH ANCILLARIES AND

SUB- CONTRACTING

It has been the experience all over the world that while the growth of the large-scale industries stimulates the local small-scale sector as a matter of 'secondary and tertiary' growth which in turn serves as an example for artisans and entrepreneurs engaged in traditional industries, it is the very existence of these ancillary units which attract large-scale industries to a State.

Large-scale industries require a wide range of components and sub-assemblies which have to be necessarily procured from other sources at a comparatively cheaper price, instead of taking up the manufacture of these items under the roof of their own assembled units. These sources for supply of the essential components to large-scale sector could possibly be only small-scale ancillary units.

The ancillary movement is not anything new to this country. The procurement of components from outside and assembling them by large-scale units have been in vogue for quite some time although the same was not dealt with in a systematic approach. Ancillary units assumed greater importance during the Second Five-Year Plan in the context of the development of small-scale industries as a means to create greater employment opportunities. Much headway has been made in many industrial and consumer products as ancillaries to large-scale industries. The Ford Foundation Team in its report of 1963 recommended that the relationship of the ancillaries with large-scale industries

that can be procured by them from the small-scale units ;

(c) Provision of suitable technical assistance to take up the manufacture of these listed out items by the small-scale units and

(d) Registration of small-scale units as ancillaries.

The ancillaries are under three categories, viz.—

(a) Specific components for fixed products on the basis of contracts—Captive units,

(b) Independent ancillary units supplying only selected items to one or more large-scale units and

(c) Replacement parts for open market consumption.

Goal of Self-reliance

In the present context of industrial development and the policy on self-reliance, the role of ancillaries has assumed greater importance. The Central/State Government have taken particular note for the necessity of every possible measure to strengthen this important sector of the industries by providing the infrastructure and other facilities. This has resulted in opening functional/ancillary industrial estates for ancillary products closer to large-scale units. The ancillary units have also caused certain planned dispersal of small-scale units to rural areas. The technocrats

as the important potential sources to strengthen the small-scale industries which are capable of producing goods of requisite standards at competitive prices and that the ancillaries can be fostered by the constant efforts of the Government by creating an atmosphere to bring both the large and small-scale sectors together and extend the necessary technical assistance and special treatment in the supply of raw materials to them.

Initially the work relating to the development of ancillaries was entrusted with the National Small Industries Corporation by the Government of India ; but later in order to have a systematic growth, a separate ancillary division was created in the Office of the Development Commissioner (SSI), New Delhi. This division was mainly entrusted with the following works :—

(a) Preparation of the list of parts and components that can be 'farmed' out by public sector undertakings for manufacture in the small-scale units in the country ;

(b) Classification of the large-scale units in the private sector to list out the parts and components

have realised the very important role of ancillary units, as a means of improving their own resources ensuring quality and standard of production which has given new dimension to this sector. It has to be mentioned with pride that units serving as ancillaries have definitely acquired a quality consciousness among them in view of the components and parts to be supplied by them with the requisite standards comparable to that of the large-scale products. The progressive attitude adopted by the large-scale units in Tamil Nadu, the active official assistance to small-scale ancillary units through various programmes of the States/Central Governments, and the initiative and the drive, the small-scale entrepreneurs themselves had, were mainly responsible for such an impressive progress. Adding to this, the setting up of public sector undertakings like Integral Coach Factory, Bharat Heavy Electricals, etc., have acted as catalysts to the development of small-scale units, particularly ancillaries.

These are perhaps the factors that led the Centre to consider the need for higher capital investment on machines and to give a special treatment to these ancillary units by fixing the limit as Rs. 10 lakhs as

against the norm of Rs. 7.5 lakhs for small-scale units. A good number of units come under the scope of this definition, but keeping in view the limited resources for ancillary development, only about 16 selected industries products have been brought under the Intensive Assistance Programme of the SSIDO, as detailed below :—

1. Industrial machinery ;
2. Agricultural and earth machinery ;
3. Industrial, Scientific and Mathematical Instruments (Mechanical) ;
4. Locomotives, rolling stocks, ships and aircraft ;
5. Bicycles ;
6. Machine tools ;
7. Boilers and Steam generating plants ;
8. Steam engines, turbines and internal combustion engines ;
9. Automobiles ;
10. Commercial, Office and house-hold equipments ;
11. Electric machinery, equipment and appliances ;

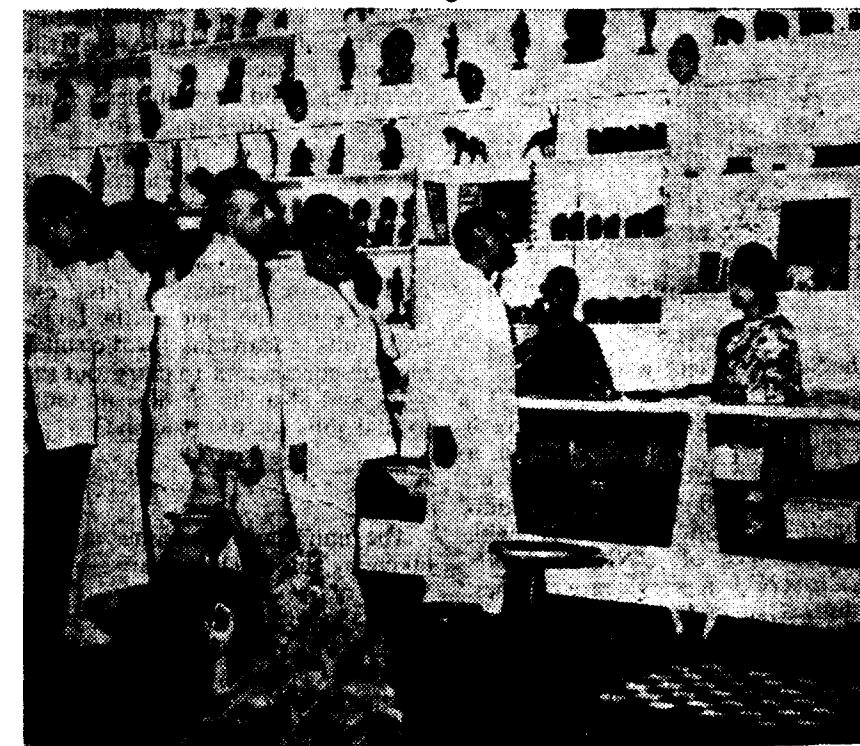
12. Tele-communication equipment ;
13. Industrial instruments (Electronics) ;
14. Radio and electronic equipment ;
15. Mineral oil and Petroleum Products and
16. Air-conditioners and cold storage equipments including refrigerators.

PATTERN OF ASSISTANCE BY GOVERNMENT.

Ancillaries are enterprises which supply parts and components or sub-assemblies to large-scale units and will be permitted to have the limit of investment on machinery and equipment up to Rs. 10 lakhs. But they will be placed on a par with small-scale units in the matter of allotment of sheds in industrial estates, sanction of loan, export markets, supply of machinery, etc. Industrial estates exclusively for functional and ancillary units have been established at various centres (viz. at Vadalur, Virudhachalam, Adyar, Madhavaram and Kakkalur). In addition, developed plots are being allotted for location of ancillary units in places wherever there are concentration of large-scale units.

Testing laboratories both by State and Centre have been set-up. Small Industries Service Institute has laboratories at Madras and in its extension centres. The Department of Industries has set-up laboratories at Madras, Madurai, Tuticorin with a proposed one at Coimbatore. As for the training aspects, the Technical Training Centre at Guindy has been set-up exclusively to train on dye-sinking, dye-designing, tool-making, forge and heat treatment and machine operative which are primarily to benefit ancillary units. The Tools and Die Designing Centre at Dindigul gives specialised training in the design and manufacture of tools and dies required for engineering units. Three basic rural service centres are functioning in Tirunelveli for training in poweroperated machines in the trades of fitting, turning and welding.

Technical information sections are functioning at Guindy and Ambattur in Madras. In addition, the Small Industries Service Institute



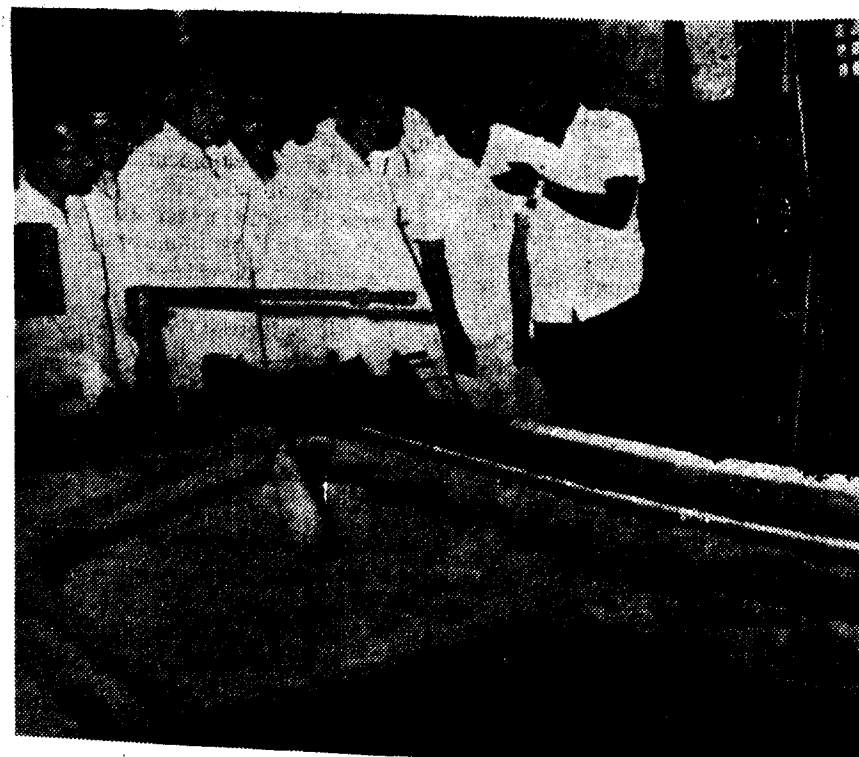
Thiru Mannai Narayanasamy, Minister for Co-operation, enjoying the going round in the Khadi Crafts Sales Emporium at Mount Road, Madras.

renders assistance in training and also conducts Seminars in collaboration with industrialists and official agencies. A sub-contract exchange has been set-up in Small Industries Service Institute creating a link between small-scale and large-scale units. The image of ancillary industries have been projected to a large extent by organising exhibitions in various places.

THE ANCILLARY DEVELOPMENT IN TAMIL NADU.

It can be claimed with pride that a vigorous and growing ancillary sector has developed in Tamil Nadu with the progressive attitude adopted by the large-scale units in both public/private sector. There are to-day over 500 ancillary units in Tamil Nadu serving large-scale units and over 300 units for small-scale units. The total investment of these units are nearly Rs. 300 crores employing over 100,000 persons. There had been rapid growth of engineering and automobile ancillary units in and around Madras from which about 50 per cent of the value of production for automobile industry is accounted for. It may be mentioned that a number of ancillary units of the automobile industries, in and around Madras have been directly benefitted in the sub-contracting of many essential items required by medium and large-scale units. The ancillary units not only expanded their production; but also diversified new skills and capacities. One healthy feature of ancillary small-scale units is that they have necessary to be modern to keep in view the rapidly changing and varying requirements of parent units. With over 60 large-scale units in the State, the ancillary development achieved substantial progress. It is seen that the total value of orders secured by small-scale units from large-scale industries in both public and private sectors including Railways and Defence since 1961 till 1971 was Rs. 34,47 lakhs. Comparing the yearly performance of the ancillaries, it was noticed that the production was around Rs. 197 lakhs in 1961-62 and Rs. 3,17 lakhs in 1965-66 which rose to Rs. 8,76 lakhs in 1970-71. The breakup of the orders from different sources for 1970-71 are furnished below in order to indicate the extent of their ancillary dependence.

32



Thiru S. Madhavan, Minister for Industries, going round the Somasundra Mill at Coimbatore.

Sources.	Value of orders booked during 1970-71.
	(Rs. in Crores)
Railway	1.33
Defence Establishments	0.38
Government Departments.	1.12
Large Scale Industries in Private Sector.	5.93
Total ..	8.76

The Sub-Contract System.

Adding to the natural rapid growth of the ancillaries in Tamil Nadu, a sub-contract exchange was set-up by SISI in 1970 at Madras (in addition to one unit at Bombay) with the assistance of UNIDO experts as a part of their service programmes. This exchange has been described as a system for increasing industrial efficiency by setting the forming of sub-contract work. With the increasing tempo of industrialisation and the emphasis on specialisation, need has been felt to have some device to fill up the information gap

between the requirements of large-scale industries and the capacity of small-scale industries and collect, store and disseminate information systematically by linking the two. This will be the primary role of the sub-contract exchange. This exchange serves as a Central Information Bureau registering the machine capacity for small-scale industries and enquiries from large-scale industries for the manufacture of different components, sub-assemblies and brought out components. The information is passed on to the capable registered small-scale units having spare capacity. This exchange saves the time of the large-scale units in searching for the suitable sub-contractors to carry out the work and also the small-scale units to find jobs for the machine.

The important functions undertaken by this Exchange are :—

(1) to invite small-scale units dealing in Mechanical, Electrical, Plastics, Ceramics, Leather, etc., to register their spare capacity of machinery with exchange and record, on the information cards, data machinewise, processwise and productwise;

(2) to approach the large-scale industries and request them to off load items which could be manufactured by the small-scale industries;

(3) to render technical assistance to small-scale units in developing and manufacturing the items required by large-scale industries and

(4) to furnish information to small-scale industries regarding the requirements of large-scale industries.

The system of registration consists of collection of information regarding spare capacity, visiting the units to verify the technical competency, selection of units capable of handling enquiries, codifying the information relating to selected industries and noting the changes of addition to the machine capacity, if any, after some time.

The enquiries received either by phone or by letter are processed by inviting required drawings for the items, ascertaining the correct specifications, details of the raw materials required to be used and the delivery schedule. The selected units capable of producing these components are then linked with the main contractors. The small Industries Service Institute also follows up through correspondence, and personal visits, till the satisfactory execution of such orders when once finalised.

The exchange has at present confined itself to collecting information from engineering units in Madras City only, and is gradually attempting to build up information on non-engineering units from other districts also. The working of this exchange has already made an impact on some of the large industries in the public sector, namely, Bharat Heavy Electricals at Tiruchirappalli, Madras Refineries, Defence and Railways, private large-scale units, like Lucas-T.V.S., Leyland, Best and Company, English Electric Company and Tractors and Farm Equipment for sub-contracting several items to the ancillary units.

With the set-up of a Steel Plant at Salem and the development of Petro-Chemicals Complex around Madras, there is every scope for this exchange to create the best atmosphere for ancillary units to

cover a wide range of items and to gain further momentum in the years to come.

Attempts are afoot to eliminate complaints of these large-scale units that the ancillaries do not stick to delivery schedules and the sanctity of quality. Rejected components are sometimes included in the next consignment in the hope that a "less prejudiced" Officer of the large-scale unit might accept them. On the other hand, the ancillary units also have complaints about delayed payments and the like which by a process of stream lining, are being eliminated.

PLANT LOCATION.

Plant Location is to situate a certain industry in a suitable site. Operating and capital costs too are partially decided by Plant Location. The Industrialist takes into account not only short-run costs of the day but also long-run costs and he aims at minimizing the sum of all costs by comparison of alternate locations. It is always thought that the location problem of a plant occurs once in a while, but it is not so. The problem appears again when the organisation expands. This is solved by the following four choices :—

(a) Sub-contract the expanded capacity;

(b) expand the existing plant in its present location, if possible ;

(c) keep the existing plant in the present location and build a second one elsewhere and

(d) close the existing plant and relocate the industry in a new area.

The aim of the industrialist in location analysis is first to select a region (General Area) and then to select a community (Sub-Area). Site is finally selected for locating the plant.

There are certain factors associated with the selection of a region (or General Area) pertinent to plant location. These factors are detailed hereunder :

(a) Location close to the market: This saves the transportation cost and time and perishability of the product.

(b) Location close to the raw material area: Fruit processing Industries are necessarily located in the areas where fruits are made available. 397

(c) Location close to process requirements such as water and electricity.

(d) Location with good transport facilities.

(e) Location based on climate : e.g. Photo film Industry, Textiles, etc.

(f) Location based on the cost of land in the rural area and also in the urban area.

(g) Location based on personal preferences : An industrialist would sometimes prefer to locate the plant in a place which pertains to his nativity or to the place where he lives.

(h) Taxes and Legal Factors : Rate of Taxes and Legal Factors do make a difference between Governments.

(i) Government Policy: Government formulates some policies to balance the regional economy by encouraging the industries located in areas which are underdeveloped and where the rate of unemployment is very high.

(j) Location with good labour supply: This is a primary factor in selecting a general area for plant location. It is concerned with selectivity, levels of skills and education and productivity of labour force in that particular area. While analysing labour supply, labour management relations and patterns of absenteeism are not ignored. Fringe benefits and wage rates play an integral part for the location of a plant with good labour supply

Selection of a site which meets the minimum requirements is of vital importance when an area is chosen for plant location. This site must be zoned for industrial use and must satisfy the needs of the industrialist at reasonable development costs. An estimate of the floor space requirements must be first made—taking into account the rooms for expansion, parking space, transportation facilities, etc. A site five times the present plant

area is considered minimum to allow for future expansions. Availability of open land adjoining the plant site is preferable for future expansions. The site must provide for sewage disposals and the soil structure of the site must also withstand the weight of bearing loads of building foundations. Factory sites are fairly developed by Industrial Estates now-a-days solving many a problem of the occupants.

Multiplant Location : Analysis of a multiple of plants for an industry in different locations is considered in view of its dynamic character. Addition of such plants in various locations is pertinent to the nearness of the marketing areas. Multiplant Locations are planned to minimize overall costs. In this case, the plants situated in various locations are analysed in respect of their production and distribution costs, plant capacities and distribution demands. The promising plants are retained, while the others are shut-down or disposed when the demand falls. In a multiplant situation, a plant which is not advantageous to the organisation by way of current costs, demand for the product in the particular area and producti-

vity of labour force is shut-down or sold-out. Some of such plants are relocated in ideal locations. Appropriate decisions of this kind attribute to the well-managed organisations.

Foreign Locations : Location of plants in foreign lands are now-a-days planned taking into consideration the availability of men, materials and machinery at attractive rates. All these three factors go into ideally locating a plant abroad. There is also every likelihood that an organisation could be burned badly by giving preference to only one or two of the above factors. For instance, labour wages in India is extremely less, compared to the situation in United States but the expensive machinery at this end counter-balance the advantage of wage cost. Similarly the cost of materials, fuel and power, is dominant while locating a plant abroad. Alternatively, if either of the cost advantage of men, machinery and materials is not erased or affected by the higher costs of the other two, foreign location is a fascinating phase of development of the industries which are favoured by the structure of foreign costs.

Plant Location is of great importance in view of the physical factors of the overall plant design. A trend towards decentralisation in plant location is seen everywhere these days. This is of course a symptom of economic growth of the country as a whole. Industrial Estates are planned solely for development of factory sites. To captivate the industries to the respective regions, various concessions such as tax reductions and low-cost lands are made available where there are no industrial estates. Plant locations in rural regions provide substantive space for parking, expansion and plant design of architectural attractions. There are also instances of good locations of plants wherein the factors examined herein are not altogether observed. Yet, they cannot be followed as the model locations by the interested industrial entrepreneurs.

TANSI has secured a Defence order to the value of Rs. 8.05 lakhs for supply of Pistol 78 through open competition from the Ministry of Defence Supplies, Government of India, New Delhi. This order will be executed by the Tansi Machine shop, Guindy.

An order for supply of 40 Tonnes of Forged Steel Balls to the Ennore Thermal Station valued to Rs. 1.30 lakhs has been received from Tamil Nadu Electricity Board. This order is under execution by the Tansi Forgings, Guindy and Tansi Tool and Forge Works, Coimbatore.

Two orders, one from the Railway Board, New Delhi and the other from the Post and Telegraphs Department, New Delhi have been received by Tansi for fabrication, galvanising and erection of sixty numbers of self supporting Micro wave Towers for a total weight of 2300 tonnes. The total value of these orders is Rs. 61.40 lakhs. Both the orders will be executed by the Tansi Structural and Galvanising Works, Mettur Dam.

Thiru Sisjohn Serma, Deputy Speaker of Megalaya, called on the Chief Minister, Dr. M. Karunanidhi on 25th May, 1973 and had a long talk with him of mutual interest.



Tamil Arasu

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The Prosperity Brigade goes into Action.

The Seerani Volunteers constructed on their own volition the hostel building for Narikuravar students at Suidapet in Madras within a record time of 15 days. The work was inaugurated by Thirumathi Sathyavanimuthu, Minister for Harijan Welfare, (Picture top) on 20th May 1973 and was declared open by Dr. V.R. Nedumchezhian, Minister for Education on 3rd June, 1973 on the occasion of the 50th birth day of Dr. M. Karunanidhi, Chief Minister of Tamil Nadu (Picture-below). The hostel building signifies and stands as a testimony to the mammoth nature of the selfless and sacrificing service to the society of the members of the Prosperity Brigade.



ONE
SHOULD
WISH
MANY
MORE
BIRTH-
DAYS
FOR
KARUNA-
NIDHI

S. VISWANATHAN,
in *Industrial Economist*.

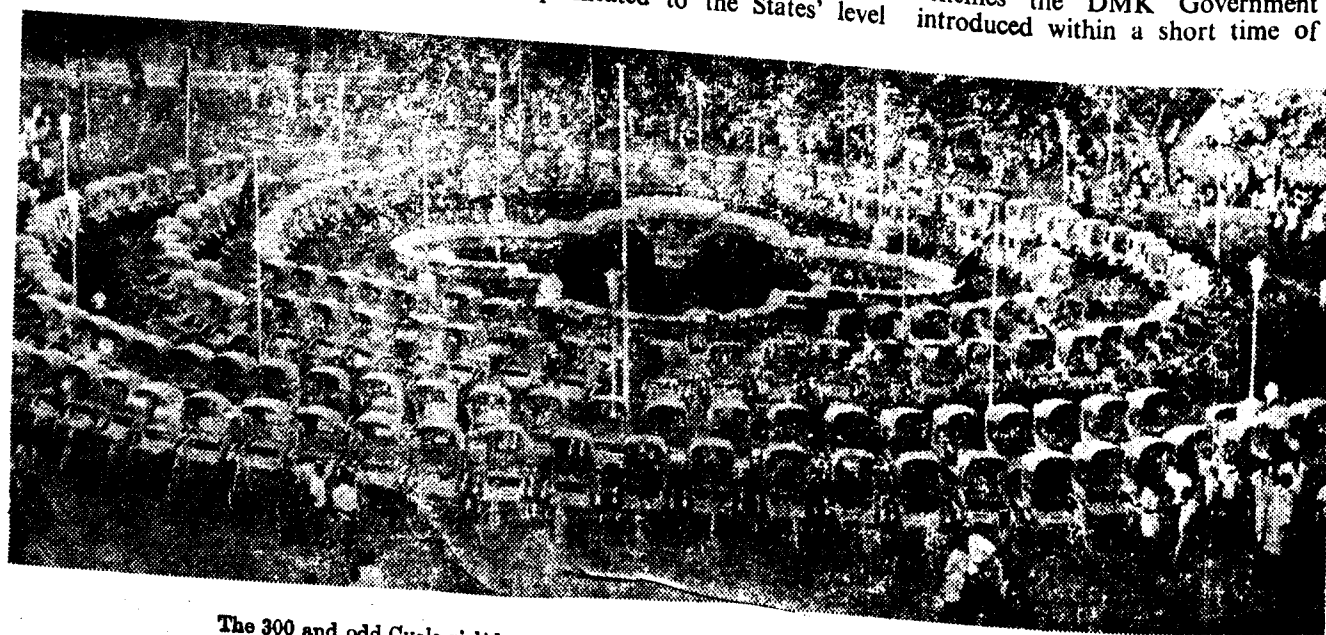


The Cabinet Ministers called on the Chief Minister Dr. M. Karunanidhi at his residence on 3rd June 1973 to greet him on his 50th birthday.

It is the endeavour of every successful political leader to devise schemes which will have impact on the widest cross section of the people. The 'garibi hatao' slogan of the Congress was the crystallisation of the objectives of the ruling party at the Centre. In an attempt to translate this, the main aim of the Fifth Five-Year Plan has been announced as the removal of poverty.

If it has taken nearly 24 years after independence to clearly define the approach of the Congress party, it is no wonder this approach has not permeated to the States' level

in many instances. Tamil Nadu is among the few interesting exceptions to this. Since the Congress Government which had a long innings continuously right up to 1967 introduced on its own many welfare measures such as free education up to high school, midday meal scheme and the like and had also worked towards rapid industrialisation of the State, its rival DMK had to devise schemes which will have a greater impact on the masses. It should go to the credit of C.N. Annadurai and to his successor M. Karunanidhi for the many schemes the DMK Government introduced within a short time of



The 300 and odd Cycle-rickshaws distributed to handerickshaw pullers on 5th June 1973.

THE OBJECTIVES OF

THE ARIGNAR ANNA MEMORIAL CANCER INSTITUTE

Based on the WHO's concept, the Government of Tamil Nadu are evolving the Cancer Control Project at Kancheepuram for the first time in India and perhaps the first one of its kind in Far East Asia. Within the short span of its existence, the Institute has done marvellous work in the line and is soon to be elevated to the status of a Research Cancer Centre.

Cancer Control as defined by a World Health Organisation expert Committee is a series of measures based on present medical knowledge in the fields of prevention, detection, diagnosis, treatment, rehabilitation and after-care of Cancer aimed at reducing the incidence of cancer, increasing the number of cures and reducing the invalidism due to cancer.

(b) to work out prevalence and incidence rates of the Cancer sites under study,

(c) to record any suggestive and causative factors for the disease and

(d) to set up a training centre for medical and para-medical personnel in Cancer Control.

History of Kancheepuram.

Based on the above concept, the Government of Tamil Nadu in collaboration with the World Health Organisation are evolving a Cancer Control Project at Kancheepuram for the first time in India and perhaps the first one of its kind in Far East Asia.

Kancheepuram is a small urban town about 45 miles from Madras City, the main metropolis of Tamil Nadu State. The area of the town is about 4.5 square miles with a fairly stable population of about one lakh people. The population at risk has been estimated to about 53,600 and are about equally divided among the men and the women.

The general objective was to evaluate the development of a Cancer Control Programme based on applicable systems of early detection and effective treatment fitted within the priorities of the State the existing framework of the Health Services, economic possibilities and the social and cultural characteristics of the area.

About 1/4th of them are involved in House Hold Industries—the main one being Silk weaving by hand-loom. Another 1/4th of them are engaged in trade and commerce (retail and wholesale trade and commercial activities like Banking, Stock-Exchange and shares) and in Government services, medical, legal and business services, personal services and community services. Amongst the remaining, the major group are employed in manufacturing other than household industry and others are engaged either in construction work, or as cultivators, agricultural labourers, etc.

The short-term objectives were—

(a) to organise a Cancer detection and treatment programme covering Oropharyngeal and uterine Cervical cancer at first in the Kancheepuram Municipality (Kancheepuram Panchayat Union),

(b) to work out as soon as possible means and methods for making efficacious and meaningful studies by adequate coverage and follow up systems and

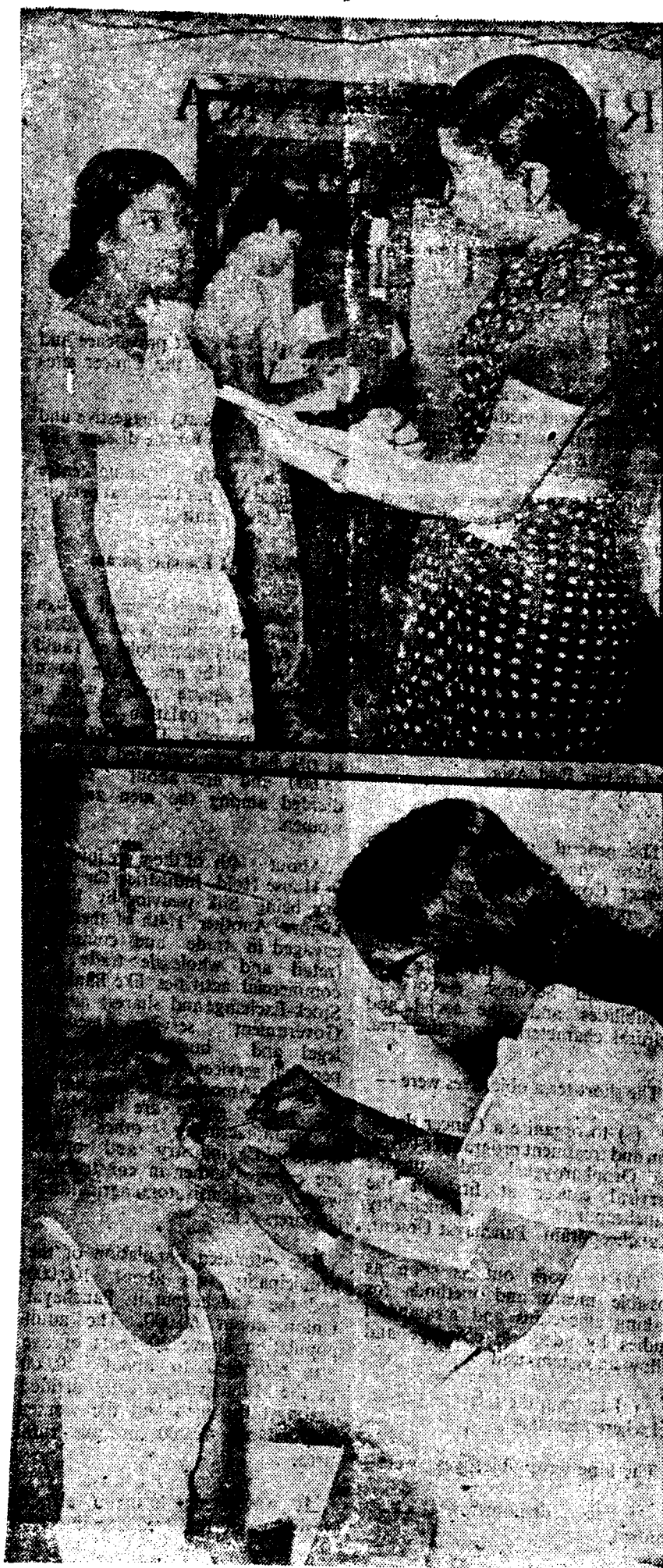
(c) to train the relevant personnel where necessary.

The long-term objectives were—

(a) to demonstrate cancer control,

The estimated population of the Municipality was about 100,000 and the Kancheepuram Panchayat Union about 60,000. The adult population above 20 years of age was estimated to about 50,000 in the Municipality equally divided amongst the men and the women and about 40,000 in the rural area.

It was decided to invite all the residents of the area for interview



and clinical examination for evidence of cancer and pre-cancerous conditions in the Oral Cavity and in the case of the women in the Uterine Cervix.

From 23rd March 1969 till October 20th, 1972, only women belonging to the Municipality were screened for the early detection of pre-cancerous conditions and early cancerous conditions of the Uterine Cervix (neck of the womb). All married women and women 20 years and above in age were eligible for an internal examination of the birth passage and the neck of the womb from where a smear was taken for Laboratory Examination (Cytological Examination). " If this showed any suspicious or malignant cells the Cervix was biopsied for confirmation of the diagnosis. If there was any obvious lesion on the cervix, then also a biopsy was advised. (Biopsy means removal of a bit of the diseased tissue for microscopical examination.)

(3) Funds and Mode of Operation

(a) World Health Organisation Aid

As per the plan of operation one million Norwegian Kroners (equivalent to 11 lakhs rupees) were to be channelled from the Norwegian Aid Agency through the World Health Organisation for capital outlay on buildings, equipments, etc., for this Institute apart from 20,000 U. S. dollars (equivalent to 1.5 lakhs rupees) to be given per year by the World Health Organisation as a grant in aid.

The Norwegian Aid Agency had also agreed to give 70,000 Norwegian Kroners (equivalent to about Rs. 70,000) to be cut by 20 per cent each year for a period of 5 years for the maintenance of equipment and supplies made by the World Health Organisation to this Institute.

The World Health Organisation has already supplied 2 Land Rover Vehicles, Laboratory Health Education Equipment and some books and journals to this Institute from the Norwegian Funds.

It has also supplied mechanical, electrical and electronic calculators and an I.C.L 1/7 hand punch and one type 103/1 verifier and 3 air-conditioners for the World Health Organisation Medical Officers Room, etc.

Still Norwegian aid equivalent to about 88,000 U. S. \$ available for this Institute is yet to be spent on equipment and supplies.

The Government of Tamil Nadu realising the value of foreign exchange for the purchase of equipment not available in this country had written to the World Health Organisation through the Government of India to conserve all the foreign exchange meant for this Institute for the purchase of equipment for the Institute which are not available in this country on rupee payment with a high priority for the purchase of radiotherapeutic equipment.

Within a short period of operational research the treatment dimension was highlighted. Many persons detected to have cancer in the Municipality and neighbouring areas had severe psychological, socio-economic and other restraints to go to Madras to obtain treatment. Moreover, it was also realised that there is a paucity of radiotherapeutic equipment in the teaching hospitals of the State which were already over-loaded with cancer patients waiting in a long queue for treatment.

So the grant in aid of 20,000 U.S. \$ given by the W.H.O. for the staff of the project was also not taken by the Government except for the first two years—1968 and 1969—60,000 U.S.\$ of grant in aid for the years 1970, 1971 and 1972 have also been reserved by the W.H.O.

for the purchase of radiotherapeutic equipment for this Institute.

W.H.O. had also agreed to give consultants from time to time and fellowships for members of the national staff to be trained abroad, apart from equipment and supplies and a W.H.O. Medical Officer who would act as the Programme Director for at least a period of 12 months.

Government's Contribution.

Government of Tamil Nadu have already spent more than Rs. 6.5 lakhs for a building for the screening centre, as well as the statistical section, a minor operation theatre and a Cytology Pathology Laboratory apart from an administrative office, Library Conference Halls and rooms for doctors, etc. They have also since sanctioned nearly Rs. 2.5 lakhs towards the cost of airconditioning Minor Operation Theatre, Statistics Department and the Cytology Laboratory. The Statistics Department has to be airconditioned since data have to be maintained as per international standards for long periods of time (even up to 20 years) and have to be computerised from time to time. Data cards have to be stored inde-humidified temperature for computerisation.

The Government of Tamil Nadu as per the recommendations of the W.H.O. Consultants have made the appointments of a multi-

disciplinary team of 26 persons of medical doctors, Pathologist, Social Scientists, Health Educator, etc., inclusive of a Principal Medical Officer as a national counterpart of the W.H.O. Medical Officer apart from 31 other administrative and ancillary staff members.

Government have also sanctioned Rs. 61,700 for the purchase of a 4 wheel jeep and a mini-bus for the extension work.

Government have also sanctioned Rs. 3.7 lakhs for the construction of wards over both the wings on the ground floor and over the 1st floor and plans and estimates were also made for Rs. 3.7 lakhs for the construction of a building to house a Cobalt Unit, Caesium Unit, etc., on the 1/2 acre plot on the northern side of the main Institute building handed over by the Highways Department.

Later, in light of developing a Regional Centre for Cancer and Research and to build a 360-bedded Cancer Hospital in a phased manner Government have since ordered the acquisition of a 22.5 acre plot of land on the main National Highway from Madras to Bangalore on the eastern side of the Bhakthavatsalam Polytechnic. Plans and estimates for Rs. 27 lakhs for the construction of a 100-bedded Cancer Hospital during the 1st phase 1971-72 with physical facilities to house a Cobalt 60 (6000 curies source) Caesium



Doctors enquiring the villagers during a round of Villages under "the Detection and Treatment Programme".

Check up of a woman to find out the pre-cancerous growth in her body as a preventive measure.



A trained Para medical staff of the Institute conducting the survey of the cancer patient at risk in the locality.

A doctor of the Institute screening an eligible woman for detection of uterine cervical cancer through interview

137 units, etc., in this site have also since been sent to Government for administrative sanction.

Already nearly 80 per cent of the 28,292 women at risk have been interviewed by the social workers more than once. A continuous migration record of eligible examinees, number of eligible examinees who have expired, number who have got examined, etc., is maintained by the above para medical workers. The enumeration records thereby are being kept up-to-date.

After the collection of base line social science data, Health Education activities in terms of organisation of a Citizen's Committee, Women's Health Education Committee, etc., consisting of leading citizens of the town including the members of the family of the late Arignar Anna has been done and more than 64 Health Education meetings in organised and informal groups in community and four exhibitions on Cancer Education have been held. A full time qualified Health Educator with five years experience in extension work has since been appointed and various avenues of Cancer Education through mass media, etc., are being explored after careful pre-testing and evaluation.

Statistical Studies :

A census of the population at risk taken by the staff of the Institute has been made up-to-date. A projected census of the whole municipality is available. Figures of the provisional totals from the Director of Census Operations for the whole town with reference to the 1971 census is also available. As already indicated, a continuous migration record and death record of the eligible examinees is being maintained. Demarcation of the population in terms of localities, wards, and blocks with maps are also available.

As regards the women who have already undergone a medical check-up for the early detection of uterine cervical cancer, clinical case records have been arranged serially and relevant data obtained on pre-coded sheets have to be punched and computerised. The Statistician of this Institute has already been trained in this regard both at Guindy and Manchester. The laboratory data also have to be pre-coded and punched and the data computerised. Follow-up data also have to be punched and computerised.

Social Science numbering of the Home Visit records have been completed.

Due to considerable intra-migrations within the town and emmigrations and immigration, identification of examinees from the available records had proved to be difficult and now family cards have been filled in and the original entries in the enumeration registers have been brought up-to-date in terms of migration, persons who have become newly eligible after the enumeration and those left out at the time of enumeration, etc. Open suspension Kardex filing and other Card Cabinets have been supplied by the Government for this purpose. An up-to-date eligible examinee list is maintained comparable to international standards for the purpose of calculating morbidity, mortality prevalence, incidence rates, etc. of Cancer.

The family index cards are also very useful in a screening programme like this and when the teams go from street to street in the identification of the eligible examinees for statistical precision.

Cervical Screening Programme

As regards clinical work two lady Medical Officers screen the eligible women for evidence of early detection of uterine cervical cancer both at the Institute and at the seven municipal maternity centres and three municipal dispensaries.

This is the golden era for Tamil and we witness ourselves Tamil being given the due place in every sphere of life.



The President, and the Governor seated on the dais at the University Tamil Teachers' Conference.

Research is one of the keys to the doors of knowledge. The development of society depends upon the development of knowledge and its application. This development of knowledge is a result of pure research. Research as such is both the cause and consequence of knowledge. But generally the domains of research have always been concerned with the fields of science and Technology alone. When we venture to take up research in the fields of humanities and languages, we are unable to achieve much progress as they are lacking in certain respects. The modern developments emphasise to a certain extent the inter-disciplinary research and interest on any problem of human concern. Hence the study of literature and Tamil society as a whole should not only pave the way for understanding the glory of Tamil, but also for a systematic and analytical research for future development. The glorious past and its relevance to the present set-up have been high-lighted by various eminent scholars. It was Dr. Anna who brought home to the millions of common men in Tamil Nadu, the glory of Tamil, Tamil Culture and society and its hegemony over other languages and societies in the ancient times.

Growing Need for Social Research in Tamil

(In Sociological Terms)

L. PALANIAPPAN, M.A.

Since Dr. Anna had been devoting much of his time to bring about social regeneration, he had little time to venture into the field of research. It has to be admitted that if he had taken up research, his profound knowledge of Tamil, Tamil society and Tamil culture would have produced research documents of incomparable merit capable of reacting only the scholarly few and he would have earned the plaudits of world academies as another Ravindranath Tagore or Pearl Buck. Since he had taken up the task of rebuilding the Tamil Society, he did not find the time to take up research. His method was not within the rigid academic focus, as he was concerned in awakening the common man to appreciate the realities of past in his own way to enable him to work for the formation of a progressive social order. He suggested the need for applying the research tools in the analysis of society and literature and encouraged the Tamil scholars with academic interest to take up the research work.

The bearing of research upon the theoretical framework has been highlighted in different fields by different scholars. On the basis of research done in the field of language

and literature history has been rewritten in different parts of the world, for literature has been the bed-rock of history. But in India, especially in Tamil Nadu, literature has not been properly utilised for rewriting our history. Even some of the scholars who ventured to do research in this field were not given proper encouragement. The work begun by Dr. Anna to make the people realise the importance of our history enthused the scholars and the society in its turn began to recognise their role. As a result of this, the scholars are being held in high esteem both by the society and by the people in power. Now a favourable climate has been created for scholars, thanks to the efforts of Anna to initiate pure research in the field of Tamil language and literature. This is a potential field of social research. Instances are there that a pure research in literature and science of language go a long way in understanding the human group. Does literature reject the mass culture? or does mass culture reject the literature? This is not only relevant to the contemporary literature but also it holds good in the case of early literature. Professor Bitrim Sorokin (BITRIM SOROKIN), a leading contemporary sociologist has analysed the contents of Roman and Greek literature for understanding the process of culture and cultural change. Approaches similar to the above, justify the need for research of ancient literature in Tamil Nadu also. Now we have here, Dr. M. Sundaram, a leading Tamil scholar who has taken the initiative to fulfil the desire of the late Dr. Anna in taking up research in the field of Tamil Language and literature, has succeeded in setting up the Advanced Research Centre for Tamilology in the Presidency College, Madras with the timely help and guidance of Dr. Kalaignar Karunanidhi, a versatile scholar himself and a stout protagonist of Tamil.

Accordingly, the Government in G.O. Ms. No. 1216, dated 30th July 1971 have issued orders to open the Research Centre and the centre was declared open by His Excellency Thiru K. K. Shah, the Governor of Tamil Nadu on 18th January 1973 under the Presidentship of Dr. M. Varadarasanar, the Vice-Chancellor of Madurai University.

Aims and objectives of the Research Programme

1. To cover the unexplored regions of Sangam Literature so as to reveal the glory of Tamil Nadu. The revival of the ancient culture and civilization of the Tamils is to be a main objective. Sinister attempts to deny to Tamil its real place as a classical and modern language are to be thwarted by guiding research into right channels.
2. The renaissance movement is to be studied in all its aspects and in depth.
3. The development of modern literature in all its forms like short story, novel, drama and the essay, is to be given its due place in research.
4. To connect the hoary past with the living present, the folklore of Tamil is to be subjected to scientific methods of research.
5. A scientific study of the Tamil language by modern means of research is to be encouraged.
6. And above all, to provide a sense of direction and co-ordination at national level.
7. A Journal of Tamilology is to be started to bring out the labours and results of research.
8. For the benefit of foreigners and non-Tamils, certificate and diploma courses are to be conducted.
9. Ten research scholarships are to be awarded.
10. Rare and old books and manuscripts are to be preserved and maintained and deserving rare books and manuscripts to be published.
11. Scholars on the retiring stage to be employed under University Grants Commission scheme.
12. Periodicals, seminars and conferences are to be conducted for throwing light on specific areas of research.
13. A scheme for the exchange of scholars at the national level and international level is to be drawn up and linked with similar schemes of other research institutes.
14. Refresher courses and Orientation courses are to be conducted for providing in-service training to Tamil Scholars.

This is a boon to the sociologist. Hitherto the text-book of Sociology explained the sociological concepts to our native students in Sociology with examples and illustrations from other societies different from that of ours. I hope that this Centre will take up research on sociological aspects of Tamil

language and literature as suggested by Dr. Malcolm Adiseshiah in his Key Note address during the inaugural function. This will go a long way in fulfilling the needs of students in sociology in Tamil Nadu. May I have this as an opportunity to outline certain sociological frames of references to undertake a study in this sphere.

(1) Social Stratification and its premise during the sangam age

This is a field which should have a critical review of Tamil society based on the economic and ecological factors. A stratification of society as seen in the Sangam literature (Kurunji, Mullai, Marutham, Naithal, Palai) justifies that there have been different sections in the community and the same were based on the ecological and its related occupational components and not on the basis of birth, a criterion created by the intruders in the medieval period of Tamil History. A study in this line may re-inforce the sociological theory which has been found to be the same throughout the world.

(2) Origin of Matriarchal pattern

Various theories exist as to the origin of family. This matriarchal family pattern is seen among the old Chera region also. A study of Sangam literature and its allied sources should throw light not only on the pattern of matriarchal family but also on the origin of family as such. Thus another mile-stone could be placed in our society reflecting the contribution of Western-monk on the origin of family.

(3) Rise and fall of Tamil Empires during Sangam period; an appraisal for accounting a theory of Social Change

Social change as such has got different patterns. A trend of cyclical patterns of social change is highlighted that at any time there will be a distinct content of cultural component of any one of the following: Ideate, Ideational and senate. About our Tamil society also there are evidences of rise and fall in terms of glorification and deprivation. This is an additional field to test the cyclical theories of cultural change as applied to our Tamil Society.

This is the golden era, and we witness ourselves, Tamil being given the due place in every sphere of life for we have only heard about the glorious past. Let us hope and wish that the institute of Tamilology, strives hard to bring to lime light many of our valuable contributions in different fields.

WORK OF AGRO-ENGINEERING AND SERVICE CO-OPERATION FEDERATION

The Tamil Nadu Agro Engineering and Service Co-operation Federation Limited is concerned with the following main activities :—

To co-ordinate and facilitate the working of the affiliated societies and assist in their promotion, organisation and development ;

To manufacture, acquire, own or sell or serve as agents for the acquisition or sale of tractors, electrical equipments, pumpsets, etc ;

To service and to repair agricultural machinery and equipment ;

To offer technical services relating to agriculture, including soil testing and to undertake procurement and use of seeds, fertilisers, cattle feed and pesticides and storing and processing or sale of agricultural produce ;

To enter into contracts with Government, public bodies or other institutions or persons to supply or dispose of goods, machinery and materials of any kind, etc.

Oil engine pumpsets, which are at present installed with Government subsidy to meet the acute power shortage, are purchased and distributed through the Federation. The Federation is also serving as agent for tractors, sprinklers, electric pumpsets, diesel pumpsets and other agricultural machinery.

The Federation is likely to take up the manufacture of accessories required for agricultural machinery. The Federation is also investigating the scope for production of producer gas powered pumpsets and alternators.

The Federation has been empowered to supervise the activities of the district-level and block level Agro Service Co-operative Centres.

In view of the increasing tempo of activities of the Federation and the large financial stakes involved, Government have considered that a higher power Board of Management should be constituted to look after the activities of the Federation. They have also appointed a full time senior scale I.A.S. officer as the Managing Director of the Federation. The Board has a full time Technical Director and an Accounts Director as Members, apart from the Chief Engineer of the Directorate of Agriculture, Managing Director, Agro Industries Corporation and the Additional Registrar of Co-operative Societies (Credit) as part time Members of the Board. In order to provide proper guidance and ensure effective functioning of the Federation, the Special Secretary to Government Co-operation Department, has also been nominated as the Ex-Officio Chairman of the Tamil Nadu Agro Engineering and Service Co-operation Federation.

DO YOU KNOW INDIAN JOINT VENTURES ABROAD? ³⁹⁹

The Industrial production in India has witnessed a steady growth over the years as a result of the successful implementation of industrial development plans.

With the increased production, there came about a substantial diversification of the industrial base of the economy.

These developments have led to the emergence of a new entrepreneurial class with capacity and competence to undertake new industrial ventures not only in domestic spheres but also in overseas countries.

The Government of India have been encouraging such entrepreneurial to set up joint ventures abroad by contribution of indigenous machinery and equipment and technical know-how towards their share of equity.

Only such industries, where there is surplus production capacity of machinery and where internal demand for the product is largely covered, are allowed to participate in industrial joint ventures abroad.

Cares are taken that investments in such ventures does not in any way affect the industrialisation of our country. On the other hand, it should serve as an instrument of export promotion and for promoting economic co-operation among developing countries.

By the end of 1972-73, the Government of India have permitted setting up of 155 Indian industrial joint ventures, out of which 37 have gone into productions and sixty-seven are in various stages of completion.

Such ventures have been set up in as many as 25 countries.

Glow Of Freedom Comes Through Respect To Rule of Law.

Members of Police, whose loyalty and devotion to duty are national assets, have a thankless job to perform. But Tamil Nadu Police Force has a creditable service behind it. It had unearthed many a difficult and serious crime and its C.I.D. wing was responsible for bringing to light a series of counterfeiting offences. The City Police, for its credit, apprehended a notorious inter-State criminal gang.

The following is the text of the speech of Thiru K. K. Shah, Governor of Tamil Nadu, delivered at the Police Medal Parade held at Rajarathinam Stadium, Egmore, Madras, on Saturday, 10th February 1973 at 4-30 p.m.

It is a social obligation and administrative compulsion that meritorious services of the officers and men of the police should receive public recognition. Members of Police have a thankless task to perform. Everybody wants their help and yet is prone to criticise when he is asked to maintain law and order. Their loyalty and devotion to duty are national assets. To honour them with distinction for integrity and devotion is to encourage standards which enrich democratic way of living. Such recognition enhances their enthusiasm and goads others to follow the inspiring example of such winners.

It is this solidarity as in times of war time, that is again required when in peace we work for our economic prosperity. We cannot afford to fritter away our energies in mutual bickerings and internecine quarrels, when hard work, discipline and unity are called for to create national wealth. The highest mark of civilisation is self-restraint and the greatest virtue of democracy is tolerance. Our progress, as a developing nation, will be seriously affected if we give up self restraint and tolerance, if selfish motives put on the garb of public service, if violence is resorted to on the slightest provocation and if public property is damaged. The tendency to resort violence on the slightest provocation in the present stage of our development needs sympathetic

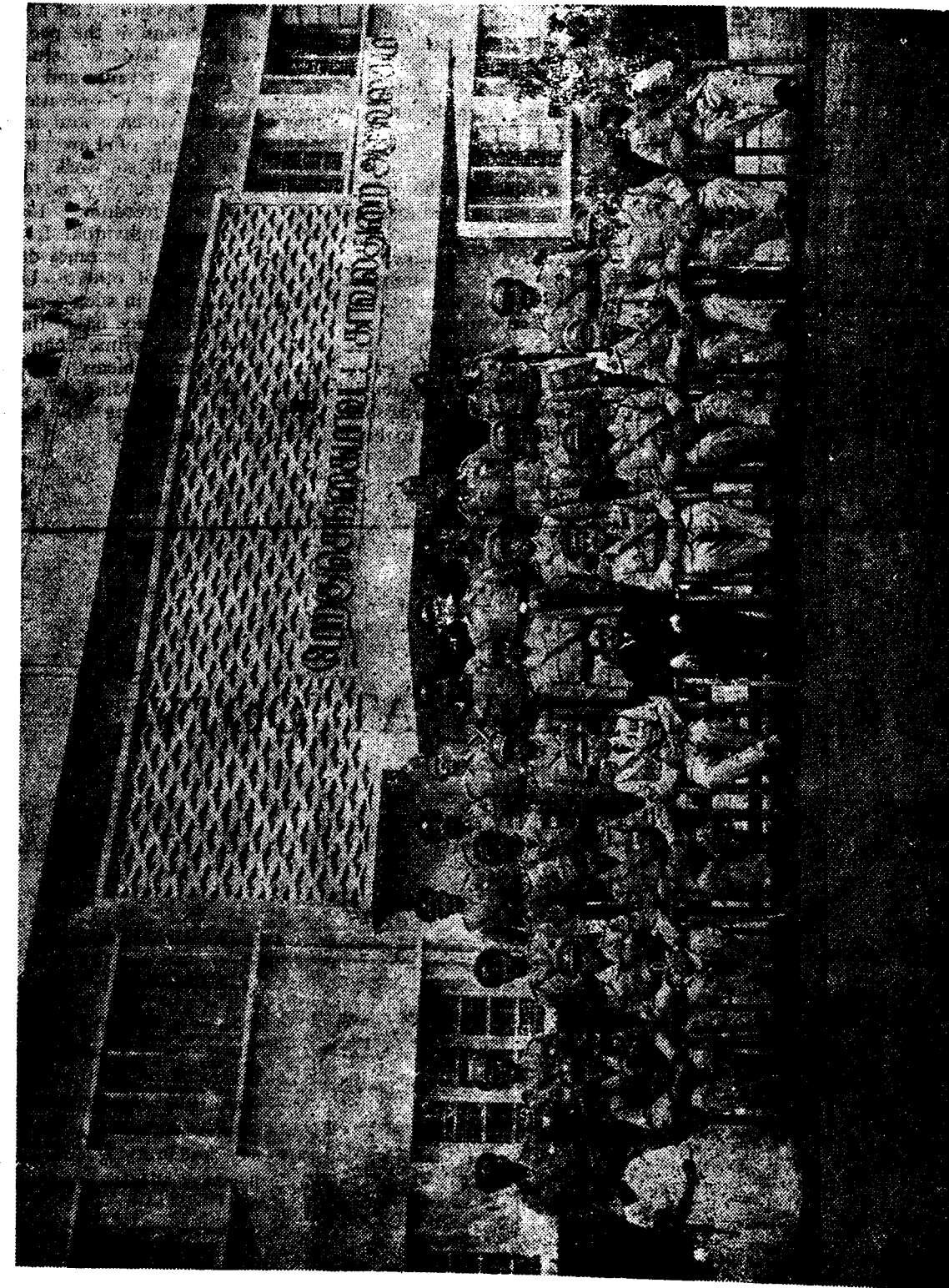
firmness. Healthy and cordial police-public relationship can succeed in evolving norms of public life so that violence as a means of airing grievances may be avoided and democratic methods for redress of grievances may be evolved. Let us all respect the Rule of Law and contribute to the growth and maintenance of internal peace which is vitally necessary for accelerating our prosperity. Your individual behaviour and your devotion to duty are bound to have a healthy impact on the people of Tamil Nadu.

A Rightful Step.

The gradual implementation of the recommendations of the Police Commission ensures improvement in the service conditions of officers and men of the force. The recent recruitment of Grade I Constables with a minimum qualification of S.S.L.C. opens out a new chapter. This is a step in the right direction, as it seeks to solve to some extent, the problem of educated unemployed.

I am glad to know that the Tamil Nadu Police Benevolent Fund continues to work for the amelioration of the conditions of all non-gazetted staff of the Police Department by providing financial relief, scholarships and recreational facilities to the employees and their families. I particularly admire the work of the Police Families' Welfare Organisation which gives gainful occupation to the families to enable them to augment their income.

I should like to pay my tribute of admiration to the Police Force, Home Guards and the Fire Service



The recipients of Police Medal Awards.

for their exemplary services. The Tamil Nadu Police had to grapple with an increased volume of property crime during the year. 22,015 cases were registered this year as against 21,270 of the corresponding period of last year, an increase of 3.5 per cent. In the context of growing urbanisation and industrialisation of various centres in Tamil Nadu together with the spiralling trend in prices of essential commodities, the reason for increase in crime is perhaps understandable. However, the Police have tackled this problem exceedingly well. The percentage of detection of property crime up to the end of October 1972 is 58.5 on the basis of convicted cases alone and 73.1 on the basis of convicted and pending trial cases. The Tamil Nadu Police have unearthed many difficult and serious crimes. The Tamil Nadu C.I.D. is responsible for bringing to light a series of counterfeiting offences.

It also brought to book a notorious cheat. The City Police, by their constant vigil and arduous efforts, apprehended a notorious inter-State criminal.

The Government are also aware of the growing traffic, particularly in cities and towns, and have already initiated a number of schemes to ensure free flow of traffic and reduce hazards to the travelling public.

A pioneering effort by the Tamil Nadu Police in its grim fight against crime is its programme of modernisation. Steps have been taken to introduce micro-wave communication and facsimile transmission of documents, photographs and finger-prints. A programme has been drawn up to provide every district with a Mobile Forensic Science Laboratory with necessary accessories and equipments to help

investigating officers. Another notable programme is the ushering in of computerization of crime records, man-power utilisation, budgetary control, pay roll, service records and traffic accidents.

I take this opportunity of appealing to all sections of the people—intellectuals, leaders, students, workers, public servants and others—to extend their co-operation in putting down violence and in respecting the Rule of Law in the land. Let us all so work in our own spheres of activity as to feel the glow of freedom. Let us remember that individual freedom is no freedom if it becomes danger to the freedom of others. Let us conduct ourselves in such a manner that the Police may have time to deal more with crime than with Law and Order problems. In doing so, we will be upholding democratic values and building up healthy democratic traditions.

FLOWER SHOW AT OOTY



Thiru K. K. Shah, Governor of Tamil Nadu, inaugurated the Flower Show at Ooty on 19th May 1973. The Governor and other dignitaries are seen engrossed in seeing and enjoying flowers of all kinds exhibited.

THIRUMANOOR—THE BEST PANCHAYAT UNION IN

TIRUCHIRAPPALLI DISTRICT

Thirumanoor Panchayat Union has the unique distinction of getting the rolling shield for the best union in Tiruchirappalli district during the years 1968-69, 70-71 and 71-72. The rolling shield is given for the best Panchayat Union in each district based on its performance, which is judged by working out on composite weighted indicators and the panchayat union, which secures the highest index in each district, is selected as the best in that district. The selection is made by the Director of Rural Development.

Agriculture.

In the field of agriculture 87 per cent of the families were covered by Agricultural Production Plans to the total number of Agriculture families. In respect of green-manuring 100 per cent of the families were covered. In respect of agriculture intensive propaganda was carried on propagation of high yielding variety programme and the message of this programme was carried from door to door and the co-operation of ryots was enlisted. The technical know-how required for augmenting food production was also taken from door to door. The result was spectacular as ryots responded to the various schemes quickly when an awareness was created among them. The agricultural programmes broadcast from the All-India Radio, films, posters supplied by Government to various magazines and other publicity materials have also helped in publishing the various scientific methods of agriculture and to augment food production. For example, under paddy, out of a total area 19,325 acres, an extent of 15,750 acres was covered under improved seeds. So was the case with other crops also.

Education

Forty-two per cent of the children in the schools were provided with mid-day meals. Contribution in cash and kind were collected from

the public in order to provide sufficient and delicious meals to children. For the children hailing from poor families this scheme was a boon. 84 per cent of the schools were provided with their own building with the required facilities. In some cases, in which the panchayats were not in a position to contribute the required amount, the panchayat union contributed the amount from its general fund.

In order to disseminate knowledge among villagers 35 Social Education Centres were functioning. In all the centres books and magazines and dailies were supplied and the convenors were entrusted with their proper functioning. Besides 35 Rural Radio Forums functioning in the union, which arranged the assembling of ryots at the time of agricultural broadcasts from the All-India Radio, Tiruchirappalli. Pre-broadcast briefing and post broadcast discussions were held with the help of the convenors and doubts raised by the ryots were got cleared. This has helped to bring the modern scientific research and results obtained thereon to the very doors of the ryots residing in remotest corners of the villagers. The activities of the Rural Radio Forums have also helped to introduce modern agricultural practices and in augmenting food production.

Fifty-four schools had taken to kitchen gardening during the year 1971-72. The produce from these gardens were used for mid-day meals for children.

Mahalir Mandrams

In all the villages Mahalir Mandrams (Ladies club) are functioning. Apart from given training for

women in embroidery, sewing, dress making and gardening, these Mandrams were engaged in family planning, propaganda and collection of amounts for the small savings scheme. Women trained by these mandrams were sent for examinations conducted by Government in embroidery and dress making. Poor ladies have also augmented their income by engaging in dress making and sewing.

Co-operation

As regards co-operation 80 per cent of the credit needs of the ryots of the area was met by co-operatives. Apart from issuing loans, co-operatives were engaged in distribution of fertilisers, sugar and other essential requirements of ryots.

The Union also undertook distribution of chemical fertilisers for the benefit of ryots. 316 tonnes of fertilisers were distributed to ryots. This has helped the ryots to keep away from black marketeers and other exploiters, besides helping them to ascertain the required quantity for their lands at the time of purchase.

Link Roads

All the villages in this union have been provided with link roads except Ramanallur which is a small hamlet situated like an land in the midst of coleroon river. Even in this hamlet all amenities have been provided. One higher elementary school is functioning well in this hamlet. All children of school going age have been got admitted in this school.

In short in all the fields of development and social activities this union has achieved spectacular results. During the year no meetings of the council was adjourned for want of quorum and all decisions were taken unanimously after mature discussion.

The escaped income becomes black money and is funnelled into a parallel economy. Like a contagious disease, tax evasion and black money have spread embracing almost every economic activity. This article explains in detail the causes for the growth of black money and the curative panacea to arrest it.

come becomes "black money" and is funnelled into a parallel economy.

The after-math of the last world war, the laxity in moral standards that followed in its wake and the stupendous opportunities provided by the massive industrial outlays and construction programmes, have led to the generation of more and more black money. Like a contagious disease, tax evasion and black money have spread embracing almost every economic activity. The lure of quick money, the ostentatious living that goes with it and the comforts and convenience it can buy in

BETWEEN THE TAX DODGER AND TAX COLLECTOR GLIMPSES OF AN UNENDING BATTLE OF WITS

Tax evasion, despite its social odour, is a world wide phenomenon. While widespread infraction of the basic laws of the country is the symptom of public decay, general tax evasion is a symbol of moral laxity as it shifts the tax burden to the honest tax payer. To expect a person to contribute voluntarily his due share of the Government's financial requirements when his neighbours evade their share, is to expect meek acceptance of a grossly discriminatory treatment by the law abiding citizen.

It is a well accepted maxim that the burden of taxation should be equally distributed among the various tax payable this equitable distribution prescribed in the law should be equally ensured in actual administration. Consideration of equity apart, there are compelling economic reasons for effectively enforcing the tax laws. An enterprise, which pays its taxes properly, is in a poor position to compete with an enterprise which does not pay its taxes properly. It must either follow the example of its competitor or be forced eventually out of business. In the latter event, the State also loses part of its revenue.

BLACK MONEY—A PARALLEL ECONOMY.

Such consequence can have a disastrous effect in a developing economy like India where there is an imperative need to mobilise all available resources for attending the plan objectives. The escaped in-

an economy of shortages have tempted many a person to resort to some of the most ingenious devices to evade taxes.

DEDUCTION HAZARDS.

Let it be stressed that the detection of unreported income or undisclosed economic activity is by no means an easy task. The black money such activity generates and the parallel economy into which the money flows, have incredible ramifications. The large scale transactions that go to create the black money are planned carefully and executed with consummate fitness. The transactions generally follow a complex and circuitous route and the tax evader takes elaborate precautions to cover his track at each state. If a probing investigation is started the investigating official frequently find that witnesses are either hostile or have vanished and the records have either been destroyed or tampered with. He has to patiently pick up small clues from hear and there, piece them together and embark on fresh lines of investigation if the first effort draws blank. He has to be constantly alert and he should be thoroughly familiar with the intricacies of complicated financial deals and must develop the ability to find the link between apparently disconnected transactions. There is no limit to human ingenuity and some of the best brains are pressed into service to devise new methods for suppressing the real income. In the battle of wits with the tax evader, the tax

administration has to constantly gear up its machinery and evolve new techniques to combat the more and more sophisticated methods adopted by the tax evaders.

CASH TRANSACTIONS

Cash transactions unless documented do not leave behind any tell-tale evidence. Unreported transactions figure in every shady deal like payment of secret commission, payment of on-money, property deals understating the value and the black-market transactions in controlled commodities. A group whose receipts are difficult to verify effectively, comprises the professional men who perform disconnected services for a large number of clients. They usually collect their fees in cash for services rendered from an individual who may not even bother to obtain a signed receipt. Verification and detection of such cash fees poses a very difficult question for the tax administration unless at a subsequent point of time the concealed income emerges out in the shape of a tangible asset.

The honest tax payer unfamiliar with the complexities of evasion techniques often marvels at the extent of tax evasion and is prone to attribute this to the failure of the administration. He is perturbed at the extraordinary powers of search and seizure given to the bureaucracy by the Parliament in apparent disregard of the personal liberty of citizens. A few illustrations of the intricate evasion techniques adopted would give an idea of the magnitude of the problems that have to be faced by the administration in tracking the tax evader.

PARTNERSHIP OF A STILLBORN CHILD

Many a tax dodger has resorted to the method of splitting income through spurious partnerships but this stratagem was adopted in a daring manner by a hardware merchant who masqueraded his minor son as an adult partner. The partnership deed was executed in 1956 when the boy was only 15 years old and for a few years the tax department was hoodwinked and the firm was granted registration. The tax official later got an inkling of the real truth that the registration of the firm had

been obtained on false premises. Enquiries were then started when the tax payer came with an impressive explanation that the boy was born in 1937 and not in 1941 as presumed by the tax official. The brilliance of the scheme lay in the fact that the tax payer's wife had actually been delivered of a boy in the year 1937. Extensive enquiries indicated that the boy born in 1937 was a still-born child. The tax payer, however, relied on the testimony of two doctors. To break this expert evidence, the investigating official had to dig out the old records and registers of the nursing home and subject them to a searching scrutiny. The entries in the register pertaining to the child born in 1937 showed that against 'placenta' there was a sign of interrogation and against 'membrane' the entry made was "complete". The left hand corner of the page containing the entries relating to discharge was found to be torn. It was, however, noticed that no entries had been made regarding the weight of the child at the time of birth and discharge and the condition of the cord at the time of discharge, although these particulars were recorded in the register in respect of the children born later. Further corroborating evidence was obtained from insurance policies and school leaving certificates, which conclusively established that the person who signed the partnership deed in 1956 was a minor. The registration granted to the firm was accordingly withdrawn.

Silver Bricks with 'Valid' Railway Receipts.

Alertness on the part of a tax official while travelling in a railway train led to the unearthing of a substantial amount of concealed income. The tax official noticed that some persons were carrying very heavy luggage containing silver bricks after obtaining valid railway receipts for the luggage and having paid the necessary freight. On return to his headquarters, he obtained from the Station Master the details of all such despatches and a datewise tabulation was made noting the names of the passengers. Enquiries with the railway staff brought out the names of certain persons connected with some ornament dealers and further enquiries showed that they were regular paid employees of these dealers. It was

found that several maunds of purified silver had been despatched and the value of these despatches in the case of one of the tax payers alone came to several lakhs of rupees in a year. These had not been disclosed in the sales. The past assessments were reopened and the concealed income was brought to tax.

More Powers And Penalties.

The success in checkmating some of the cleverest schemes for tax evasion has only made the tax administration keenly conscious of the magnitude of the problem. The administrative and legislative steps necessary to combat tax evasion have been under constant study and review by the Government. Along with these administrative steps, far reaching changes have also been made in the law dealing with tax evasion. The scope for reopening the closed assessments has been progressively widened and penalties have been made more deterrent. Provisions for criminal prosecution of the tax offenders have also been placed in the statute book. The powers for securing information have been enlarged and the tax administration has been vested with the powers of search and seizure. The secrecy provision in the law has been relaxed to give greater publicity to tax offences. The Government under certain conditions has also been empowered to acquire immovable property, where the consideration declared in the transfer deed is less than the fair market value.

Need For Public Consciousness And Support.

The administration has launched a mass communication programme to generate tax consciousness among the public so that they pay their taxes voluntarily as an integral part of their duties as citizens. A system of summary assessments in smaller cases has been introduced whereby a large number of returns are accepted without calling the tax payers to the income-tax offices, enabling the release of man-power to tackle the more difficult area of tax evasion.

There is increasing realisation in all quarters that tax evasion must

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be effectively curbed if the goals of tax and economic policy are to be attained. In this task both the tax administration and the tax payers have important roles to play. The success of attempted tax evasion depends to a large extent on the assistance drawn from anti-social elements who are prepared to make recourse to such highly questionable methods as fabrication of evidence and filing of false affidavits. The burden of additional taxes that may arise due to one section of the society not paying its due share of taxes would fall exclusively on the complaint tax payers. If the society were to realise the consequences of tax evasion, the tax evader would find his game difficult as he will no longer be able to enlist any kind of support direct or indirect from anyone. Such consciousness on the part of the society will go a long way in helping the administration to track tax frauds and bring the evaders to book. The odds are heavy but the challenge has to be accepted.

THE CASE OF A FOREIGN IMPORTER OF MICA.

Fluctuations in maganese and mica trade have offered substantial potentialities for evading taxes. During the boom period under-invoicing the exports was adopted to whittle down the taxable profits and to earn illegal foreign exchange. A foreign importer of Indian mica obtained control of an Indian company with little pretensions to big business. The company had a paidup capital of Rs. 200 only and the shares were held in the names of certain nominees. The Indian company used to trade on a small scale and the result was generally a loss. After the foreigner came into the picture, the transactions assumed a large magnitude and every month mica worth several lakhs of rupees was purchased and exported. Nonetheless, the trading transactions showed a loss and the balance sheet began to show substantial accumulated losses. The large overdraft facilities extended to such a losing concern by a leading foreign bank aroused suspicion. Enquiries by the tax official with the bank did not however take him for, since the bank replied that the overdrafts had been paid against the security lodged in the

foreign country by the foreign importer. The tax official, therefore, explored other avenues of enquiry. He camped at the factory site and made detailed enquiries with various persons. He found that the company was being managed by three or four foreigners who were employees of the foreign importer and the method adopted was to purchase goods in India from the mica mine owners, process them in the factory and despatch the finished product to the foreign country at less than the total cost price. The freight, insurance and customs duty were levied on mica advalorem. This gave an edge to the importer in the foreign country over buyers who paid the market price as well as the appropriate railway freight, insurance and customs duty. The tax official ascertained the market price of mica abroad, and proved that the sale by the Indian company to the foreign company was at less than the prevalent market price. He also proved the close connection between the Indian company and the foreign importer and made additions of the order of Rs. 50 lakhs which additions were sustained in appeal. The final was even more dramatic. The foreigners realising that the game was up decided to flee from the tax jurisdiction and frustrate the tax collection. Overnight a large number of trucks were engaged and all the goods were despatched to Calcutta for being shipped abroad. The officer equally alert to the situation struck with speed. He moved through the Collector of Customs and issued distress warrants to prevent the export of goods. The export could then be made only after furnishing a bank guarantee with the result that there was no difficulty in the collection of taxes.

CIRCUITOUS BOOK ENTRIES.

The transformation of a purely personal loan into a business transaction with a view to claiming a large sum of interest as a deduction is sometimes carried out with considerable skill and pre-planning by some tax payers. A tax payer used to borrow money on interest from a limited company in which the shares were held by the members of his family. Loans were also advanced by him to a few parties on interest. A money-lending

business was thus brought into existence where interest paid to the limited company was allowed as a deduction. The company also took care to claim that the advances to the tax payer were made in the course of its business. This set-up was used to engineer an ingenious technique. In one year the tax payer borrowed over Rs. 20 lakhs from a party in a different part of the country and gifted the amount to his daughter-in-law. Over a period of years, through a chain of circuitous book entries, the tax payer transferred this personal loan into the account books of various intermediaries and eventually into the books of the limited company to whom the payment of interest was already being allowed as a deduction. The result was that interest on moneys borrowed for making the gift could be claimed as a deduction. There was a second and a more subtle angle. Since the money borrowed had been gifted away, the tax payer's estate inevitably showed a deficiency creating a background for the company to claim the amount of loan given by it as a bad debt. The manipulation nearly succeeded and for a few years the interest was allowed as a deduction. The large deficiency in the estate gave a clue to the investigating official who after extensive investigations could track the movement of the personal debt into the company's books. The attempt was, therefore, foiled in time.

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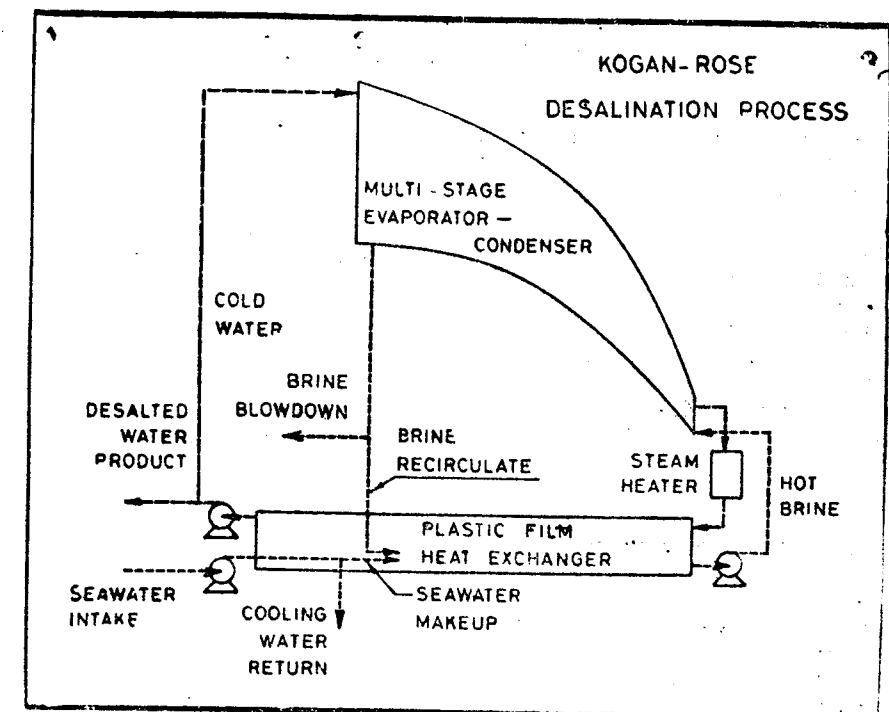
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New Desalination Process May Be The World's Cheapest



A revolutionary process for the desalination of sea water was demonstrated recently by its inventor, Professor Abraham Kogan of the Faculty of Aeronautical Engineering at the Technion, Israel.

It is expected that the new process will enable the production of fresh water at a cost 25-30 per cent less than the cheapest desalination process now in use. Both the capital investment and the operational cost of the desalination installation will be reduced.

Prof. Kogan told the press that pilot plant tests have reached a stage which enable the design of an industrial size installation. Speaking at the 18-metre-high installation in operation at the Electric Corporations' power plant, he said that several large industrial firms abroad and in Israel, have expressed great interest in his new process and wished to take part in its development, but "nothing has been settled yet".

He hoped that a plant of the size of the desalination installation in Eilat would now be planned. He said that by the early eighties, when Israel's first nuclear-powered electricity plants would go into operation, a large desalination plant with a 150 million cubic metre annual capacity, ten per cent of the country's

total water consumption, could also be in operation.

The main advantage of his system is that it eliminates entirely the need for the expensive alloy tubing, hundreds of kilometres of which are used in conventional flash-evaporation desalination plants. The alloy tubes account for 35 to 40 per cent of the cost of conventional plants and are their most expensive item.

Prof. Kogan's process, which is based on direct contact heat transfer, has replaced the alloy by super-thin plastic tubes which cost only 0.2 per cent as much. His direct-contact heat transfer system also requires a much smaller thermal driving force. The energy is provided by steam generated by the plant itself, thus eliminating pumps and reducing complexity and size and considerably reducing running costs.

Technion President Alexander Goldberg hailed the process as "one of the most important developments to come out of the Technion. I hope it will help solve one of Israel's most pressing problems and alleviate water shortages the world over by providing for the first time desalinated water at a reasonable price that will make it viable for use in agriculture and industry."

FAIR WAGES FOR LABOURERS

As per the policy statement issued by the Government in 1967 the broad features of the Government policy are the encouragement of collective bargaining, implementation of Wage Board recommendations, promotion of workers, participation in management, opposition to automation and disapproval of gharaos. The policy is enshrined in the motto "May Labour prosper and Industry flourish".

Fair Wages

Textiles :—The implementation of the Second Wage Board for Cotton Textile Industry is being secured by direct settlements and through settlements before the Conciliation Officers. The number of mills which have entered into settlement on these issues and the number of workers involved in it are as follows :—

- (1) Number of Textile Mills—102
- (2) Number of employees—83,000

Engineering

The recommendations of the Wage Board for this industry were not unanimous. The Government of India, therefore, decided to commend the recommendations of the Chairman and independent members of the Wage Board for implementation. The Government of Tamil Nadu had issued a press note regarding Wage Board recommendations for Engineering Industry on 18th December 1969 in Press Note No. 15, dated 18th December 1969 requesting the Managements and the Unions to negotiate and arrive at unitwise settlements on the basis of the above recommendations. Where no settlement is possible, the dispute are being processed under the Industrial Disputes Act and reference for adjudication ordered in appropriate cases.

Sugar

The Government of Tamil Nadu issued a press note regarding Wage Board recommendations for Sugar Industries on 18th September 1970 in Press Note No. 231, dated 18th September 1970 advising the Employers and Employees of this industry to take action for early

Implementation of Wage Board Recommendation in Tamil Nadu in 1971

implementation of the recommendations of the Second Wage Board for Sugar Industry and also advised them to settle at the Unit Level any point that may arise in the course of such implementations. As it was not possible for the parties to come to a settlement at the Unit level, a Tripartite Committee was set up with the Deputy Commissioner of Labour, Madras, as Convenor, to discuss and finalise the implementation of the recommendations of the Wage Board for this industry. As the Committee was not able to find an agreed solution in the matter, a meeting was convened by the Honourable Minister for Labour on 22nd December 1971. At that meeting the employers were advised to implement the Wage Board recommendations and pay the arrears due to the workmen by 10th January 1972 after which other issues could be taken up for discussion. But subsequently as there was no agreement on the latter issue, the Hon'ble Minister for Labour held talks with the parties and eventually an accord was reached on 8th February 1972.

Road Transports

The final recommendations of the Wage Board for Road Transport Industry have been accepted by the Government of India. The recommendations are unanimous. So far 208 establishments implemented the recommendations of this Wage Board by which 11,945 workers were benefited.

The Departmental Officers have been instructed to persuade the remaining Managements for early implementation of the recommendations. A meeting was also convened on 19th June 1971 to discuss this question in which the Minister for Labour and Minister for Transport took part. At the meeting Minister for Labour gave time to the employers till 1st August 1971 to implement the recommendations of the Wage Board. As the response to the advice given by the Minister for Labour is not encouraging the Government are considering the

question of enacting a State Legislation to give statutory backing to the above recommendations.

Electricity

The final recommendations of the Wage Board for Electricity have been accepted by the Government of India as well as Government of Tamil Nadu. In respect of Tamil Nadu Electricity Board, a settlement was reached in 1970 at the intervention of the Chief Minister of Tamil Nadu Dr. M. Karunanidhi.

With a view to considering the question of implementation of the Wage Board recommendations in Electrical undertakings of Municipalities of Madurai, Coimbatore, Pollachi, Karur and Thanjavur, an Official Gazette was constituted by Government. The Government have since passed orders on the recommendation of this Committee that the scale of pay of the workmen employed in the above municipal undertakings be revised on a par with those in Tamil Nadu Electricity Board.

Leather Industry

So far, 231 establishments covering 10,021 workmen have implemented the recommendations of the Wage Board for this industry. The issue of revision of wages is also covered by the Arbitration Award of the Commissioner of Labour given by him on 11th March 1970 in respect of Tanneries in this State except those in North Arcot district. The progress of implementation in respect of the remaining units is being watched.

Heavy Chemicals

Out of 8 units connected with the Heavy Chemical Industry in this State, six units employing 3,255 workmen have so far implemented the recommendations of the Wage Board for Heavy Chemical and Fertilizer Industry.

Evaluation and Implementation Committee of Labour Department

The State Evaluation and Implementation Committee has been entrusted with the work of implementation of Code of Discipline, etc. The provisions of the Code of Discipline were published through printed copies sent to the employer's and worker's organisations. The Labour Officers and Inspector of Factories have been instructed to contact various employers, employees Unions and Local bodies not affiliated to any Central Organisations and advise them to ratify the code. By the efforts of the officers of the Labour Department, 299 Trade Unions have signified their acceptance of the Code of Discipline in writing in the year 1971 and 260 managements and 24 local bodies have accepted the Code of Discipline as on 31st December 1971.

Out of a total of 76 cases (41 cases pending on 1st January 1971 and 35 cases reported during the year 1971) of alleged breach of the Code of Discipline, non-implementation of awards, non-recognition of unions, etc., 43 cases were disposed of during the year 1971 and 33 cases were pending investigation at the end of the year.

In accordance with a decision made at the State Labour Advisory Board meeting held in May 1970 the name of employers as well as Unions who were held to have committed breaches of the Code of Discipline by the State Evaluation and Implementation Committee are being published in Tamil Nadu Labour Journal.

The State Evaluation and Implementation Committee met thrice on 12th April 1971, 21st September 1971 and 27th December 1971 and discussed subjects relating to cases of breaches of Code of Discipline, recognition of unions and other subjects connected with the work of Evaluation and Implementation. The Committee was reconstituted in 1970. The Commissioner of Labour is the Chairman and the Special Deputy Commissioner of Labour, Madras, is the Secretary of the Committee.

WONDROUS WATER DIVINER

1. For sinking borewells, digging new wells or deepening the existing old wells (if economical and fruitful) a crossing point of two high yielding springs which run from South to North and the other from West to East can be located accurately by scientific methods.

2. In specified area of land, I can give details regarding the crossing point of two high yielding aquifers, the number of crossing points which can yield the water according to their yield, in a descending order based on the quantity of yield, the required horse power of pump to pump out the water available at that point, the depth at which water is available and the quantity of water that can be pumped out in an hour.

3. I give you a guarantee of the point I locate. If that point fails to supply the specified amount of water, I am prepared to pay a compensation to the extent of Rs. 3,000 to the affected party who should make an agreement with me.

With best wishes,
K. KANDASAMY,
Water Diviner,
(Member of the British Society of Dowers, London),
Ganapathy Post,
COIMBATORE-6.

PHONE: 31912.

ADV

DIGESTIVE DISEASES

CAUSES AND CURES FOR THEM

Most of the digestive diseases are chronic or recurrent and cause greater disability. These diseases are considered as number two cause of mandays lost from work even in well advanced countries like the U.S.A. But proper care of the digestive diseases will help in adding "life to years as well as years to life".

It may not be an absolute truth but certainly it will not be much of an exaggeration that every other person in India suffers from gastric disorder. No national survey data for these diseases is however, available. But those affecting esophagus, stomach, intestines, liver and pancreas do present a major health problem. Mainly responsible for this high incidence are the socio-economic and environmental factors.

Digestive diseases catch a person rather young at the prime and most reproductive period of one's life. Children fall victims at crucial stage of their growth and development. Weaker sections of the society living in rural areas and slums are their other easy preys.

Most of the digestive diseases are chronic or recurrent and cause greater disability. They are less often the cause of death but are responsible for prolonged suffering. Digestive diseases are considered as number two cause of mandays lost from work in U.S.A. and possibly it may be number one in India. Chronic disability due to digestive disorders lowers the production capacity. It is suggested that digestive disorder coupled with malnutrition is one of the most important impediments in the economic progress of our country.

Our digestive system is challenged by a number of injurious agents-infections, malnutrition, spices and alcohol, drug addiction and nervous tension. Digestive organs lose the battle and patients suffer from diarrhoea and dysentery or gastroenteritis, peptic ulcer, hepatitis, liver abscess, cirrhosis of the liver, gall stones, malabsorption, pancreatitis

and irritable bowel syndrome. Prevalence and incidence of each of these diseases is not well worked out in India.

GASTROENTERITIS

Acute infectious gastroenteritis is the most commonest ailment amongst patients attending the private practitioners, primary health centres and other hospitals in summer months. This is related to quicker rotting of food in hot weather and rapid growth of the infectious organisms.

CHOLERA

Cholera is the most severe form of gastroenteritis and it still exists in India. Parasitic infections of the intestine are widely prevalent in our country, particularly in rural areas. A survey in rural areas of hill district in North India revealed the presence of parasitic infection in 66 per cent of the population. Mixed infection was present in 31 per cent. Amoebiasis, hookworm, ascariasis and giardiasis were present in 25 per cent, 20 per cent, 33 per cent and 11 per cent respectively.

Health hazards of parasitic infections are well established. Mixed parasitic infection of the intestine is most important contributory factor to malnutrition. Anaemia due to hookworm disease is a very serious problem of chronic suffering and disability in our rural population. Giardiasis and ascariasis are important causes of chronic illness, poor absorption of food and impaired growth and development of the

children in India. Intestinal amoebiasis leads to lasting disability due to chronic bowel disturbance ending up with psychic problems. Control and eradication of intestinal parasitic infection is a challenging health problem in India.

PEPTIC ULCER

Peptic ulcer is a world-wide problem and its prevalence in India is quite high. Several field studies from different parts of our country suggest its occurrence in 4 to 10 per thousand population. Tamil Nadu, Andhra, Jammu and Kashmir are considered to be very high risk areas. The exact cause of peptic ulcer is not known, the disease results in chronic suffering, loss of working hours and occasional fatality. Smoking, alcoholism and spices aggravate symptoms of the disease and often precipitate serious complications of ulcer.

HEPATITIS AND CIRRHOSIS OF THE LIVER.

Viral hepatitis is a cosmopolitan disease and several epidemics have been reported in India, the worst being that of Delhi in 1955-56. It has serious and often fatal results during 6 to 9 months of pregnancy. It is not yet established that viral hepatitis leads to cirrhosis of the liver, but the possibility is still being actively studied. Cirrhosis of the liver is generally a irreversible disease and usually fatal after few years of chronic illness.

A peculiar type of cirrhosis known as Indian childhood cirrhosis is a serious disease, affecting young children and once established almost always leading to fatal end. Again the cause of this disease is not known and the treatment is very unsatisfactory.

CHOLECYSTITIS

Chronic Cholecystitis and cholelithiasis is very common disease of north India. It is estimated that this disease is seven times more common in north India than in south India. Dietary factors particularly 'fats' seems to play some part. Gallstones are responsible for chronic dyspepsia or dramatic illness with abdominal pain and jaundice. Association of chronic cholecystitis and cholelithiasis with cancer of the

gall bladder is very alarming. The prevention of fatal disease of cancer of the gall bladder can best be attempted by early detection and surgical resection of gall bladder of patients having cholelithiasis.

PANCREATITIS

Chronic pancreatitis with stones in the pancreatic duct and destruction of the pancreas is very common in certain parts of south India. A detailed study of this serious diseases producing prolonged suffering and fatal end has been carried out in Kerala. Precise cause of the disease is not known. Nutritional factors have been incriminated but not proved. The disease affects the young persons who suffers from abdominal pain, diarrhoea, skin diseases and severe form of diabetes. In few years time the end is fatal. Treatment is generally symptomatic and specific therapy to check the progress of the disease is not possible.

One of the important disorders responsible for undernutrition in India is that of Malabsorption Syndrome. It has been recorded in epidemic form in south India (Vellore) but in endemic form it is prevalent all over India. The cause of this condition is not known, patients usually young get diarrhoea and loss of weight due to poor absorption of food. It is a serious problem, as already vast proportion of our population does not get adequate diet and they cannot bear the loss of minimal food available to them. Patients continue to suffer from chronic illness as the treatment is only symptomatic.

ABDOMINAL TUBERCULOSIS

Abdominal tuberculosis affecting the intestine and other abdominal organ is quite common all over India, particularly in the North. This need not be associated with active tuberculosis of the lung. In fact though prevalence of Pulmonary Tuberculosis is declining due to several active anti-tuberculosis programme, abdominal tuberculosis seems to be still widely prevalent amongst cases admitted in the hospitals. Patients suffer from prolonged ill-health and despite good anti-tubercular treatment they end up to the surgical treatment. A sister disease, ulcerative colitis presenting

as diarrhoea with blood difficult to control and rarely cured, is now recognised more frequently in our country than was known a decade back.

Stresses and strains of life find easy vent to gastrointestinal disorders. These conditions are considerable 'bread earner' to gastroenterologists but are responsible for substantial economic loss to the country.

Incidence of cancer of the oral cavity and the esophagus is quite high in India. Thirteen out of a thousand persons are believed to be suffering from it. Certain habits like tobacco and pan-chewing are associated with high incidence of oropharyngeal and esophageal cancer in India. Cancer of the other parts of gastrointestinal tract is relatively low in our country.

Digestive system often gets afflicted with several diseases which pose public health problems. Several of digestive diseases of unknown etiology are also quite common in India. These conditions generally produce chronic ill-health and lasting disability. Unfortunately facilities for proper management of digestive disorders are very poorly developed in our country. Proper care of the digestive diseases will help in adding life to years..... as well as years to life".

Rs. 26 lakhs issued
as loan by the
Tamil Nadu Theatre
Corporation Limited

To encourage and help the construction of semi-permanent theatres in rural area the State Government set up the Tamil Nadu Theatre Corporation Limited, a fully state owned, institutional financial Corporation which was inaugurated in April 1972 by Dr. M. Karunanidhi, Chief Minister and it has so far sanctioned loans to the tune of Rs. 25.70 lakhs for construction of 26 semi-permanent theatres in rural areas, since it started granting loans from January 1973.

The Corporation grants loans up to Rs. one lakh for each applicant to cover the cost of construction of a semi-permanent theatre and equipment. So far 26 applicants have been granted loans.

COTTON LEAVES FOR CITRIC ACID PRODUCTION

On research it has been found that Cotton leaves can be used as an economic source for the production of citric acid saving for the country lakhs of rupees every year in foreign exchange. This is the conclusion of a team of researchers at the Indian Agricultural Research Institute (I.A.R.I.) which has studied the "utilisation of dye-products of cotton".

The research project sponsored by the Indian National Science Academy was undertaken in collaboration with the Soviet Uzbekistan Academy of Science and the Indian Council of Agricultural Research.

The Country continues imports to meet its requirements for citric acid. According to the latest figures available, India imported Rs. 80 lakhs worth of citric acid between April and December 1971. In December 1971 alone, imports amounted to Rs. 15 lakhs. The figure is on the increase.

Dr. S. K. Mukherjee of the Agricultural Division of the I.A.R.I., who headed the team, said in his report that exploitation of cotton leaves for the production of citric acid would also help create employment opportunities and improve crop sanitation. Cotton leaves, which are used as a green manure, create a major pest problem, specially for the next crop leading to increased expenditure on pesticides. If the fields were kept clean by picking out the leaves and burning the rest of the debris, the

pest problem would be lessened, Dr. Mukherjee said.

The I.A.R.I. have examined leaves of various varieties of cotton grown in different regions and have come to the conclusion that southern varieties are richer in citric acid content than other varieties.

The team also found that malic acid, another important organic acid, could also be obtained from cotton leaves as a bye-product.

India has the largest area in the world under cotton cultivation but the yield per hectare is the lowest. Therefore, the utilisation of the bye-products of cotton would help strengthen the economy of cotton growers.

The classical source of citric acid is from the citrus fruits which industrially is uneconomical.

X X X
POST BOX No. 5415

FOR COMPLAINT OF FOOD ADULTERATION

Food adulteration is a public health hazard and of late it has assumed an alarming and menacing proportion costing lives of many in the country. To secure public co-operation in preventing food adulteration, the Directorate-General of Health Services, Ministry of Health and Family Planning, have streamlined arrangements for receiving public complaints. A special Post Box has been provided in New Delhi for this purpose.

Any complaint about adulteration in foodstuffs affecting health of public directly or indirectly, at manufacturer's, whole-saler's or retailer's level may be addressed to the Director-General of Health Services, Post Box No. 5415, New Delhi-110011.

CANE CULTIVATION CATCHING UP IN CAUVERY DELTA

The area under sugarcane in the Cauvery delta has increased from less than 4,000 hectares a decade back to as much as 8,000 hectares now.

The officials of the Agriculture Department feel that if properly cultivated, sugarcane crop could give higher yields. Sugarcane cultivation is more popular around Tiruvaiyaru, Kumbakonam, Mannargudi and Tiruthuraiipoondi, in the delta. The officials feel that sugarcane cultivation is not possible on an extensive scale in the Cauvery Delta on account of the dearth of drainage facilities which the crop very much needs. "That is the reason why an official of the Agricultural Department said, the yield per acre in the delta is just 20 to 25 tonnes as against some 40 tonnes in North Arcot district. Ryots in the tail end areas like Sirkali or dry Avudayarkoil say that paddy cultivation is not worth the trouble for there is very little margin after meeting the expenditure for pumpset irrigation and labour.

While cane cultivation is becoming popular, nobody is able to answer the common man's query as to why in the midst of plenty sugar is sold at about Rs. 4 per kilo in the open market. Not only this is beyond poor man's reach, but even at this rate, sugar is not available in interior villages.

Officials of the sugar mill at Vadapathimangalam near Tiruvarur, explain that for every 100 tonnes of cane crushed, 87 quintals of sugar is normally obtained. They say that 70 per cent of the production in the factory should be sold at Rs. 153 per quintal as levy price while the cost of production works out to Rs. 180. Thus, the factory personnel say the loss has to be made good in the free market sugar. They add that on account of excise duty and cess imposed and other incidentals, the common man has to pay a higher price for sugar.

WATERSHED MANAGEMENT BOARD SETUP IN TAMIL NADU

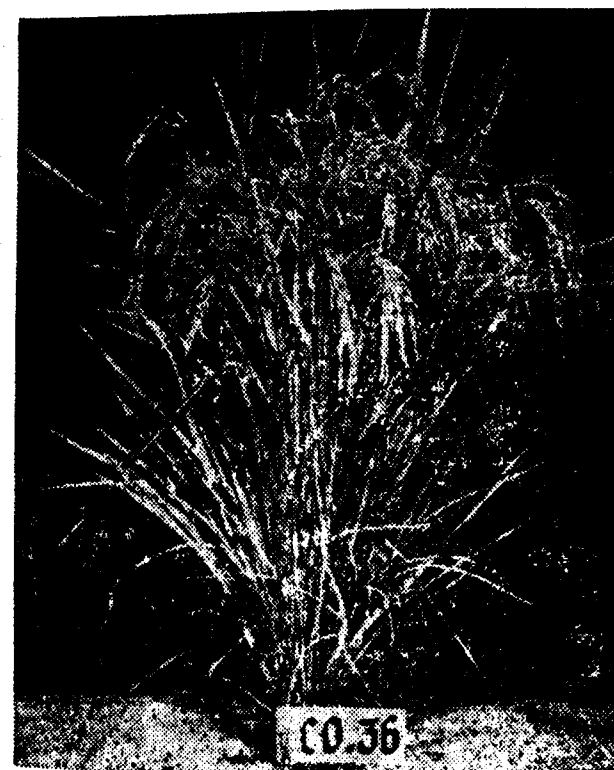
In difference to the request of the Central Board of Irrigation and Power to the State Governments, the Tamil Nadu Government has constituted a 10 member Watershed Management Board for the river valley projects. The main and the most important function of the newly formed Board is to take steps to usher in co-ordinated planning and management of watersheds of reservoirs in the State.

As far as Tamil Nadu is concerned all the available water resources have been exploited and utilised

to the maximum extent and benefit and the total water supply for irrigation and hydel power production purposes falls far short of the actual demand. In view of this acute scarcity of water availability to the alarming degree judicious management and management of water resources and economical use of them to the maximum utility have all the more assumed an all-important proportion in the State. Hence the setting up of the Watershed Management Board is bound to play a useful and utilitarian role in the State in the sphere of proper

up-keep of water resources in proper order and form in the State. The 10 member Board with the Commissioner of Food Production as Chairman is to go into the problem of sedimentation with a view to prolonging the life of the reservoirs in the State and deriving optimum benefits therefrom. Further, among many other things the Board will select reservoirs and set up separate working groups for them to combat the problem of sedimentation, examine the watershed management projects prepared by the various departments and recommend undertaking of measures for their implementation. The Board will also review the priorities for undertaking soil conservation and other measures to combat the problem of sedimentation. Thus the setting up of the new Watershed Management Board heralds a new and promising feature and future in the maintenance and management of scarce resources of water supply vis-a-vis the heavy demand for it in the State.

Co. 36—A NEW PADDY INTRODUCED IN TAMIL NADU.



Thiruchencode Samba (Co. 32) is very popular in the single crop wet lands of Coimbatore and Salem districts. The Paddy Breeding Station of Tamil Nadu Agricultural University effected crosses between IR. 8 and Co. 32. Among the progenies, one culture (14,466) was promising with all desirable qualities. This culture (14,466) has been released as Co. 36 for large scale cultivation. This new variety can withstand 200 kg. of N/hectare. In the trials conducted at Agricultural Research Station, Bhavanisagar and in a number of farmers' holdings in Coimbatore district, Co. 36 recorded 7,433 kg. of grain at 120 kg. N while Co. 32 yielded 4,325 kg. of grain per hectare.

Co. 36 is found suitable only for sowing between June-August. It is of 125—140 days duration. The quality of rice is as good as Co. 32. Replacement of Co. 32 by Co. 36 paddy variety in an area of 60,000 hectares in single crop wet land areas of Coimbatore and Salem districts will result in an additional production of 50,000 tonnes of paddy valued at three crores of rupees.

The Tamil Nadu Industrial Investment Corpn., Ltd.

The Tamil Nadu Industrial Investment Corporation is sponsored by the Government of Tamil Nadu to provide all types of financial assistance to industrial units in the State of Tamil Nadu and Pondicherry. The financial assistance is given to all types of units including proprietary, partnership and Joint-stock companies. Special schemes have been framed to help Technocrats and Rural Medical and Veterinary Practitioners. Concessional terms have also been offered to backward areas and backward districts.

The terms and conditions of assistance

Minimum: Rs. 1,00,000 (for small-scale industries : Rs. 25,000).
For Technocrats and Rural Medical Practitioners : Rs. 10,000
Maximum: Rs. 25,00,000 (Rs. 2 lakhs and Rs. 1 lakh in the case of Technocrats and Rural Medical Practitioners respectively).

Rate of Interest

9-75 per cent in the case of major and medium-scale industries.
7 per cent in the case of units in backward areas and for Technocrats and Rural Medical and Veterinary Practitioners.
8½ per cent in the case of other small-scale industries.

Initial repayment holiday

2 years in the case of ordinary industries.
Up to 4 years in the case of units in backward districts.

Amortisation period

Ranging from 8 to 10 years.
Special concessional terms are available to small-scale industries, technocrats, rural medical and veterinary practitioners.

FOR FURTHER DETAILS, PLEASE APPLY TO

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POISONOUS BUT INOFFENSIVE SNAKES OF THE SEA

"All sea snakes are deadly poisonous and their bite is considered fatal. But as a matter of fact, they are mostly inoffensive and seldom offer to bite even after rough handling and provocation. Further they are a popular delicacy in Japan".

T. S. N. MURTHY.

Few of us are aware that the sea snakes, which abound on our coasts, are but the Cobras and Kraits of the sea. They can be easily told from other snakes by their compressed bodies, and the flat tail which serves as a paddle. There are to-day about 55 kinds of these venomous reptiles of the seas, out of which half of them are confined to Indian waters. In size they vary from a 18-inch long Croker's sea snake of the Solomon Islands to the 9-foot yellow snake widely distributed in all seas of the world.

ADAPTATION.

Frequenting the close vicinity of the coasts, these snakes are perfectly adapted for a total aquatic life. The tail has been unusually flattened from side to side like a fin in which character they resemble eels. However, the dry scaly covering of the sea snakes distinguishes their identity from the smooth and slimy skin of the latter. Though they are graceful swimmers in the sea with their bodies flattened vertically, they are helpless and awkward in movement on land because they lack the broad belly plates usually seen in land snakes. In keeping with their other aquatic habits, the nostrils of these snakes are set on top of their heads so that they can breathe with their heads raised slightly out of water. Also, their nasal passages are provided with tight valves which can be closed against water.

They feed principally on fish and dive deep when disturbed. The young are born alive.

Poison.

Having been derived from the stock of Cobras and Kraits in the reptilian clan, all sea snakes are deadly poisonous and their bite is considered fatal. But the truth of this is belied when we see fishermen daily catching them in large numbers and throwing them back

into the sea with impunity. The reason for this is not far to seek, as the sea snakes are mostly inoffensive and seldom offer to bite even after all that rough handling and provocation. Further, the fangs in the sea snakes are mostly short so that the effectiveness of the bite is greatly reduced despite possession of lethal venom of neurotoxic nature. But the story is altogether different with certain kinds.

Recent experiments have shown that the venom of our commonest species—the Beaked sea snake is found to be eight times more potent than that of its deadly land ally—Cobra.

Our knowledge on the venoms of sea snakes is still meagre and it is right now known that some species are deadly to man while others can cause but a little discomfort and short lived pain.

Long Lines.

Some sea snakes love to bask on the surface of the water during days when sea is quite and hundreds of them may be seen from the bows of steamers. Long columns of sea snakes massing thousands has often fascinated the naturalists on sea-voyage. An European Naturalist, Lowe observed once a line of these creatures across the surface of the sea about 300 c.m. wide and nearly 100 kilometre long. The enthralled naturalist has estimated this congregation to include millions of individuals. This fantastic massing may be their migratory behaviour or something to do with their breeding.

EDIBLE.

These deadly serpents of the sea form a popular delicacy in Japan where they are served fried or smoked. With half of the world's sea snakes abounding our coasts it is time that we put this available resource to good use.

Snakes are our allies and they are not to be afraid of. A visit to the Madras Snake Park at Guindy can make one to shed one's fear of snakes. Further the experts at the Snake Park aver that there are only four common poisonous snakes in Tamil Nadu and that they cause less damage than dog bites every year.



A staff of the Snake Park holds in his hands a Rat-snake to prove its harmlessness.

A visit to the Madras Snake Park, Guindy (admission 25 Paise), can make you (at the least) shed your fear of snakes though they try to portray it as a friend! Yes, according to the experts at the Madras Snake Park, snakes are our allies and not to be so generally feared. They aver that there are only four common poisonous snakes in Tamil Nadu and they cause less damage than dog bites every year! An important aspect of their work is to enable us to identify the poisonous ones, so that there won't be indiscriminate slaughter of snakes on sight. Snakes eat rats. In fact, one large cobra or rat-snake can finish off half a dozen rats in a week with the advantage of trapping it right in its hole. According to findings in different parts of the world, snakes are often the most important and effective biological control of rodents. It has been reported that India loses 20 per cent of food-grains every year due to rats. A plantation group in the Nilgiris estimates that they lose Rs. 5 lakhs annually due to rat damage! Now

THE MADRAS SNAKE PARK TEACHES US THAT SNAKES ARE OUR ALLIES IN GREEN REVOLUTION

we begin to see how snakes could truly be called our allies in the Green Revolution. The six rats eaten by a cobra could theoretically have tens of thousands of offspring by the end of one year, it is lucky for us that snakes have such good appetites with effective methods and weapons to deal with rats!

There is one very important factor that steps in the way of the snake's naturally helpful activity and that is our fear of snakes. It is not inherent, it is an acquired fear passed on from parent to child. At the Madras Snake Park emphasis is placed on getting people familiar with an animal which is usually seen just briefly, slipping away through the bushes. Visitors to the Snake Park see the FOUR common poisonous snakes and begin to learn to distinguish them from the numerous non-poisonous varieties. They can touch a snake and see that it is a very dry and clean creature with no malice towards man, only the defensive instinct natural in any animal.

In 1971 the Tamil Nadu Forest Department allotted the Madras Snake Park one acre of land in the Beautiful Guindy Deer Sanctuary. This imaginative move on the part of the Tamil Nadu Government has provided the city of Madras with the first Snake Park on the Indian sub-continent. The famous Halffkine Institute in Bombay has been extracting venom at their lab but it is a medical products laboratory. The Madras Snake Park, on the other hand, serves the public as an educational reference centre where one can take advantage of the largest collection of snakes and literature on the subject. The other groups of reptiles are also represented at the Madras Snake Park with a collection of turtles and tortoises, giant monitor lizards, the Indian crocodile and American alligator. There are also several interesting snakes from other parts of the world.

The starting survival and growth of the Madras Snake Park has depended on five main things: (1) the land allotment by the Tamil Nadu Government, (2) a grant from World Wildlife Fund, India, (3) the snake-catching tribals, the Irulas of Tamil Nadu, (4) the support of the public and (5) the interest of a young herpetologist who has devoted his life to the study of Indian snakes.

The lead established by the Government of Tamil Nadu towards the advancement of knowledge about snakes is highly commended

by other States in India and some have expressed their eagerness to start their own Snake Parks. The well-known Professor M. V. Rajendran of Palayamkottai will soon be starting a new Snake Park in the southern part of Tamil Nadu. The World Wildlife Fund, India has granted the Madras Snake Park Trust over Rs. 20,000 in the last three years of its development without which the Snake Park could never have grown. In turn, the Snake Park now acts as the Southern Regional Office for World Wildlife Fund, India to promote wild life knowledge and conservation activity. This international organisation based in Switzerland is supporting many Wildlife Projects in India including the great Wildlife Conservation Measure of the decade—PROJECT TIGER.

The Irula tribals, who work for Snake Park, are expert snake-catchers and handlers and are constant sources of new enlightening information about wild animals and their natural history. Irulas are nearly all over Tamil Nadu and many are professional snake catchers from early childhood. Some of their observations include the fact that wherever snake-catching has been heavy the rat population automatically increases. This points to the need for a careful examination into the policy of snake-skin and lizard skin export. It appears that these reptiles are far more valuable to the economy of Tamil Nadu ALIVE.

Two Irulas demonstrate cobras handling at the Snake Park.



Heyward and the American Alligator in the Snake Park.

In the first year of its existence the Snake Park had over one lakh visitors. The admission fee is 25 paise with group rates for children and free admission for orphans and the handicapped. Out of the ticket collection the Snake Park is maintained, animals fed and staff paid. New projects are always underway. One recent project is a study of the Indian crocodiles which are nearly extinct from excessive killing for skins.

The Snake Park is on the Government tourist route, and Madras residents visit again and again, a refreshing change in attitude towards snakes has already come about. They are not to be feared, despised and killed. They are to be respected, understood and protected. Once we humans realize that we are here to co-operate with Nature, not to fight against Her, the world will become the paradise we are searching for. We can learn this basic lesson of Life from the lowly snake. Go to the Madras Snake Park and see for yourself.

Source :

N. CHATTOPADHYAYA,
27, II Main Road, Gandhinagar, Adyar,
Madras-20.

A large group of cobras in their offensive attitude.





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FUNCTIONS OF NATIONAL EMPLOYMENT SERVICE IN TAMIL NADU

That the concept of Employment Service as a mere placement agency has long ceased to exist. As the conscious planning for steady development and growth has been recognised in the developing economics, the Employment Service has come to acquire extra but inter-dependent functional dimensions which are both dynamic and integral components in the process of man-power planning, its development and utilisation. Such dynamic and close-knit functions that the Employment Service has come to operate encompass the realms of Employment Market Information, Vocational Guidance and Occupational Research and Analysis. Apart from these, the Employment Service is also concerned with temporary and pressing extra imbalances in the labour market created by special developments such as the repatriation to India of persons of Indian origin from countries such as Burma and Ceylon. The service also looks after the State Apprenticeship Scheme introduced by the Government of Tamil Nadu for engineering graduates and diploma holders and craftsmen. The following are the main functional limbs constituting the service:

1. Placement.
2. Employment Market Information Programme.
3. Vocational Guidance and Employment Counselling Programme.
4. Occupational Research and Analysis.
5. Employment Liaison for Burma and Ceylon Repatriates.
6. State Apprenticeship Scheme for Technical Personnel.
7. State Board for Physically Handicapped.
8. Staff Training Programme.
9. Employment Office for Physically handicapped.
10. Professional and Executive Employment Office.
11. University Employment Information and Guidance Bureaux and
12. Enforcement of Employment Exchanges (Compulsory Notification of Vacancies) Act.

Placement

Placement is the culmination of regular Employment Exchange activity. The Employment Service

plays the part of matching function as between job seekers and job position available. Registration of job seekers on one hand and the receipt of vacancies on the other, set the matching process in operation. Registration at the Employment Exchanges for employment assistance is voluntary. The Employment Exchanges cater to the needs of all categories of job seekers ranging from illiterate/unskilled to the highly skilled/qualified. According to the provisions of the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959, all establishments in public sector and those with 25 employees and over in the private sector have to notify their vacancies as and when they arise to the local Employment Exchanges serving the area. However, it is not compulsory for private sector establishments to recruit persons through Employment Exchanges to meet their man-power requirements. In every district in the State, there is not less than one Employment Exchange the district headquarters in operation. At present there are 30 Employment Offices including nine Sub-Employment Offices, one Special Employment Office for Physically Handicapped, one Professional and Executive Employment Office and three University Employment Information and Guidance Bureaux.

Employment Market Information

The programme of Employment Market Information being operated in this State from the turn of the last decade is designed to help fill the many gaps in the chain of employment intelligence. The Employment Market Information Programme is operated on an area basis, an area being defined to include a revenue administrative district, as it has the merit of practical and administrative convenience. Each Employment Office in the State, barring the specialised offices, has an Employment Market Information Cell and they maintain a Register of employers which serves as the frame of enquiry. Employers included in this frame comprise those in private and public sectors in the organised sector of the economy. In the private sector, however, only employers with at least 10 workers are included. Thus the whole of public sector and all significant employment in the private sector are covered

under the programme. The programme does not cover agricultural employment though it covers plantation industry. Self-employed, domestic and part-time employment are outside the purview of the Employment Market Information Programme. The employers covered in the frame are approached every quarter for information about their total employment, vacancies occurred, filled and outstanding and shortage occupations. The data are compared with those for the previous period, analysed and reported upon. Each area prepares and publishes its quarterly reports. At the State headquarters, the State Employment Market Information Unit compiles the quarterly State Report.

Once in two years, the employers are requested to render a statement of their employees by occupation and educational levels (the coverage in respect of Education Level information varies as regards public and private sectors). The data are analysed in the State Employment Market Information Unit and a report issued. As regards the biennial study of occupational pattern of employees, it is being separately done for public and private sectors in alternate years. So much so, there will be one such biennial study every year covering either the public sector establishments or those in private sector.

Besides, the above regular time-series 'ad-hoc' surveys, as and when required, are also carried out to investigate special problems in respect of different critical categories of man-power such as educated applicants, engineering man-power, etc. For investigating in depth such man-power pockets of special concern and significance as also other related studies on a continuing trend, a Depth Study Cell has been established recently in the State Employment Market Information Unit. This cell started functioning from December 1971.

At present fifteen field Employment Market Information Units function in the State. They are attached to the respective district employment exchanges. These field units carry out the field work for the regular quarterly and biennial employment market information enquiry and also the field work, if any, for special studies sponsored

either by the State Directorate of Employment and Training or by the Directorate-General of Employment and Training, New Delhi.

Vocational Guidance And Employment Counselling Programme

The Vocational Guidance Programme organised and developed in a phased manner in this State has almost completed a decade of its existence. The programme operated through a net work of Vocational Guidance Units attached to the Employment Offices in the State is organised, directed and co-ordinated by the State Vocational Guidance Unit at the headquarters. This State Vocational Guidance Unit also compiles and issues guidance literature for use by field Vocational Guidance Offices and the job seekers.

The modus operandi of this programme is achieving the objective set for it comprises, at present, delivery of career talks in Schools and Colleges, Individual and Group Guidance to job seekers at the Employment Exchange premises, organising Career Exhibitions in educational and other institutions, issuing career literature on employment opportunities, dissemination of occupational and training information, etc. In every District Employment Office excepting Ooty and Dharmapuri, one trained Vocational Guidance Officer is looking after these functions. Even in the above two districts the regular District Employment Officer discharges Vocational Guidance functions. Youths and aspirants in the labour force could well utilise the services of these trained Vocational Guidance Officers regarding their career choices and occupational problems.

A recurring special work assigned to the State Vocational Guidance Unit is the conduct of Aptitude Test every year at various Industrial Training Institutes for the selection of applicants for admission in the respective Industrial Training Institutes. Validation studies for evolving improved norms to be adopted in the annual Aptitude Testing Programme are also being conducted by the State Vocational Guidance Unit. This unit also arranges the administration of aptitude tests to help private industry in selecting suitable personnel against their man-

power requirements, as and when requested by private industrialists.

Occupational research and analysis

The purpose of occupational information is to provide through its job analysis an appreciation of the fundamental structure of jobs and the basic approach to occupational research and to illustrate the principal norms of occupational information pertaining to employment service operations. Job analysis is the systematic examination of a job to identify the scope, purpose and nature of the work performed and to determine the skills, knowledge and abilities which enable the worker to discharge his responsibilities for the accomplishment of the duties and tasks of which the job is composed. Since job analysis is concerned with identifying the qualifications required for the individual to perform the work to be done on a job, it provides the kind of information required to achieve a balance between labour supply and demand. Consequently job analysis represents the most minute aspect of employment market analysis. The importance of the occupational research programme is therefore immense in Vocational Guidance Programme for its success. The Programme forms the basis for all employment service operations and it is the medium used by other agencies involved in labour studies, labour management, man-power planning, etc., as well.

The Occupational Research Unit attached to the Directorate of Employment and Training engages itself in verifying old occupations with regard to their job content and identifies new occupations for updating the occupational information contained in the National Classification of occupations. The Unit also brings out occupational outlook series and other occupational literature based on intimate study of jobs which will be very useful in planning training programmes and developing occupational skills in a planned manner.

Employment Liaison For Burma/ Ceylon Repatriates

The process of repatriation of persons of Indian origin from Burma and Ceylon to India has created in its wake a chain of socio-economic problems in the country and

especially in Tamil Nadu as the bulk of the repatriates belonged to Tamil Nadu. Their resettlement in life through the provision of gainful employment necessitated the establishment of special cell in the Directorate of Employment and Training, Madras, called 'Employment Liaison Office'. Established in 1966, this cell is designed to organise and co-ordinate the activities of Employment Exchange in the districts, where the repatriates are registered for employment assistance, to promote their early placement in suitable jobs, to canvass job vacancies for repatriates, to maintain generally a close liaison with important employers in the State in the interest of the repatriates and to arrange for the admission of suitable and willing repatriates in various training courses available in various Industrial Training Institutes in the State and outside places such as Mana and Budni in Madhya Pradesh and Kota in Rajasthan. The Employment Liaison Office also arranges to impart pre-training to eligible repatriates for eventual absorption in appropriate job positions.

Station Apprenticeship Scheme For Technical Personnel

In order to ease the unemployment situation among technically qualified personnel and also to increase their employability, the Government of Tamil Nadu had evolved an ad-hoc apprenticeship training scheme in 1970. The total intake capacity sanctioned was 600 for graduate engineers, 1,000 for diploma holders and 1,000 for craftsmen. The duration of the training was fixed at two years and it will be in operation for two years. The apprentices under this scheme are paid stipends at the following rates:—

(1) Graduate Engineer—Rs. 250 per mensem.

(2) Diploma Holders—Rs. 150 per mensem.

(3) Craftsman—As per the Apprentices Act, 1961.

The Special Cell attached to the Directorate of Employment and Training co-ordinates the activities of Employment Exchanges and other employing agencies in this regard.

State Board For Physically Handicapped

To promote the welfare of the physically handicapped and to co-ordinate the activities of various institutions engaged in one way or other with the welfare of the physically handicapped, a State Board for the Physically Handicapped was constituted at the Directorate of Employment and Training. This Board started functioning with effect from May 1971.

Staff Training Programme :

With a view to promoting and sustaining the efficiency of the ministerial staff in the Employment Service Organisation in Tamil Nadu, a Staff Training Programme was evolved. The first staff training course was organised in August, 1969. So far several courses have been conducted and a few hundreds of members of the ministerial staff have undergone the course of training.

SERVICE TO SPECIAL CATEGORIES OF JOB SEEKERS.

(a) Physically Handicapped

The Employment Exchange caters also to Physically Handicapped coming under the categories of blind, deaf and orthopaedically handicapped in getting employment. A Special Employment Office for Physically Handicapped to co-ordinate the activities of the Employment Exchange in respect of this type of personnel and to render specialised services to these category of physically handicapped has also been functioning at Madras. It was set up as an adjunct to the services rendered by the Employment Exchanges during III Five-Year Plan. To assist in the placement of physically handicapped in public sector a Special Medical Board is also attached to the Special Employment Office to assess the physical suitability of the candidate for the job for which he is selected.

(b) Professional And Executive Employment Office

A separate employment Exchange for highly qualified applicants is functioning in Madras City. Persons

holding Bachelor's or higher degree or equivalent diploma in professional or a specialised course such as Engineering, Medicine, Agriculture, Veterinary Science, Technology, Law Education, etc., and persons holding a Masters degree or higher degree of post-graduate diplomas or equivalent in other subjects are eligible to get themselves registered in this office for employment assistance.

(c) University Employment Information And Guidance Bureaux

With a view to providing a regular agency for occupational information, guidance and placement service to the young people graduating from the Universities, the Government in consultation with the educationalist and planners set up University Employment Information and Guidance Bureaux in the Universities. The first University Employment Information and Guidance Bureau was opened in Tamil Nadu in 1964 at the Annamalai University. Next was the University Employment Information and Guidance Bureau attached to Madras University which was established in 1965. The third University Employment Information and Guidance Bureau attached to Madurai University was opened in 1969. The Bureaux in a University is an integral part of the National Employment Service, operating in the campus under the overall supervision of the Chief. The University Employment Information and Guidance Bureau is a specialised agency exclusively meant for those getting University education. The students will be guided according to their aptitude and interest and the availability of job. Although the main function of the University Employment Information and Guidance Bureaux is to give employment information and guidance to the alumni of the university they also function like any other employment exchange doing registration and placement work. The functions of the Bureau are—

(1) to give employment information and advice to the university alumni;

(2) to register for employment assistance graduates in profession and specialised courses and persons

holding a Master's degree or Post-Graduate diploma or equivalent and

(3) to answer queries from employers regarding availability of suitable applicants.

(d) Enforcement of Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959.

The Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959 is being implemented through Employment Exchanges. The purpose of the Act is to assess the impact of the implementation of five-year plans in the generation of employment opportunities. The data rendered by employers in the returns prescribed in this Act helps in watching the trend in the employment market and plan vocational training, etc., on a national basis. Employment Exchanges are to receive the quarterly returns to help in the Employment Market Information Programme. The Officers in the District Employment Offices are empowered to check the records of the employers. They are also to see the effective implementation of the Act to achieve the purpose, for which the Act has come into being. The Act covers all establishments in public sector and such establishments in private sector where 25 or more persons are employed. These employers are obliged to render quarterly and biennial returns and to notify the vacancies that arise in their establishments before they are filled up. One unique feature of this enactment is that the Act compels the employers covered by the Act to notify all vacancies but it does not compel them to fill the vacancies through the Employment Exchanges.

MULTI-PURPOSE USEFULNESS OF PLYWOOD

Mosquito bombers played an important role in World War II, plywood being one of the chief materials used in the construction of these aircraft. Such aircraft were designed, constructed and flown in a few weeks which is impossible with their metal brethren of the skies.

Since the war, plywood has in peacetime helped various spheres to economise scarce resources and materials. In particular, it has conserved the use of timber—a dwindling commodity throughout the world. As compared to timber, plywood has its own advantages—it does not split when nailed and it is not so badly affected by humidity as is timber.

THREE KINDS OF PLYWOOD

There are different kinds of plywood—some for aircraft, other types for marine use, for decoration and for packing.

In India, plywood use has attained very high levels in the packaging industry. It is the usual packing material known for export of tea because if the correct species is used it does not also affect the tea's flavour as do so many container materials. India uses more than 100 million square feet of plywood a year for packing tea. The value of the tea exported in 1970 in such chests is estimated to be 1,488 million rupees.

MORE USE OF PLYWOOD

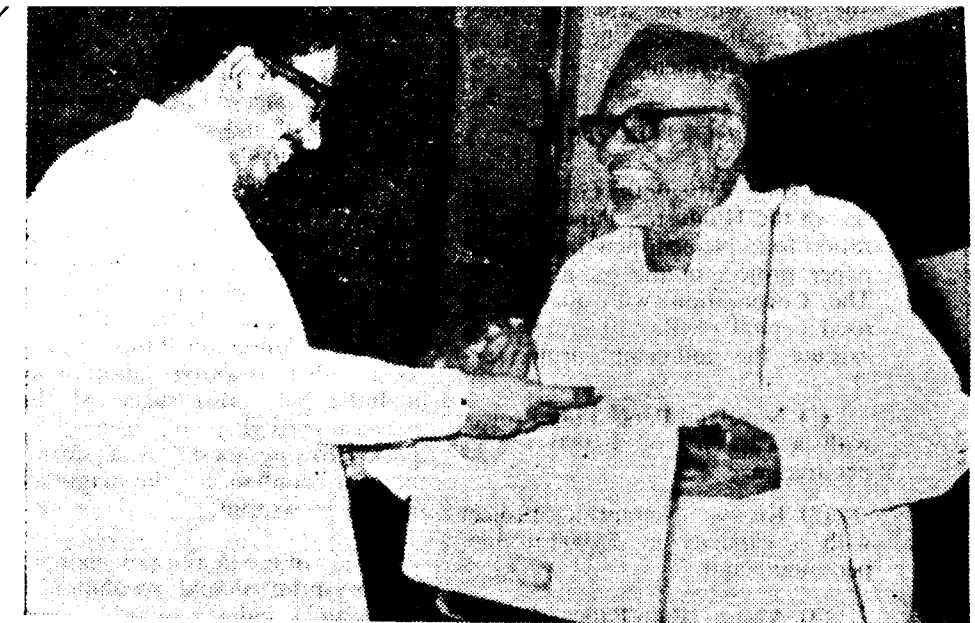
However, scientists believe that the use of plywood can be further extended if the products' properties are better understood. To achieve such understanding, a group of researchers at the Indian Institute of Science (I. I. S.), Bangalore, is today engaged in developing methods for more accurately assessing the strength of plywood of various species and grades. Heading the group is Dr. D. Narayanamurthi.

According to Dr. Narayanamurthi, the research work involves studying the effect of various defects in various sizes in the basewood veneers on the mechanical properties of commercial plywood. The project participants have so far examined 11 species of plywood. They began by grading the plywood by visual examination (and quantitative wherever possible) according to the nature of the defects in each—slight, medium and maximum defects. They then assayed the plywood strength in bending tests, panel shear tests and rigidity impact resistance tests.

"This work", says Dr. Narayanamurthi, "is very important because it will help to use the right kind of plywood for the right job". The findings may also help to evolve ways to use plywood as a structural material.

NEWS- PRINT IN INDIA

"In spite of continuing shortage in newsprint supply, there has been a substantial rise in the number and circulation of newspapers in the country, thanks to the steady rise in the level of literacy and growing political consciousness among the people".



Thiru S. P. Adhithanar, Minister for Co-operative, receiving the first copy of 'Tamil Murasu' Tamil Daily from the Chief Minister.

Newspaper readership in India has been expanding at a rapid pace because of the steady rise in the level of literacy and growing political consciousness. There has simultaneously been a substantial rise in the number and circulation of newspapers in the country.

The number of newspapers published in 60 languages (44 Indian and 16 foreign) rose to 12,218 in 1971 as compared to 3,050 in 1956. The circulation of newspapers during the corresponding period also increased from 2.93 crores to over 2.96 crores.

But this is still far behind the level of circulation suggested by UNESCO which has recommended a minimum standard circulation of ten copies for 100 inhabitants to bridge the communication gap in the developing countries.

Judged by this yardstick, the current newspaper circulation of 1.3 copies per 100 inhabitants is rather inadequate. This implies stepping up by about eight times the present level of circulation to the UNESCO minimum.

Continuing shortage of newsprint has inhibited the growth of press in India. Even on a restricted basis, the demand for newsprint in 1970-71 was over 2 lakh tonnes as against the indigenous production of less than 40,000 tonnes. The gap

was covered by imports, entailing considerable expenditure in scarce foreign exchange which rose from Rs. 6.66 crores in 1965-66 to Rs. 18 crores in 1970-71.

The shortage can be attributed to two main factors: stringency of foreign exchange and low indigenous production on account of difficulties in procuring suitable indigenous raw materials.

The National Newsprint Paper Mills Ltd. (popularly known as Nepa Mills) situated in Nepa Nagar near Chandani in Madhya Pradesh) is India's first newsprint mill. It was floated by a private entrepreneur in 1947 with an authorised capital of Rs. 5 crores.

The mill described as a 'pioneering effort' in the manufacture of newsprint from a species of 'wood salai' hitherto not used anywhere in the world, went into production in 1955 with an installed capacity of 100 tonnes per day. During the year 1956-57, the Nepa Mills produced 13,534 tonnes of newsprint. The production had gone up to 40,000 tonnes by 1969-70.

Government raised the installed capacity of this Mill, now under public sector, from 30,000 to 75,000 tonnes by installing a second paper machine which was commissioned in March 1969. When expansion in production is fully realised, (expected to materialise by 1975)

the mill will be able to meet about a third of the country's present requirements.

NEW CORPORATION.

On May 29, 1970, the Government set up the Hindustan Paper Corporation to implement newsprint/pulp/paper project in the public sector. The Corporation with an authorised capital of Rs. 30 crores is to execute the following projects:—

- (1) Nagaland Paper/Pulp Project with a capacity of 30,000 tonnes per annum,
- (2) Kerala Newsprint Project with a capacity of 75,000 tonnes per annum and
- (3) Assam Pulp/Paper Project with a capacity of 10,000 tonnes per annum.

A private party has also proposed to set up a newsprint project in Himachal Pradesh. With the coming up of this mill, an additional capacity of 60,000 tonnes per annum will be created.

There is also a proposal to set up a newsprint factory in the private sector in U.P. near Gola Gokkaram North, with a capacity of 80,000 tonnes per annum.

With the coming up of these units in both private and public sectors, the industry will be in a position to meet the growing demand of newsprint.

IMPORTED NEWSPRINT.

As already stated, the present restricted demand for newsprint is over 2,00,000 tonnes as against the indigenous production of 40,000 tonnes. The gap has hitherto been covered by imports, entailing foreign exchange expenditure of Rs. 18 crores in 1970-71.

India imports newsprint mainly from Canada, the Scandinavian countries, the U.S.A. and the U.S.S.R. The import of newsprint by India during 1947-48 was 43,935 tonnes. This gradually increased in 1954-55 to 78,971 tonnes. Further increase was recorded in the year 1964-65 to 1,02,461 tonnes. In the year 1971-72 import of newsprint was 1,80,000 tonnes.

RESEARCH.

Research organisations in the country are engaged in finding ways and means of making the maximum use of the available raw materials for the production of newsprint.

The Regional Research Laboratory, Jorhat (Assam) has developed a process for reclaiming pulp from newspaper waste. It has suggested commercial utilisation of this process. Some other research laboratories in India have also suggested the technical feasibility of using the quick growing mesta as a substitute for bamboo for the manufacture of newsprint.

The use of mesta as a raw material for newsprint should revolutionise newsprint industry in India and bridge the gap between the demand and supply without much difficulty. The advantages of mesta are that it ripens in 4 to 5 months and is suitable for tropical climate and the water requirements are low.

UTILISATION OF WASTE.

Another important finding of research is that different species of eucalyptus can be grown to meet the needs of the newsprint industry. Projects to grow eucalyptus have already been undertaken.

Yet another result of research is the possibility of utilising sugarcane waste, called bagasse, for the manufacture of newsprint. To exploit this process commercially, a sugar co-operative in Maharashtra has submitted a blue print to transform its waste into 45,000 tonnes of newsprint.

An appraisal of the newsprint development opportunities in Asia undertaken by the Food and Agriculture Organisation of the U.N.O. makes an optimistic forecast. It foresees the possibility of India reaching self-sufficiency in newsprint by 1980 if present plans and new schemes to create additional capacity are put into effect.

F.A.O. REPORT.

Two case mills have been suggested in this report for India, the added capacity of which amounts to

2,60,000 tonnes per year. Together with expansion schemes already taken up by the Government, a total production of about 4,70,000 tonnes by the year 1980 can be achieved.

One mill is proposed to be located in Uttar Pradesh near Dehra Dun, and Sahranpur, the principal research and training centre for forestry and paper industry in India. The second mill is to be located in the Bastar region of Madhya Pradesh either at Barsur or at Jagdalpur. At both the places water and electric power are available and the existing railway connection to the east coast is also an advantage.

The share of newsprint allocated to daily newspapers in 1970-71 amounted to 87.1 per cent of the total quantity allocated (1,78,954.97 metric tonnes). The quantity of newsprint allocated to the periodicals during the year was 12.9 per cent.

ALLOCATION.

State-wise, newspapers of Maharashtra claimed the largest share 21.4 per cent of the location, followed by Tamil Nadu 16.4 per cent, Delhi 12.5 per cent, West Bengal 11.6 per cent, Kerala 9 per cent and Gujarat 7.3 per cent.

From the point of view of language English dailies got the largest quantity of newsprint (36.5 per cent) of the total allocated to dailies, followed by those brought out in Hindi (12.8 per cent), Gujarati (9 per cent), Malayalam (8.8 per cent) and Tamil (8.8 per cent).

The total number of newspapers to which newsprint was allocated (1971) in pursuance of the 1970-71 policy included 76 big, 185 medium and 1,440 small newspapers.

The largest number of small category dailies which availed themselves of the facility of allocation of newsprint belonged to Hindi (74), followed by that in Urdu (46) and Marathi (30). Among the medium category dailies, the highest number was in English (19) followed by Hindi (17) and Tamil (15). In the big category, dailies in English were the largest in number (16), followed by five each in Gujarati, Malayalam, Marathi and Tamil.

PLANNING PROSPERITY TOGETHER

For over a billion people in South and South-East Asia, this day—July 1—holds a special significance. For, it was on this date twenty-two years ago that the Colombo Plan came into full operation to help them realise the aspirations for a better economic future for themselves and their children.

These aspirations were but natural. Political independence had led to an intense desire for a better standard of living. And, the Colombo Plan was conceived to give practical expression to this desire with the assistance initially of the developed Commonwealth countries.

A Modest Beginning.

The membership then was only seven countries—Australia, Britain, Canada, India, New Zealand, Pakistan and Sri Lanka. The Plan had thus a modest beginning. But the validity of its basic concept of economic development through international co-operation is borne out by the growth of its membership from seven to twenty-six countries. Regional members numbering twenty range now from Iran to the Philippines, from Nepal to Indonesia.

The viability of this basic concept of the Plan is now acknowledged widely as the most pragmatic approach to fostering economic well-being in the developing countries.

An Asian leader has aptly described this while referring to the Plan as :

“The earliest expression on the part of the developed countries of the recognition of their responsibility towards the less developed nation for helping in their growth effort. It proved a pioneering effort and had a catalytic effect in mobilising the flow of economic and technical assistance from the advanced countries to the newly emerging developing nations of the world.”

The extent of this assistance may be gauged from the fact that since the inception of the Plan the six major donor countries—Australia, Britain, Canada, Japan, New Zealand and the United States—had given till the end of 1971 over \$35 billion in capital aid and technical assistance to the twenty-member countries of the region, i.e. Afghanistan, Bangladesh, Bhutan, Burma, Fiji, India, Indonesia, Iran, Khmer Republic, Republic of Korea, Laos, Malaysia, Republic of Maldives, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand and the Republic of Vietnam.

Contributions made by each of the six major donors are :

	US \$
Australia ..	410,010,000
Britain ..	2,213,000,000
Canada ..	1,292,000,000
Japan ..	3,200,100,000

The Colombo Plan celebrates its 22nd Anniversary on 1st July 1973. The viability of the basic concept of the Plan is now acknowledged widely as the most pragmatic approach to fostering economic well-being in the developing countries.

	US \$
New Zealand ..	55,500,000
United States ..	28,658,000,000
	35,828,610,000

Till the end of 1961, the total aid extended by these six countries had amounted to \$ 12 billion. Thus in the ten years, from 1961 to 1971, the quantum of aid has registered an increase of over \$ 23 billion. A study of the nature of assistance shows that a notable portion of the aid has been in the form of grants.

Thousand Projects helped.

Capital aid and technical assistance have been extended in support of over 1,000 projects covering various facets of development in the region.

The total expenditure on technical assistance since the inception of the Plan and till the end of 1971, amounted to US \$ 1,697.8 million, spent in the proportion of 18 per cent on trainees and students, 51 per cent on experts and 31 per cent on technical equipment. Training and student awards were provided to 81,156 persons from the region to acquire specialised training in donor countries. This was supplemented with the services of 15,310 experts, consultants and advisers in key areas of activity. Total disbursements on technical assistance under the Colombo Plan rose to \$ 174.2 million in 1971 from \$ 154.6 million in 1970.

Increase in Membership

In the past twenty-two years, the Colombo Plan's membership has not only increased from seven to twenty-six, but also several of the recipients have become donors, training students from neighbouring countries or helping with various projects in their fields of expertise.

Since the inception of the Plan, 6,654 training places or 8.2 per cent of the total Colombo Plan awards have been provided by member countries within the region. During July 1971 to June 1972 alone 469 trainee and student places were provided by the countries in the region.

Tremendous changes achieved

The above figures hardly convey a tangible image of the tremendous changes wrought in the lives of the people of the region through Colombo Plan co-operation. A new dam, for instance, can create a minor miracle; it can add more green to the landscape, light up the area within its ambit, and harness a massive reservoir of human resources to work for better conditions of life. And, more dams in Asia

have been built under the Colombo Plan than under any other agency.

New roads, new railways not only diminish distance and unify regions, but they also change the attitudes of the people. A cribbed inertia is replaced by a will to move out and seek opportunities. A new factory in the country side draws the unemployed youth, stagnating in the village mud huts and hovels, to the modern labour colonies where an intermingling of workers from many parts of the country creates whole-some social values, and a spirit of enquir and tolerance. They may not know that the foreigners at the site are Colombo Plan experts and advisers, but watching them at work, hand-in-hand with the local engineers and technicians, makes them appreciate the fruits of co-operation and question their narrow, tribal outlook.

Exchange of students

Over 80,000 Colombo Plan trainees and students have gone to the developed member countries to broaden their knowledge and acquire new skills. They mingle at work, in private homes, in sport, at social gatherings and in community activities of many kinds, and in so doing, change social attitudes,

acquire new friendships and a wider out look.

Maximisation of use of manpower

One of the main targets of the Plan is to maximise use of manpower and harness native genius in creating economic well being. That the Plan has helped considerably in this respect is widely acknowledged. But socio-economic aspirations cannot be met fully unless the people help themselves by bringing down the high growth rate of population. Much of the benefit of economic development is neutralised by the rapid rise in population. At the inception of the Plan, the total population of the region was less than 725 million, but is now more than 1,000 million and a disastrous doubling of population is projected at present growth rates, by the turn of the century. On this reckoning, the population of India alone will be 1,000 million. Fortunately, an awareness of this problem is growing and the Colombo Plan too is contributing to the national and international efforts to foster this awareness.

These then are some of the steps taken, the objectives aimed at, and the pitfalls to be avoided by the Colombo Plan community of nations in the adventure of "Planning Prosperity Together".

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Despite these Achievements
Rising Population Raises Problems

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DEPARTMENT OF HEALTH SERVICES AND FAMILY PLANNING

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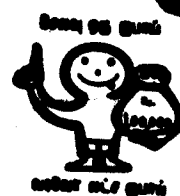
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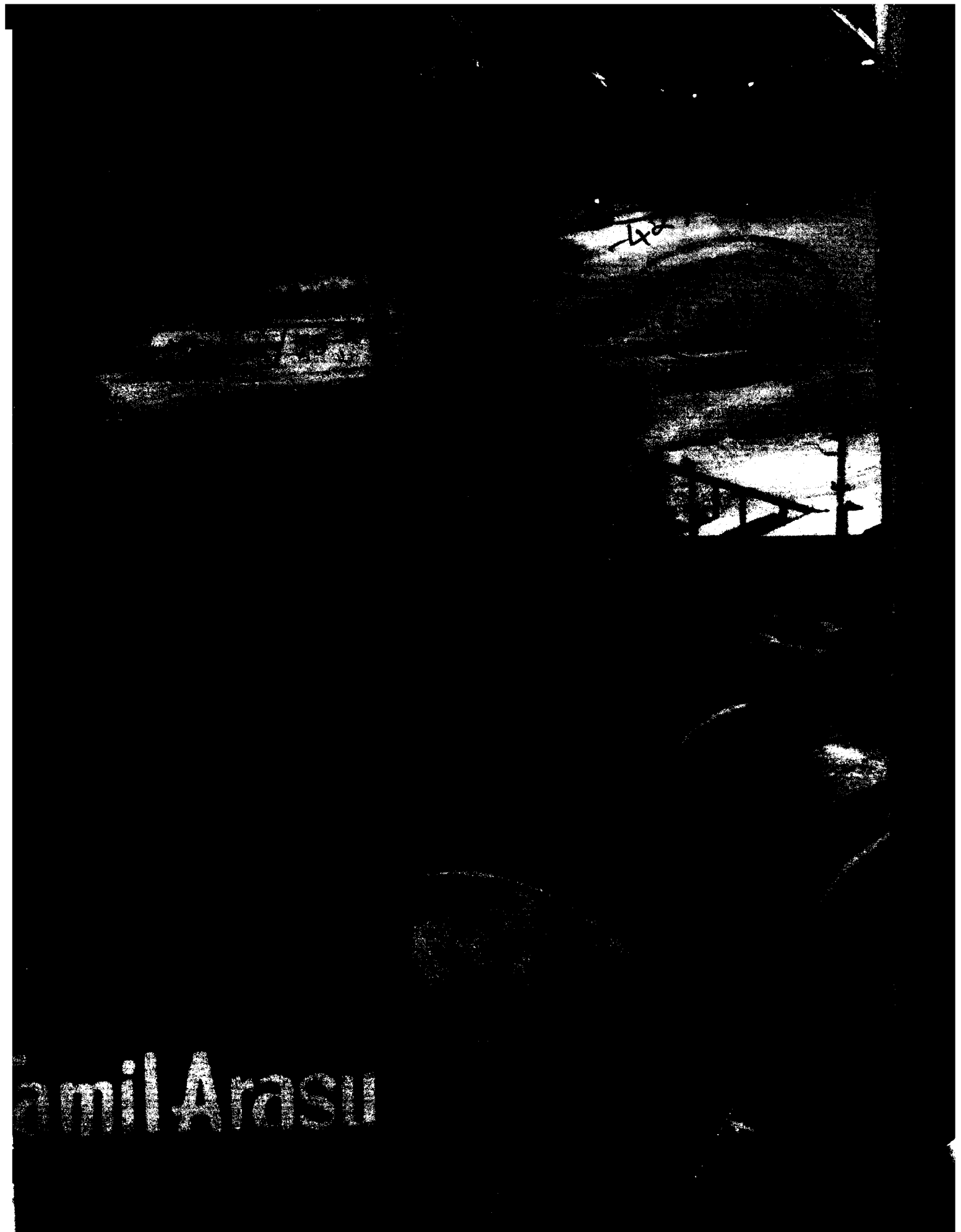
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Tamil Arasu

Vol. IV AUGUST, 1973 Issue 2

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Dr. M. Karunanidhi, Chief Minister, is seen greeting Dr. V. R. Nedunchezhiyan, Minister for Education, on the latter's 54th birth day on 11th July 1973.



SILVER JUBILEE INDEPENDENCE YEAR AWARDS.

Thirumathi Sathyavanimuthu, Minister for Harijan Welfare, is seen handing over the Tamra Patra to the Freedom Fighters at Cuddalore on 6th July, 1973.

A FRIEND OF MUSLIMS INDEED IS KARUNA

For long, Urdu lovers were disheartened
Karuna has made their hearts gladden.
Poor, helpless, forsaken were they through
'Forward'

Karuna has made them now 'Backward'
Concessions, Privileges denied to us so long
Generation so young will benefit for long
Proclaim this to the citizens of this land O' Anwar
Beloved is Karuna, the Tamil Nadu Leader

FRIEND INDEED OF MUSLIMS IS KARUNA

Reigns of Tamil Nadu lies in his benevolent hand
The country who knows him by the name of
Karuna

Stalwart of Fair Play, Justice and Statesmanship
Hospitable to the core, a Dayalu, O' Karuna
A word so popular in every home is Karuna.
Worried and care-worn were the Urdu public
Cursing their Fate so long.
Who could forget the mosque 'episode' of T'Nagar
A matter so delicate handled so ably by Karuna.
Eye-Clinics opened for the sightless in every
District.

For time considerable, I am sightless too.
Birth days 121 may I wish you celebrate
For people may prosper so long.
Proclaim this to the people of the land O' Anwar
A friend of Muslims indeed is Karuna.

—A translation of Urdu poem published in the daily newspapers 'The Musalman' and 'The Ittehad',
composed by Moulana Syed Abdul Barkath Anwar (aged 80 years) to serve as a form of felicitation to
Tamil Nadu Chief Minister Dr. M. Karunanidhi on the occasion of the latter's 50th Birthday.

GOVERNMENT ORDERS ISSUED

At present, among the Muslims, the Labbais, the Mappillas and the Dudekulas have already
been classified as Backward. Before the Backward Classes Commission, the Muslim Com-
munity represented that all Muslims including Urdu-speaking Muslims should be treated as
Backward. But, the Commission did not make any specific recommendation on this question.

The Government, after careful examination of the representation of Muslims, have decided that
all Labbais in Tamil Nadu, whether their spoken language is Tamil or Urdu, ought to be included in
the list of Backward Classes, and direct accordingly in its G.O. Ms. No. 652, dated 25th July 1973.
They will be eligible for educational concessions given by Backward Classes Department and
Education Department from the academic year 1973-74. For admissions into educational
institutions, they will be eligible with effect from the commencement of academic year 1973-74.
In regard to reservation in Public Services, they will be eligible as Backward Classes from the date
of this order.

GOVERNOR'S PRAISE ¹⁴²³ FOR TAMIL NADU OFFICIALS

While inaugurating a Conference
of Collectors and Police Officers,
Governor Thiru K. K. Shah said:

May I thank the Hon'ble Chief
Minister for inviting me to inaugu-
rate this Conference? It is a
pleasure to meet the Collectors
and Police Officers who have been
invited to attend this Conference.

My stay in Tamil Nadu for a little
over two years now has convinced
me beyond any shadow of doubt
that the administration is in tune
with the declared policy of democra-
tic socialism and is capable of
maintaining healthy standards and
giving a lead to other States in
recognising the common man as the
real master. I had an occasion last
year to refer to Manu Neethi Thit-
tam, which is an eloquent example
of an effort to carry power to the
masses. What is necessary is to
make an effort to develop a psycho-
logy of democratic way of living.

Sense of restraint

The political parties have exhibited
a sense of restraint and realism.
This is a distinct achievement and
Government have done well in
encouraging these trends. Several
measures adopted officially and un-
officially, either to mark the birth-
day of the Hon'ble Chief Minister
or otherwise, are indicative of the
healthy trend of a Welfare State
for which Tamil Nadu ranks in
the forefront. The concept of a
Welfare State is getting crystallised,
and planning at district level may
percolate to block level. When
it so happens, every one of you will
be put to acid test. The success
of planning at block level will
depend on the ability of the village
people to rise above petty consi-
derations of caste, community,

V AN ADMINIS- TRATION IN TUNE WITH POLICY OF DEMO- CRATIC SOCIALISM

religion and language and their
anxiety to develop administrative
ability to manage local institutions
with efficiency, dignity and integrity.
We have to remember that local
institutions are training grounds for
future leadership. Whatever habits
they form in the beginning will
either become an asset or liability for
future.

Student unrest

I am glad that you have given top
priority in your discussions to the
question of student unrest and
closure of educational institutions.
It is true that this is an All-India
phenomenon as part of student
unrest in the whole world. But its
intensity can be considerably
lessened by careful handling.
Even though frustration and lack
of opportunities have been the main
causes, it will be wrong to say that
these are the only causes. The
younger generation is searching
for ideals to follow and when their
search fails, their anguish is heigh-
tened and gets expression in
undesirable ways. In some districts,
I found that the Collectors and
Police Officers had succeeded in
creating a rapport between them-
selves and the students. That shows
that good public relationship pays
high dividends if it is combined with
just handling of their grievances.
The idea to have some sort of per-
manent body to tackle problems
connected with educational institu-
tions is a welcome innovation.

In some of the districts, I was
extremely happy to find that the
students did excellent work for
flood relief. Recently they did
splendid work during their vacation
in the matter of famine prevention in
rural areas. The Youth Service
Corps Programme, which is imple-
mented in our State with 50 per cent

financial assistance from the Government of India and which gives both employment opportunities and provides training in public service, has won the appreciation of UNICEF and has invited enquiries from other States, so that they can introduce the programme. This is also indicative of the fact that if talents are utilised for productive purposes, they are agreeable to divert their energies in other useful channels.

Labour Unrest

We cannot say industrial peace has not been disturbed in Tamil Nadu. But it has not assumed the proportions it has assumed in other States. Nobody can blame either the Government or the administration as it is part of a phenomenon which is most disturbing everywhere and has become a cause for anxiety. In fact, Tamil Nadu can still claim to have, by and large, succeeded in localising the trouble and in finding solutions. It must be said to the credit of Tamil Nadu labour that it is conscious of its responsibility to unorganised labour which is struggling for employment. If something can be done to make them more conscious of their responsibility to their brethren who are unemployed, this difficulty can be solved considerably.

The crash programme of rural employment which we have implemented so far as a Centrally sponsored scheme, the progressive land reforms which the Government of Tamil Nadu has been vigorously implementing, the latest being the law conferring right on the tenants to purchase landowners' rights, the provision of housesites, the village housing project over which we have spent Rs. 121.14 lakhs till March 1973, and the offer of loans by nationalised banks, ranging from Rs. 500 to Rs. 3,000 to individuals and groups belonging to weaker sections at a nominal rate of interest with no Government guarantee but only on personal security to facilitate their self-employment in petty trades and industry, are calculated to remove the age-old poverty of the masses and raise their standards of living to a decent level. Tamil Nadu has done pioneering work in this direction and it is the duty of the district administration to see that these schemes are vigorously followed, implemented diligently and judiciously.

I understand that the banks require assistance from the district administration in locating deserving applicants for loans. I do hope the Collectors and their staff, will have periodical discussions with the banks and extend their assistance in time and make the scheme a success.

Village Housing Project

In the case of village housing scheme, heavy arrears have accumulated in the repayment of loans by the beneficiaries of the scheme. The beneficiaries must be made to realise that unless they co-operate with the Government by promptly repaying the loans, the Government cannot go ahead with the implementation of such welfare schemes in other areas.

We know the vagaries of the monsoon and erratic rainfall, necessitating power cut and affecting agricultural production. The need to conserve our water sources is, therefore, imperative. You will be discussing the need to maintain minor irrigation tanks in a better way. I am sure you will suggest a co-ordinated programme enabling the Panchayat Unions to carry out necessary repairs from time to time and to suggest measures for preserving the level of underground water and putting it to maximum use. I hope the investigations suggested by Government for exploring possibilities of maximum storage and utilisation of underground water will support the idea of check dams.

I need hardly remind the Collectors that we have to fulfil the target of Rs. 20 crores in Small Savings at least in 1973-74. I do hope you will launch a special drive in this case. If pay roll savings scheme and school bank schemes are pushed through vigorously, the results will be favourable.

Important Subjects in Agenda

The agenda includes many important subjects for discussion among Police Officers. A suggestion for setting up District Unit Laboratory for analysis in excise cases has been made. If one more sample is taken at the time, the contraband is seized and if that additional sample is sent to the Central Laboratory at State

Level to be utilised in case of contest, sufficient safeguard can be provided. Lot of work at district level is technical and is likely to be disposed of without heavy contest. In such cases, the Central Laboratory need not be troubled about the sample sent.

An equally important case, which you will discuss, is the lapses in the present investigating and prosecuting agency. The first-hand information should never be taken down in a hurry. It should be completed in all essential particulars and every word should be taken down after understanding what the informant has to say. The absence of co-ordination between the prosecuting agency and the investigating agency is also on account of the lacunae that have been left while recording in a hurry either the first information or the statements of the witnesses. When the prosecuting counsel finds gaps in essential particulars and questions the investigating officer, a kind of misunderstanding develops and creates an impression that they are working at different ends, which in fact is not so. An intensive training based on cases where the lacunae were responsible for acquittal, can be imparted to remove these difficulties.

Illicit distillation has, I am glad to note, been brought well under control. Now that prohibition is to be re-introduced in a phased manner, the responsibilities of the Police Officers are bound to increase and they have to be more vigilant in checking smuggling of liquor and illicit distillation. I have no doubt you will rise equal to the occasion.

Cream of Devoted Officers

It is a happy augury that Tamil Nadu can claim to have the cream of efficient and devoted officers who have not allowed themselves to be swayed by pressures of personal convenience or greed. You have done commendable work during floods, students' unrest, etc., which I appreciate very much.

The discussions at this conference, based as they are on your practical experience and views, will be of great help to the Government in assessing our progress, removing bottlenecks in the day-to-day administration and effectively implementing development programmes for the benefit and welfare of the people.

WE ARE IN POWER

ONLY TO BE OF SERVICE

At the end of a 2-day Conference of Collectors and top Police Officers held in Madras, on 12th and 13th July 1973, the Chief Minister declared in unmistakable terms that his Government was only interested in furthering the interests of Socialism and bettering the lot of the common men. He said:

Participating in yesterday's and to-day's debate and discussion in this high level official conference, you have offered a good number of constructive and valuable suggestions on the development schemes executed in the State. On the basis of your valuable suggestions, we have arrived at some conclusions and I hope on your return to your headquarters you will immediately set out on the course of action to translate these decisions into action.

As pointed out in my inaugural address, my Cabinet colleagues and I are proud of the fact that you all act and serve the society with a clear understanding of the socialistic principle of this Government. Your unflinching devotion and loyalty to these goals of this Government have earned for you the esteem of myself and my colleagues. I do hope you will strive still harder to receive more appreciations from the Government in the times ahead.

More Schemes for Village Improvement:

As a matter of fact, we are yet to formulate many more welfare-

oriented schemes on the basis of the needs of the well-being of the rural folk. And I need not repeat here that we must continue to carry out, in the interest of the poor, be they labourers, workers, middle-class people, village people, agriculturists or agricultural labourers, all the schemes devised for their benefit, with added zeal.

As far as this Government is concerned, we are not interested so much in being in power as to be in a position to be of use to the people by being in power. On the other hand, we are interested in extending our selfless service to the general well-being of the weaker sections of the people in cities and the exploited sections in the rural population.

When this Government assumed the reigns of power in 1967, our leader, Dr. Anna pointed out in his address in the Legislative Assembly that every individual in authority should carry out his duty not as a Government servant but as a social worker towards the welfare and well-being of the oppressed, the backward and the middle-class people who groan under the weight of poverty. To encourage this Government which is following the policy of Dr. Anna, you have been all along extending your discerning support and you must continue to show the same spirit in your duty in future also.

C. M.



The Chief Minister addressing the Collectors Conference.

WHY INTERMEDIARIES

FOR LAWFUL CLAIMS?

These Conferences of Collectors and Police officers held annually serve the purpose of improving the efficiency of the administration and in helping the implementation of the several schemes formulated by the Government for the welfare of the people. We take this conference as a means of exchanging views with officials, i.e., mutual exchange of views between us who evolve and you who carry out the schemes; as a forum for you to bring up problems met with while carrying out official duties and to bring those problems to the notice of the Government for a solution.

The duties of the Government do not stop with mere tax collection and maintenance of law and order. The Government is also responsible for the progress and well-being of the people.

There was a time when the lower strata of society could not meet the Government officers. But today the officials function with a desire to serve the people, they receive representations from people of all walks of life and redress the grievances of the people with zeal and zest and now the fact that in pursuance of the Manu Neethi Scheme, Government officers personally visit the villages and hamlets, and redress the grievances of the people on the spot to the extent possible, has earned the approbation of one and all in the State.

Panacea for Political Corruption

There need be no intermediaries to recommend when there is the Manu Neethi Scheme to redress the individual grievances and the democratic set-up to redress the common grievances of the villages or groups

of people. Yet, there might be some common problems which could not be brought to the notice of the Government officers through the democratic institutions. There is nothing wrong in such cases for the elected representatives or individuals to approach the Government officers. Influential persons might approach the Government officers to get patently unjust things done. Please concede their request or accept their recommendation only if there is justice in it. If it is unjust, such recommendations can be spurned, however exalted the people, who make the recommendations, might be.

At times, unnecessary delay is experienced in the execution of just schemes and before the delay is averted, unjust acts take place here and there sporadically. Whether it be the officers who abet such acts overtly or others who induce the officers to indulge in such acts, both will be considered anti-social elements.

Pressure for Personal Gains :

We should not lose sight of another important irregularity on the part of the officials. Some officers approach influential people or the elected representatives to bring pressure on the Government to gain their personal ends. I would like to say categorically that such officers, who arrange for such recommendations for their personal ends, would be subjected to strict disciplinary action.

The representatives of the people, except for common problems, should not approach the Government officers directly and they should also bring to the notice of the Government any unjust act. I have time

and again stressed that the elected representatives should not become a lever for recommending the cases of officers. I would like to reiterate here that this Government will be more firm on this point.

I earnestly hope that bearing all these points in mind this conference will pave the way for the successful implementation of the several socialistic and development schemes of the Government. I hope the District Collectors and the Police Officers will discuss in these two days the various subjects on the agenda in this background.

Socialism will remain a political slogan so long as a mere handful of people are afforded opportunities to climb up the ladder while the majority of the people rot in poverty. We cannot take any pride in the fact that we are enjoying the fruits of independence or that we rule ourselves unless and until the lot of Harijans and other Backward class people, who are in the last rung of the social ladder is improved. Hence, this Government sincerely feels that their lot should be improved and is therefore implementing to the best of its capacity schemes which will ensure the improvement in the standard of their living.

Our Socialistic Measures

Extending concessions to them in the educational institutions and in employment sphere, assignment of Government lands to them; conferring ownership of house-sites occupied by them; assignment of houses - sites for the homeless; conferring right of ownership on the tiller of the soil; appointment of backward and depressed classes as trustees and Archakas in temples; construction of multistoreyed buildings for the slum dwellers; rehabilitation of beggars; conducting eye-camps and abolition of handpulled Rickshaws are steps that the Government have taken to usher in improvement in their life. This is a peaceful revolution for the uplift of the Harijans, the backward class and the middle-classes people. The achievements of this Government should be obvious to those who view them dispassionately without any feeling of bias or prejudice.

The co-operation of the District Collectors is necessary for the successful implementation of any

scheme. If they lack enthusiasm in their duty no scheme could be implemented properly. Whether it is the implementation of the Family Planning Scheme, the Small Savings Drive, the conduct of elections or the maintenance of law and order, they should evince keen interest and function with a remarkable drive.

When Misery Struck

Towards the end of last year, several districts were affected by the flood havoc and standing crops, roads, irrigation tanks and houses were damaged thereby. We can't help paying tributes to the drive and enthusiasm shown by the District Administration and the higher officials of the Government in the flood relief operations. It is because of this prompt and swift action, the Tamil Nadu Administration is being applauded as the best one in the whole of India. We can emphatically say that the efficiency of the administration has not in the least gone down. To criticise that the administrative efficiency has gone down is but a political stunt and all impartial observers will realise it.

Now, we have attained self-sufficiency in food production. Scarcity of food articles is non-existent in our State. Yet, it cannot be denied that the prices of food-grains have gone up to a little extent in the belt areas of our State. Steps have been taken for the proper distribution of food grains and the stabilisation of prices in those areas. However, the officials in those areas should be vigilant. They should apprise the Government from time to time of the situation prevailing there and take all suitable measures to avoid shortage of food stuffs and to arrest the rising trend of prices. Police officials should function effectively to prevent the smuggling of food grains.

Last year, as a result of the failure of the monsoon, we could not generate enough power from our hydle power stations. Our neighbouring States could not provide us with the usual quantum of power this year as they had done hitherto. To a certain extent this has affected the agriculture and the industries in our State. In particular, production of yarn in our Mills has been affected, which directly hit the handloom-weavers. You have

done splendidly well in providing credit facilities to the handloom-weavers and in implementing the fair distribution of the available yarn to them. In such circumstances, it is your duty as district administrators, to keep a strict watch over the distribution of yarn so that even a small error does not creep in.

Violence Must not raise its head

You might come across people who seek political gains by creating disturbances and exploiting the simple demands of the students and the labour which could have as well been settled across the table. As those who maintain law and order, it is your duty to see that in any agitation violence does not rear its ugly head pushing the justness of the cause to the background. In any agitation we cannot specify clearly how a particular officer should handle a given situation. In the context of the situation and in deference to the rules, decisions should be taken quickly and at the same time with circumspection and implemented. The decisions taken should not give room for complaints. Municipal Elections and By-Elections are soon to take place. During the Election the feelings of jealousy and bitterness inherent in human nature, might erupt leading to violence and paving the way to disturbances undermining the law and order situation. You should effectively control any situation as you did so in the past.

In the course of today and tomorrow debate and discussion you will have opportunity to aim your views about several subjects such as the problems arising out of the maintenance of law and order, distribution of essential articles of food to the people, the Youth Corps Scheme, the Rural employment scheme, the scheme for the sanction of loans by the nationalised banks for the benefit of the poor, the strides made by us in the implementation of the Land Reform Legislations, distribution of Pattas, Tenancy Rights and Pass Books to the Agriculturists, maintenance of minor irrigation tanks, Rural housing, assignment of house-sites, rehabilitation of the repatriates from Burma and Sri Lanka. I am sure that we will discuss about them in detail and arrive at positive decisions.

The inaugural speech of the Chief Minister of Tamil Nadu at the Collectors' and Police Officers' Conference held in Madras on 12th & 13th July 1973.

GREAT STRIDES IN MARINE PRODUCTS - 439



Thiru K. K. Shah, Governor of Tamil Nadu, is seen addressing the Collectors' and Police Officers' Conference held in Madras on 12th and 13th July, 1973.

Another view of the Collectors' Conference.



Tamil Nadu has created enormous facilities for hygienic shelling, freezing and packing of prawns which find a ready market abroad. The processing and packing practices conform to pre-shipment inspection standards as also standards prescribed by I.S.I. for in-plant quality control.

Somuch so, the total export of fresh, frozen and canned marine products in Tamil Nadu in 1972 was 26 lakhs kgs., valued at Rs. 5.41 crores. The export of dried marine products in 1972 was 14 lakhs kg., valued at Rs. 41 lakhs.

As marine diesel engine is required in larger numbers for the mechanised fishing vessels, the State Government has decided to set up a project for the manufacture of marine diesel engines. The estimated investment is expected to be around Rs. 3 crores and is likely to be located at Ennore.

To have indigenous capacity for building deep sea fishing trawlers, TIDCO will be putting up a unit at Mandapam for building such fishing trawlers. This unit will also undertake maintenance and

repairs of sea going vessels which will enable the unit to earn foreign exchange. The estimated investment in this unit is expected to be about Rs 1.5 crores.

SIPCOT will be assisting a freezing plant to be set up near Madras. The project envisages the setting up of a freezing plant besides the acquisition of trawlers for deep sea fishing. In the context of the Workshop on Development of Marine Products on 1st and 2nd August 1973 two articles on the subject are published in this issue.



The Chief Minister declaring open the Beggar Rehabilitation Home at Mallavadi near Tiruvannamalai on 4th July 1973

THE EIGHTH 'TEMPLE' OPENED

The eighth Beggar Rehabilitation Home, out of the 10 such homes planned for the State, was declared open at Mallavadi near Tiruvannamalai on 4th July 1973 by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu. The construction of these ten Beggar Rehabilitation Homes are financed from the Rs. 1 crore Chief Minister's Birth Day Fund collected in the year 1971, and are conceived as the first step towards the eradication of beggary in the State. In the present lot of Rehabilitation Homes leprosy beggars are admitted on voluntary basis for care, cure and teaching of skill in some occupation so that they can, on discharge, lead a useful life, on their own without resorting to beggary.

Voluntary admission of leprosy beggars.

Beggars suffering from leprosy are admitted into these Homes voluntarily and also on the

The President of the Government Press Workers Union Thiru Nagalingam handing over a cheque for Rs. 25,000 to Dr. M. Karunanidhi, Chief Minister, for the Cycle-rickshaw Fund.



recommendations of the Sub-Inspectors of Police and also by the Medical Officers of the Government Leprosy Control Units. Some of them are also persuaded by the Police to join the Rehabilitation Homes. Each Leprosy Beggars Rehabilitation Home has a capacity to accommodate 500 leprosy beggars, though the Mallavadi Home has provision for 700 persons. There is provision for separate rooms for such of the leprosy beggars who have families.

Thorough Medical check-up on admission.

Leprosy beggars on admission are given a thorough medical check-up and are allotted to convenient and suitable dormitories. The inmates are given free food (two times tea, a breakfast and two meals a day) and on days of National importance special diet is being given. They are given two pairs of dress a year and a pair of micro-cellular rubber chappals.

Deformities are also attended to and rectified through orthopaedic and physio-therapy.

All the Leprosy Beggars Rehabilitation Homes are situated in vast campus and there are provision for cultivation. Able-bodied inmates are given training in mat-weaving, tailoring, carpentry, shoe-making, poultry keeping, kitchen work, agriculture and gardening. Wages are also given to the inmates as pocket money to enable them to buy some personal requirements. The wages range from rupee one to two a week according to the nature of the work done by them. The inmates are provided with protective gloves to prevent their hands being damaged while attending to work involving handling tools. Inmates who are incapable of attending to any work, are given 25 paise a week as pocket money. Arrangements are also being made for the running of canteen and a bunk shop in the campus where the inmates can buy their personal requirements. The inmates are also given washing soap and coconut oil once a week and toilet soap once a month. Each inmate is being provided with a mat and a pillow and a plate and a tumbler.

Recreation for inmates.

There is a library and recreation-cum-radio room in each of the leprosy beggars rehabilitation homes where the inmates spend their leisure hours. Adult literacy campaign also is organised with the help of the few literate inmates. Provision is also being made for games and sports, music, dance, etc., and the Government have set apart funds for these items. Arrangements are also made for the exhibition of film shows in the Beggar Homes by the State Publicity Department.

Inmates are allowed leave for a maximum period of seven days at a time to enable them to visit their friends and relatives and visitors coming to see the inmates are also permitted to meet them.

Hospital facilities.

Each Leprosy Beggar Rehabilitation Home is provided with a Hospital and dispensary, operation

All Modern Facilities Provided In The Beggar Rehabili- tation Homes

theatre, physio-therapy unit, etc., and manned by qualified medical staff. The general administration is by a Superintendent, assisted by ministerial staff. There is also provision for a Social Welfare Officer to attend to the personal needs of the inmates and enable them to be accepted by their families with love and respect due to them.

Trained inmates are given appointments in the Homes in occupations such as para-medical work, kitchen work, sanitary workers, peons, Nursing Assistants, etc., and they are given a consolidated salary of Rs. 70 a month in addition to free boarding and lodging and so far nearly 18 such inmates have been employed in the various Leprosy Beggars Rehabilitation Homes as a first step towards the rehabilitation of leprosy beggars. The Government in the Social Welfare Department have also evolved a scheme of giving financial assistance to selected inmates through Nationalised Banks to start petty trades which will go a long way in the ultimate rehabilitation of a good number of leprosy beggars after discharge from these Homes.

Located in vast area.

The Beggar Rehabilitation Home of Mallavadi is situated in an area of 24 acres of forest land, seven miles from Tiruvannamalai on the Polur Road. There are four storied terraced dormitories which will accommodate about 700 inmates including 128 family rooms. There are two work sheds where mat-weaving, shoe-making, tailoring, carpentry, etc., are being done by the inmates. There is a poultry unit with 250 birds under the supervision of a poultry assistant. There is a beautiful garden in front of the main building which adds beauty and serenity to the campus and helps the leprosy beggar inmates to spend their leisure hours in the most exhilarating surroundings. There are quarters for the Superintendent, Medical Officer, Pharmacist, Nurse and also for the last grade servants. An area of about 10 acres are to be brought under horticulture and grain crops. There are at present nearly 500 inmates in this home looking forward to their eventual rehabilitation.



Dr. M. Karunanidhi, Chief Minister, inaugurating the Southern Head Works on 3rd July 1973.

WATER-SUPPLY IN MADRAS CITY

BOLD NEW SCHEMES TO KEEP PACE WITH DEVELOP- MENTS

Madras City is a narrow strip which has developed along the coast and unaccountably the growth pattern has been for the northern portion to attract industries to avail the harbour and broad gauge railway facilities and the Southern portion to attract more and more residential units. The present water-supply source being located to the north of the city, the extensive residential areas of the South suffered from lack of water-supply due to lack of sufficient pressure in the water-mains. A set of booster pumps were located in South Madras in the Rs. 78 lakhs Southern Head Works of Madras Corporation which was inaugurated by Dr. M. Karunanidhi, Chief Minister, on 3rd July 1973. The scheme has been executed with the sole purpose of facilitating the water-supply to South Madras.

Past History of Water-Supply

The Water-Supply System of the City of Madras dates back to 1872. The raw water was drawn from Red Hills through open channel by gravity to Kilpauk and distributed from there through pipe lines branching off to various parts of the City. Later on, between 1914-18, it was filtered at Kilpauk Water Works and pumped into the Distribution System which was simultaneously enlarged.

Till the Second World War, the per capita supply was maintained at 115 litres (25 glns.) per day and since then the rate of supply has been steadily declining on account of influx of population. Though the storage capacity was doubled

by construction of Poondi Reservoir in 1944, the daily per capita supply was never brought up to 115 litres (25 glns.) in spite of further increase in the sources as the population was increasing by leaps and bounds beyond all expectations. Of course, the Corporation and the Tamil Nadu Government were actively considering the proposals to bring Cauvery water to Madras City.

Short term measures

From 1969, we were able to reap the benefits of some of the short-term measures taken to increase the daily supply gradually from 180 million litres (40 m. glns.) to 225 to 235 million litres (50 to 52 m. glns.). Now there is demand for more water mainly on account of modern amenities and vertical growth, and Plans are being made to obtain adequate quantities of water required for a population of 40 lakhs anticipated in the year 2001 at the rate of 180 litres (40 glns.) per head per day.

With the augmentation of the City's water-supply by Veeranam Scheme, the City will be able to obtain about 145 million litres (40 m. glns.) per day in a few years. Every effort is being made to re-design the Distribution System to supply water equally to all parts of the city. One of the steps taken to re-design is to establish a separate Pumping Station at Prakasa Mudali Road, T'Nagar and boost the pressure for southern zones of the city. As the total quantum of supply cannot be increased with the existing sources, the pattern of supply will be modified in such a way that the same

quantity is distributed to the various parts of South Madras at a higher pressure, but for a shorter duration.

This Headwork is supplying water to the Southern Zone areas such as Theagaraya Nagar, Teynampet, Mylapore, Adyar, Guindy, Saidapet, Kodambakkam, etc. Filtered water from Kilpauk will be pumped through a portion of the existing Trunk Main by pumpsets erected at the Kilpauk Water Works into 3 New Underground Reservoirs of 5.3 million gallons capacity at Prakasa Mudali Road. Separate pumpsets will pump this water through an 80 feet high Overhead Tank of 1 million gallons capacity to the various zones. The cost of the Scheme is Rs. 78.00 lakhs and this scheme is financed by the State Government, half as grant and half as loan.

Filtered Water Reservoirs and Connecting Mains :

Three filtered water reservoirs have been constructed side by side with common partition walls in between. Two of the tank measure 163' x 148' inside while the third tank is 208' x 118'. The arrangement of tanks has been made to suit the available space at site. The tanks are 13' - 6' deep with 12' depth of water. The tanks are partly above ground level, the top of roof slab being about 6 feet above road level.

Suction Chamber :

The 48" C. I. pipe line leading from the outlets of the underground tanks connects to a rectangular suction chamber in which are located the suction strainers of the six pumps. The chamber is in two halves with controlling penstocks so that any half can be isolated and emptied for attending to repairs on the suction pipe lines.

Pump House :

Six pumpsets have been installed at the Southern Headworks each with a duty of 6,000 g.p.m., against a head of 110 feet. Four pumps working together will discharge the requirements of 24,000 g.p.m. and two will be standby. The pumps are of horizontal split casing with slipring splash proof motors with

VEERANAM PROJECT A BOON TO THE RESIDENTS OF MADRAS CITY

16 inlet and 12" outlets. Each pump is directly coupled to 415 V-275 HP., 1,440 r.p.m., 3 phase 50 cycles motor.

Necessary H.T. and L.T. control panels, motor starters, capacitors, etc., conforming to regulations have been provided. A 5 tonnes hand operated travelling crane has been provided for maintenance.

Delivery Pipe Lines :-

The delivery header of the six pump sets is connected to a 42" iron pipe line to which is also connected the 1 million gallons overhead balancing reservoir.

For the present, water from the Southern Headworks will be pumped directly into trunk mains feeding the various Southern Zones. After the completion of the overhead

tank which has been taken up recently, the overhead tank will serve to balance out the fluctuations in demand and the supply head will be more uniform.

The construction of civil works and supply and erection of machinery were entrusted to various contractors while the pipe laying works were done departmentally.

Distribution of water from Southern Headwork.

Of about 50 m.g.d. of water that can be drawn from the existing sources for the City supply, about 16 m.g.d. will be the proportionate quantity available for the various zones in South Madras and this quantity will be pumped from the Southern Headworks. As it is, this Southern Headworks is intended to feed the following zones :

The Zone 6-A comprises of Gopalapuram, Royapettah, Krishnampet and North Mylapore. The Zone 7 comprises of T. Nagar, Teynampet, Alwarpet, South Mylapore and Raja Annamalaipuram. The Zone 8-B comprises of Choolai Medu, West Mambalam, Vadapalani, Saligramam, Ashok Nagar, etc. The Zone 7-C comprises of Saidapet, Guindy, Government House and Kottur area. The Zone 9 comprises of Adyar, Gandhi Nagar, Indira Nagar, Shastri Nagar, etc. Hitherto, the supply to the zones mentioned above has been direct from the Kilpauk Water Works. Though the pressure during peak hours has been inadequate, the supply has been maintained for a longer period. After commissioning the Southern Headworks, the pattern of supply to these zones will change and the supply will be made from the Southern Headworks at a higher pressure but for a lesser period. The quantity of water that can be supplied, can be increased after the Cauvery water from Veeranam is made available in another two years time.

Utilisation of Southern Headworks for distributing Cauvery water.

With the commissioning of the Veeranam Scheme 1st Stage, about 32 m.g.d., of water will be made available to the City. Out of this

quantity, 5 m.g.d., will be let off en-route near I.I.T., Madras for meeting the requirements of I.I.T., and zone 9 (Adyar, Gandhi Nagar, Kasturba Nagar, Shastri Nagar, Besant Nagar, Indira Nagar, etc.) and the balance quantity will be brought to the Southern Headworks from where it will be pumped to the Southern zones, viz., Zone 6-A, 7, 8-B and 8-C. Additional underground tanks are proposed to be constructed in Nungambakkam Lake area near the Southern Headworks for storing the Cauvery Water.

When another 40 m.g.d., of Cauvery water is made available on the completion of second state of the Veeranam Scheme, the pattern of feeding some of the zones will be changed utilising the existing system after adding pumping stations, underground storage, overhead reservoirs and strengthening the existing distribution system suitably.

Future Planning.

With the rapid increase in the population and building activities all over the city and the need for increased water supply, the entire distribution system has to be re-designed. We may have to provide water supply for a population of 40 lakhs anticipated in 2001 at not less than 40 gallons per head per day at a minimum tail end pressure of 35 ft. Consequently, we have to go in search for more water, increase the pumping capacity and increase the pressure. Future planning should be to utilise about 50 to 55 mil. gals., of water from the existing sources, about 70 mil. gals., of Cauvery Water to be brought from Veeranam in two stages and Krishna Waters from Andhra. As it may take considerable time to obtain Krishna waters from Andhra, the immediate planning will be to utilise the existing system with a few additions and alterations for distributing Red hills and Cauvery waters.

The Fifth Plan has been drafted to complete the Spillover schemes of the Fourth Plan for providing equal supply throughout the city and it include new schemes to increase the per capita supply from 25 gals. to 40 gals. per head per day and the tail-end pressure from 25 to 35 feet.

Redesigning The Entire Distribution System Of Water Supply In The Offing

Spillover Schemes.

The Spillover Schemes of the Fourth Plan which are to be carried out in the Fifth Plan include :—

1. Construction of eighth Underground Filtered Water Tank of 2 million gallons capacity inside Kilpauk Water Works ;
2. Construction of Mechanical Filters of another 20 mil. gals. per day capacity ;
3. Construction of Underground filtered water tanks in Nungambakkam Lake area to supplement the tanks at Southern Headworks to receive the increased supply consequent on commissioning of Veeranam Scheme ;

4. Laying of Cast Iron Trunk Main, Sub-mains, Feeder mains and Distribution mains in various zones wherever such mains have not yet been laid and

5. Bringing 40 m.g.d. of Cauvery Water from Veeranam (executed by Tamil Nadu Water Supply and Drainage Board).

New Schemes proposed to be taken up for execution are :

1. Bringing another 40 m.g.d. from Cauvery (to be executed by the Tamil Nadu Water Supply and Drainage Board) ;
2. Constructing an overhead tank of higher staging ;
3. Installing new pumpsets of higher head and higher capacity ;
4. Construction of another masonry conduit ;
5. Laying another Pumping Main from Kilpauk ;
6. Providing boosting stations in high level areas ;
7. Redesigning the distribution system in all the zones to meet the ultimate demand in 2,001 with additional pumping stations, underground storage tanks, overhead reservoirs, etc.

The experience of the last 50 years has been that development has always outstripped the planned targets. So, a bold and imaginative plan for the future is necessary. There is no doubt that Madras City and its environs forming Greater Madras will continue to develop rapidly especially in the matter of industries. The Greater Madras-Area is taken roughly from Ennore in the North to Mahabali-puram in the South, including the already developed Avadi-Ambattur Industrial belt, Tambaram, etc.

The various component parts of Greater Madras will continue to get their water supply partly from river sources and partly from ground water. But, as the available are limited and already fully utilised, the Cauvery Veeranam Project for Madras City from the South and the Krishna Project for feeding Madras City from the northern portion of Greater Madras have to be carried out early.

FINANCE FOR INDUS- TRIAL CO-OPE- RATIVES IN TAMIL NADU

By
S. Rajaratnam.

The most unfortunate members of our society are those who, though skilled, find themselves unemployed by no fault of theirs. Most industrialised countries have provision for unemployment relief. As Galbreith has observed, unemployment relief is better than nothing, but work is better than unemployment relief.

Our State is unique in India in this respect that it has formed a number of industrial co-operative societies which have, for their primary objective, the provision of employment to a large class of people who would otherwise have remained unemployed. The various co-operative societies which are functioning with these socio-economic objectives are engaged in the following principal activities :—

1. Co-operative Tea Factories
2. Co-operative Sugar Mills
3. Co-operative Textile Mills
4. Weavers' Co-operative Societies
5. Metal Workers' Societies
6. Match Producers' Societies
7. Match Workers' Societies
8. Leather Workers' Societies
9. Wood Workers' Societies
10. Potters' Societies
11. Mat Weavers' Societies
12. Gem Cutters' Societies

The wages paid to the labourers engaged in these various societies are much lower than the wages earned by labourers in organised industries as manual labour or labour with elementary tools can never compete with the efficiency of modern machinery. Realising this, the State has come to the rescue of several classes of the weaker members of our society. The handloom societies are subsidised by a levy on the mill industry. Various handicraft societies get loans at subsidised rates. Even so, many of these societies are incurring losses and are on the point of closure. A classic example is the various match workers' industrial co-operative societies in which thousands are employed. Here the heavy incidence of the excise duty on the one hand and the powerful competition of an organised industrial unit using up-to-date machinery and owned by foreign interests are driving them out of existence.

When the various industrial co-operative societies were formed it was Government's intention that they should be financed by Tamil Nadu State Co-operative Bank and the various District Co-operative Central Banks which were and are primarily intended for financing agriculturists in the co-operative fold. But it was found that the State Co-operative Bank and the District Co-operative Central Banks on account of the twin factors of their agricultural bias developed over a long time and their dependence on demand and short term deposits took little interest in financing these industrial co-operatives. It was then that the Government, for a time, financed these societies direct. Then they conceived the idea of starting a separate bank for the purpose and thus came into existence the Tamil Nadu State Industrial Co-operative Bank whose genesis and the "Raison-D'Etre" for functioning is, as the Damry Committee pointed out, the apathy and indifference of the State and District Co-operative Central Banks. Even now there is a Government Order that the State and the district co-operative central banks can finance all the industrial co-operative societies. But the apathy and indifference of the State Co-operative Bank and the District Co-operative Central Banks to which the Damry Committee referred, continues, and so the time has come for the Reserve Bank to do rethinking on the subject and recognise this Bank, so that it can not only open branches at various important centres in the State but also have the benefit of refinance and credit guarantee.

The R. B. I.'s Role.

There was a time when the Reserve Bank tried very much to induce commercial banks take to industrial finance in a large way. But commercial banks following English traditions were reluctant to undertake term financing of industries. Depending as they are on demand and short term deposits, they are understandably reluctant to lock up their funds in long term loans to industries to any sizable extent. It was then that the Reserve Bank of India adopted various measures to augment the resources of the State finance co-operatives which are best suited to undertake term finance to industry. Now the Reserve Bank has been expecting the State and

District Co-operative Central Banks which are primarily interested in financing agriculturists to undertake industrial finance. They have to this day showed no enthusiasm to undertake the financing of industrial co-operatives. An additional reason for their reluctance is their natural fear of jeopardising their liquidity position—a fear which they share with the commercial banks and for similar reason. Under these circumstances it is sad to observe that the Reserve Bank of India is putting all kinds of impediments in the functioning of this Bank. They are goading unwilling horses to go in a direction contrary to their will and riding a willing horse like this Bank to a standstill.

In this connection I must mention the case of the various industrial co-operative tea factories which have been started by the Directorate of Industries, for the purpose of processing green leaves into made-tea in up-to-date factories and sell the finished products by modern selling methods and distribute the profit among the various small tea growers who are the members of these tea factories. Before the establishment of co-operative tea factories, the small tea growers were the victims of the rapacity and greed of middleman, brokers and bought leaf factories. The co-operative tea factories have brought a measure of prosperity to more than 5,000 tea growers in the Nilgiris who own 5 or less number of acres. The co-operative tea factories in order to get quality green leaves during the season give advances to their members for purposes of bying manure and meeting other cultivation expenditure. On this ground, the tea factories are sought to be taken out of the purview of this Bank and placed under the jurisdiction of the State Co-operative Bank and the District Co-operative Central Banks.

Any factory with enlightened management undertakes activities which assure supply of raw materials of requisite quality in adequate quantities. Many sugar factories in order to assure themselves of regular supply of sugarcane, extend credit to sugarcane growers and even supply seedlings and manure. In some cases, the sugarcane growers

are share-holders of the sugar company to a sizeable extent. The sugar factory does not cease to be a factory because of the so-called agricultural activities undertaken by it. These sugar factories are considered eligible units for industrial finance and are in fact financed by term lending institutions. In fact, if a sugar factory has not made adequate arrangements in the manner above prescribed, for assuring itself of supply of sugarcane, we may consider it in-eligible for financial accommodation. Some sugar factories which did not undertake such measures found themselves in difficulties as the sugarcane in the area were diverted to gur and kandsari manufacturers.

The tea factories are in a similar situation. Their efforts to assure themselves of regular supplies of quality green leaves by extending credit to the growers for purchase of manure and meeting other agricultural operations must be appreciated.

The suggestion that the requirements of the tea factories should be bifurcated into industrial and agricultural credit and the first may be financed by this Bank and the second by the district central banks is also not practical. Small borrowers like these societies should not be forced to go to different lending agencies by an artificial division of their needs.

The tea factories are among the best customers of this bank and a very sizeable sum is invested by the bank in these factories. In fact, the success of these co-operative factories has led to a demand by a large number of small tea growers in the Nilgiris for starting similar co-operative tea factories and the department is organising some more co-operative societies.

I must here say that before the starting of these co-operative tea factories by the initiative of the department of the Directors of Industries and Commerce, when the small tea growers were put to untold hardships on account of their dependence on money lenders brokers and bought leaf factories, neither the Reserve Bank nor the

district central banks thought of coming to their rescue by meeting their credit needs. Now that the department of the Director of Industries and Commerce has started these factories and arranged for their financing by this bank and they are functioning successfully, this business is sought to be taken away from this Bank to the district co-operative central banks. This is fair neither to the department nor to the bank.

When I attended a Conference of co-operators at Poona, convened by the Vaikunth Mehta Co-operative Institute last year, representatives of the Andhra and Mysore areas complained that while Tamil Nadu was having an Industrial Co-operative Bank for financing industrial co-operative societies, they suffered very much, because they do not have similar institutions in their States. The Andhra and the Mysore representatives stated that their State Co-operative Bank and district co-operative Central Banks either openly refused to accommodate industrial co-operatives or were very indifferent in meeting the credit needs of industrial co-operatives. The experience of this State is also similar. Therefore, this bank should be recognised at the earliest and all steps should be taken to make it viable. We have already agreed to have ourselves affiliated with the State Co-operative Bank. While the district co-operative central banks are divided geographically we are divided functionally from the other banks affiliated to the State co-operative Bank and so we must be allowed to operate over the whole State, side by side with the State Co-operative Bank and the district co-operative central banks, so that the various industrial co-operative societies will have a choice as between two competing agencies—a facility which is available to traders and industrial borrowers in a much larger measure. However as we look at it, there are compelling reasons for the continued functioning of this Bank, which has been practically the only source of credit for the industrial co-operatives of the State most of which by the nature of the members and the nature of their business are weak and non-viable requiring a measure of Government support which is best routed through an institution which functions with sympathy and specialised experience.

RECOMMENDATIONS FOR INEXPENSIVE PANCHAYAT ADMINISTRATION

The Administrative Reforms Commission headed by Thiru T. A. Varghese, Retired Chief Secretary, presented to the Minister for Local Administration a comprehensive report on the Panchayat-Raj. The Commission has reviewed the performance of that organisation during the last 15 years and made many useful recommendations.

The Commission felt that Village Panchayats, as now constituted, are far too small to be financially viable and has suggested regrouping them to the extent practicable into larger units of about 5,000 people each. Suggestions have been made to improve the collection of Panchayat taxes and to augment their resources by tapping new sources of revenue and also by graded grants specifically earmarked for village sanitation. To ensure unfailing street-lighting, which is the major amenity provided by panchayats the Commission has recommended that the responsibility for the replacement of fused bulbs, should be transferred from the Electricity Board to the respective Panchayats and that the supply of power should be charged for, on the usual metered basis. Attention has been drawn to the unsatisfactory state of Panchayat accounts and to reduce the many malpractices arising therefrom, remedial measures have been suggested such as the provision of clerical assistance to Presidents and frequent checks by inspecting officers.

The Commission has analysed the causes for the generally unsatisfactory performance of Panchayat Unions on the Agricultural front and made many recommendations for streamlining the Agricultural extension organisation. In assessing merit for promotion from amongst the ranks of Gramasevak, Extension Officer (Agriculture), Block Development Officer and Revenue Divisional Officer, the interest shown in Agricultural Development should be the prime consideration. The organisation of the many special drives for various purposes such as family planning, small-savings, etc., should be timed carefully so that they do not clash with periods of intensive agricultural activity. To give an agricultural orientation to the Panchayat organisation and to co-ordinate the work

of District Collectors in this respect, an officer of the rank of Member of the Board of Revenue is to be appointed as Commissioner for Agricultural Production and Panchayat Development. In order to reduce stagnation and consequent loss of morale, the Commission has indicated avenues of promotion for the different ranks of the Panchayat organisation. Gramasevaks will be made eligible for promotion as Extension Officers after suitable in-service training. Competent Block Development Officers will be promoted as Deputy Collectors with a special quota of posts reserved for that purposes. The Commission has envisaged the gradual integration of the personnel of the Panchayat Development and Revenue Departments into a common service over the next decade.

In view of the scope for malpractices in the system of indirect election of the Chairman of the Panchayat Union and to give him greater freedom of action, the Commission has advocated direct election by the people. It has also recommended that Members of the Legislature should not be permitted to stand for election to this office.

The Commission has suggested the constitution of a Panchayat Finance Commission, a high power body to assess the needs of the organisation over a five-year period and to recommend the devolution of funds and their distribution amongst the different units on a rational basis. The local option given to Panchayat Unions to levy a surcharge on Land Revenue has become outdated on account of its haphazard and marginal impact on the total revenues of Panchayats. The Commission has therefore suggested that this power be withdrawn and that the Government should impose this surcharge directly on a uniform basis, to be distributed according to the advice of the Panchayat Finance Commission.

To encourage local initiative and to speed up the administration, the

Commission has recommended more liberal delegation of powers all-round and in particular, the enhancement of the powers of the Union Engineers on the technical approval of Rural Works. It has suggested relaxation of some of the restrictions placed on Union Councils in sanctioning expenditure on new welfare schemes out of their general funds.

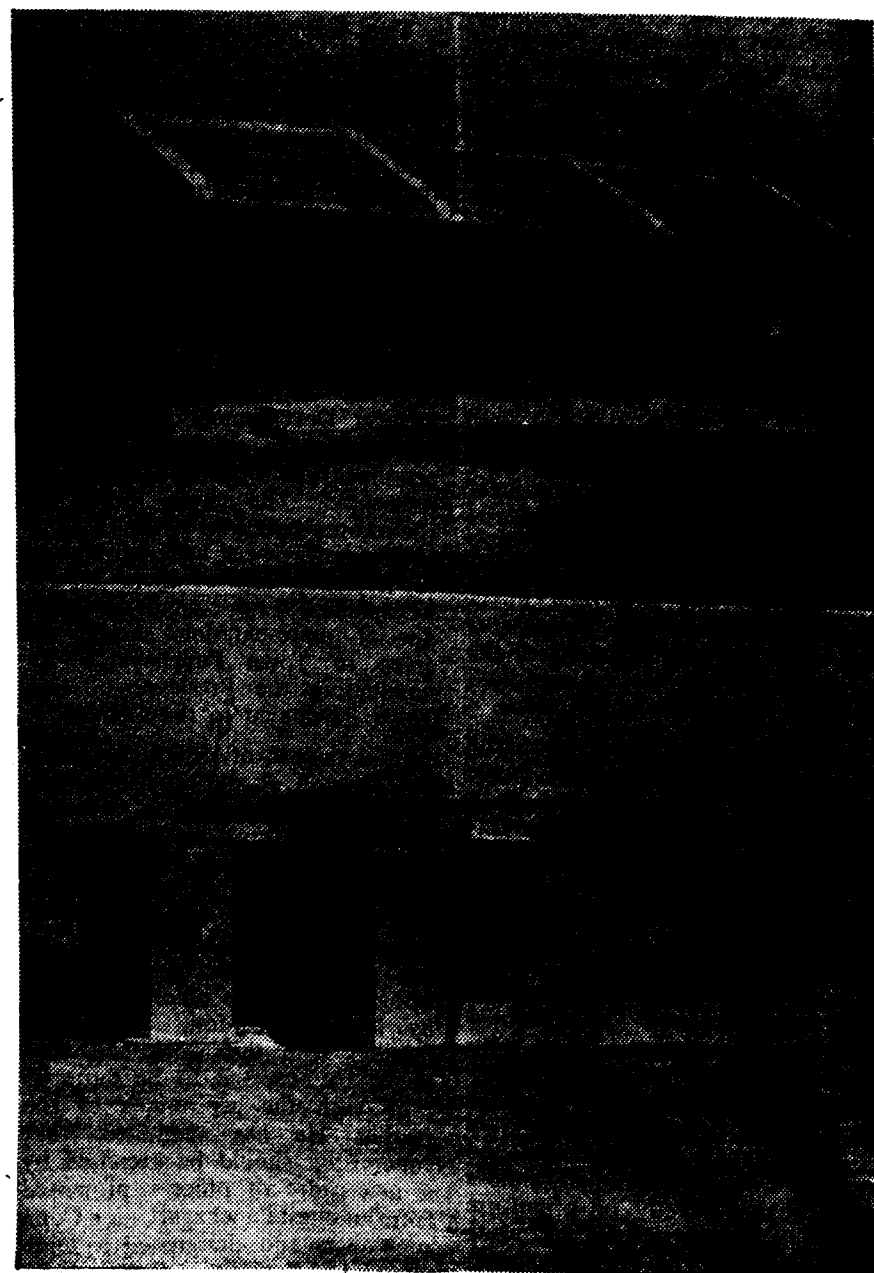
Intensive Auditing

The Commission has drawn attention to the large volume of pending audit objections and recommended the constitution of an efficient accounting organisation and also a high power Committee on the model of the Public Accounts Committee to deal with major audit objections.

The Commission has suggested many measures for enlivening the proceedings of the District Development Council. It should be associated in the drawing up of the District Development plan and in the evaluation of the benefits accruing from schemes already implemented. The action taken on the recommendations of the Council should be reviewed and the reasons for rejecting any of them should be explained at subsequent meetings. Special representation should be given to Town Panchayats by nominating the President of one Town Panchayat to the Council.

In a minute of dissent recorded by Thiru A. R. Subbiah Mudaliar, M.L.A., Member of the Commission, he has drawn attention to the undesirability of the Revenue Divisional Officer, exercising supervision and control over the Panchayat organisation. He has stressed the need for the supervisory function being entrusted to officers who are, by long association, thoroughly familiar with this work and who might be expected to be more in tune with the aspirations of the people. He has suggested that supervision should be exercised by a new cadre of officers promoted from amongst Panchayat Union Commissioners and designated as Divisional Development Officers, under the direct control of District Development Officers and the overall supervision of the District Collector.

VILLAGE HOUSING PROJECT NEW IMPETUS AND MORE MONEY

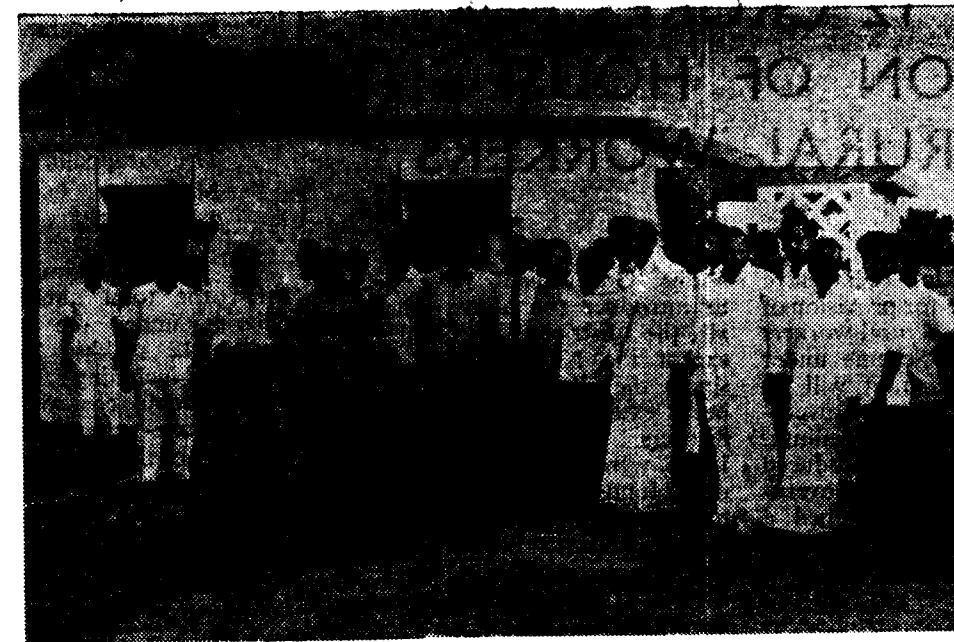


Model houses for Village Housing Project.

A vigorous impetus is to be given this year for providing houses to the rural population under the Village Housing Scheme, with a provision of about Rs. 80 lakhs. The Village Housing Project Scheme is a State Plan Scheme for the development of selected villages in Community Development and National Extension Service areas of the State of Tamil Nadu, to encourage villagers to uplift their living condition on "Selfhelp basis" by advancing loan amount to a maximum of Rs. 4,000 in three instalments, to such of those persons who possess land of their own with repaying capacity of the loan with interest in twenty equated annual instalments. The loan amount of Rs. 4,000 per house is the 80 per cent of the estimated cost of the building. The rest of 20 per cent has to be contributed by the beneficiaries by way of labour, local materials and savings gathered in the course of his work. The house built under this aided self-help basis stands to his stead as a shelter and property acquired in the long run of twenty years.

The Village Housing Project Scheme is being implemented in the districts through the panchayat union staff and the revenue staff. The Divisional Engineer, Rural Housing Cell, gets allotment from the Government and reallocates the amount to various Panchayat Unions according to their requirements, who in turn disburse the same to the beneficiaries.

The Government have spent a sum of Rs. 121 lakhs till March 1973, for the implementation of the Village Housing Project Scheme. The Government have provided a sum of Rs. 28.99 lakhs in the Budget Estimate 1973-74 for this Scheme. In addition to this, the



Thiru K. Rajaram, Minister for Labour Welfare and Housing visiting a model house built under the Village Housing Project.

Government have allocated a sum of Rs. 50 lakhs for the sanction of loan under the Village Housing Project Scheme from the Tamil Nadu Special Welfare Fund. The entire amount provided in the Budget will be utilised in the current financial year.

AT MADHAVARAM

The Madhavaram Panchayat Union near Madras is one of the blocks where the scheme has come up well. This is situated on the main road from Madras connecting Tirupathi, Nellore and Tiruthani, via Red hills. The total area of this block is 86.42 sq. km. (3,337 sq. miles) with a population of 45,520. There are 19 village panchayats and 2 town panchayats with 39 revenue villages and 51 hamlets in this Panchayat Union.

NATURE OF THE BLOCK.

The major population of the block is industrial workers. Major factories like Manali Refineries, Madras Fertilisers, Indian Organic Chemicals, Pilot Pen Company, Southern Screw Factory, etc., are lying in the block. The special feature of this block is that it has got much industrial atmosphere rather than agricultural.

MODEL HOUSES

As a Pilot Scheme, five model Houses worth of Rs. 2,500 each have been constructed in the four selected villages such as Polal, Kadirvedu, Soorapattu and Mathur by Rural Housing Cell with the technical staff from Highways and Rural Works Departments.

instalment of loan of Rs. 1,000 each was disbursed as below :—

	Cases.
Polal	20
Kadirvedu	24
Soorapattu	3
Total	47

LOAN SCHEME

The villager has to construct the house on aided self help basis. The maximum quantum of loan assistance is Rs. 4,000 which is 80 per cent of the cost of building. The rest 20 per cent the villager has to contribute by way of labour and savings. The loans are distributed in four instalments after the careful watch over the progress of the buildings of the beneficiaries by the technical staff. The loans are distributed only to those who possess 5 cents of own land and the repaying capacity of loan with interest in 20 years.

HOUSING PROJECT SCHEME

This Scheme is being implemented in the year 1972-73 in Polal, Kadirvedu and Soorapattu villages. The following new cases were taken up for implementation and the first

During the year 1973-74 as many as 4 new cases in Soorapattu and one new case in Kadirvedu Village are taken up. Out of these 52 houses, most of them have reached roof level and will be completed shortly. During 1973-74, the second and third instalments of loan were disbursed to these cases. A sum of Rs. 1,49,000 has been sanctioned for the year 1973-74. Out of this a sum of Rs. 71,000 has been disbursed.

The whole scheme at the State level is under the power and pervue of the Tamil Nadu Ministry for Labour and Housing and at the district level, it is under the control and supervision of the respective District Collector.

This Rural Housing Scheme is very attractive and is very helpful to the villagers in this area and is bound to be a grand success.

Rs. 12 CRORES FOR PROVISION OF HOUSE-SITES TO RURAL WORKERS

The Government of India have formulated a scheme for provision of house-sites to landless rural workers as a Central Sector Scheme under which 100 per cent grant will be made available to State Governments outside the State Plan Ceilings. The Scheme has been introduced in Thanjavur district. The Government of India have sanctioned a sum of Rs. 75.51 lakhs for the scheme as detailed below :—

	Rs.
(a) Cost of acquisition of 548 acres of land (Rs. 4,575 for one acre).	25,07,000
(b) Cost of development of 33,692 house-sites at Rs. 150 per site.	50,44,000
Total	75,51,000

The Government have decided to introduce the above scheme in all the districts of Tamil Nadu except the Nilgiris and Madras since the Kudiyiruppu Act has been extended to all the above districts. When the Government of India were approached for additional funds towards cost of acquisition and development of house-sites to meet the actual cost of acquisition and development for four cents instead of two cents per house-site, they have stated that an exception cannot be made in the case of Tamil Nadu and that the Government of India are following the same yardstick in respect of projects received from other State Governments. Preliminary discussion with the Collectors and Officers concerned at the district headquarters to finalise the programme of introduction of the above scheme as contemplated by the Government of India has been completed in the following districts :—

Salem.
North Arcot.
Coimbatore.

Chingleput.
Ramanathapuram.
Kanyakumari.
Dharmapuri.
South Arcot.
Tiruchirappalli.
Madurai.
Tirunelveli.

It is approximately estimated that the total number of beneficiaries under the above scheme will be 12 lakhs in all the 12 districts including Thanjavur. The approximate cost of implementing the above scheme in all the 12 districts will be as follows :—

	(RUPEES IN CRORES.)
Cost of acquisition at Rs. 5,000 per acre for 30,000 acres.	15
Cost of development of 12 lakhs sites at Rs. 150 per site.	18
Total	33

The Government of India have intimated that a sum of Rs. 9 crores has been allocated for Tamil Nadu for implementation of the above scheme. The Collectors may be requested to take necessary action for the speedy implementation of the scheme. The views of the Collectors in this matter may be elicited.

Thiru Anbil. P. Dharmalingam, Minister for Local Administration receiving the Report on Panchayat Development Administration from Thiru T. A. Varghese, I.C.S. (Retired), Chairman of the Administrative Reforms Commission. A separate article on the contents of the Report on Panchayat Development Administration is published in this issue at page 19.



Retiring Police Personnel Spared From The Agony Of Retire- ment



Thiru Arul, I.G., handing over the gratuity, G.P.F. and Conduct Certificate to the retired Police Officials.

When 50 Police personnel of the subordinate ranks retired recently, the office of the Commissioner of Police was agog months ahead, to see that all of them got their gratuity, Pension-papers and Provident Fund amounts on the day of retirement. They roped in the offices of Accountant-General and Pay and Accounts Officer and saw to it that all that was due to these men were paid on the spot. The retiring personnel were given a ceremonial send off. The speeches delivered by C.O.P. and I.G. are given below to give some idea of the labour put in by the serving personnel on behalf of retiring personnel.

Speech delivered by the Inspector-General of Police on the occasion of the passing out parade held on Friday, 6th July 1973 in connection with the send off to retiring City Police Personnel.

I am greatly gratified to be heard this morning, for, nothing gives me greater pleasure or satisfaction than the promotion of the welfare of the constabulary, and today's administrative action by the Commissioner of Police, the Accountant-General and the Pay and Accounts Officer is calculated to advance the welfare of the lower ranks of the force who constitute the bulk of it. What you are doing today will permeate to the lower ranks of the force not only

in the City, but in the whole State and help to raise their morale, and to cement the bonds of understanding and mutual respect between leaders and the rank and file. What we have attempted to do this morning has sprung from a situation in which the retired constable was placed in a position of misery, by his pension, his gratuity and his Provident Fund not being sanctioned for months on end, and sometimes the delay has extended to periods of more than a year. During this long agonising period, the retired Constable is obliged to undertake several journeys from his village to the city with whatever slender resources he has and walk the corridors in the offices of the Commissioner of Police and the Accountant-General, in vain attempts to get his pension and other dues settled. During this agonising period his family in the village is facing near starvation. I am not trying to be melo-dramatic. I am merely stating the stark realities of the situation, and therefore, a duty is cast on us — administrative officers — to set things right and to streamline anarchic and antiquated system which causes unnecessary suffering.

These 52 Sub-Inspectors and men have laboured night and day for over three decades rendering useful service to the people in an inconspicuous and unobtrusive manner and by their unremitting toil they have upheld the department

as a whole and have ensured safety to the people.

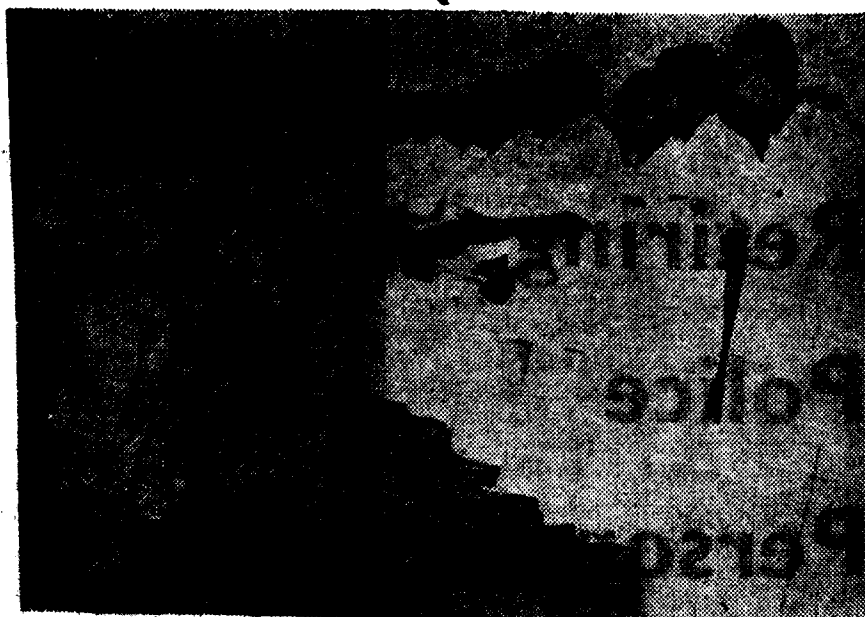
Uncomplaining they endured stress and strain and at the worst even wounds and death. These fifty officers and men have likewise laboured in sun and rain, by night and by day and having laboured thus they have now reached the last phase of superannuation and retirement. I am happy for you and for your families that we have been in a position today to give you the pension orders and other monetary benefits within 5 days of your retirement.

I would like to take this opportunity of wishing you and your families peace and contentment for the rest of your days. What we have done to-day is the ultimate in the process of man-management and the credit for all this goes to Thiru Shenai, our ever industrious Commissioner of Police. I applaud him for the imagination with which he conceived this idea and the energy and zeal with which he translated this idea into action. What Thiru Shenai has done today is without precedent in Tamil Nadu, or in any State in India.

My thanks are also due to the Accountant-General and the Staff, particularly, Thiru Edwin, to the Pay and Accounts Officer, to the Deputy Commissioner (Headquarters) and all the ministerial staff in the Office of the Commissioner of Police. What we have achieved to-day by co-operative effort between three Departments is a good augury; for further co-operation which is bound to enhance the well-being and the welfare of thousands of our Constabulary who form the backbone of the force. I once again take this opportunity of wishing these 50 Sub-Inspectors and men all joy and happiness and long life and prosperity in the days of their retirement.

Report presented by Thiru K. R. Shennai, Commissioner of Police, Madras, at a parade got up at Rajarathinam Stadium, at 7 a.m. on Friday, 6th July 1973 to bid farewell to 52 Police Personnel who superannuated on 1st July 1973.

Today's parade has been got up to record the appreciation of



A Farewell Parade was conducted to retiring Policemen at Rajarathinam Stadium on 6-7-1973 when I.G. handed over the Gratuity, G.P.F., etc., to them;

the department to 3 Sub-Inspectors, 3 Reserve Sub-Inspectors, 16 Head Constables, 27 Police Constables, 1 photographer and one Pharmacist of the so-called subordinate, none the less, vital part of the service on their superannuation.

Aware as my officers and I are of your dictum that Officers should look after their men from the time of enlistment to the time of superannuation, my officers and I have always been anxious to see what we can do for our men especially as we of Madras City Police are fortunate in having police personnel who in efficiency and devotion to duty compare favourably with police personnel that can be found anywhere in the world, even anywhere in the country.

For long, we have seen personnel after superannuation from the force having to go to the City Police Office, having to go to the Pay and Accounts Office, having to go to the Accountant-General's Office and at times to the Chief Office and even to the Secretariat for weeks and months to straighten their papers and collect their pension, their gratuity, their General Provident Fund accumulation and their discharge certificate. As the weeks and months pass by the superannuated personnel visibly appear more and more dejected and downcast. I am sure the thoughts in their minds

were "Is this our reward, is this our recompense for 30 years service in the department". Although every officer and I would also say every member of the Ministerial staff has a soft corner for superannuated personnel, yet, in the mounting pressure of day-to-day work due attention cannot always be paid to the superannuated personnel and at times they would have to wait for hours and even after such waiting not be able to see the officer or ministerial staff even for regularising small matters. Hence, my officers and I felt that if we could hand over the Provisional Pension Payment Order, the Provisional Gratuity, the General Provident Fund accumulation and the Discharge Certificate immediately after superannuation, we would be doing something really useful to the superannuating personnel.

Another problem which non-clearance of pension, gratuity and General Provident Fund accumulations is that the retired person is unable to vacate the Government quarters in which he has been living for lack of funds to purchase a house or even pay as advance rent. This in turn used to bring in lots of requests for continuing for months in the quarters, occasioning difficulties to serving personnel, etc. At times, this results in painful situations of having to order coercive methods for vacating the quarters.

Two months back I gave this task to my Deputy Commissioner (Headquarters) and my Personal Assistant today has the target date. It meant a lot of additional work but they and their staff got into the spirit of the matter and took it up cheerfully and assured me that the Provisional Pension Order and the Provisional Gratuity could be got ready in time. However, when I mentioned the General Provident Fund accumulation, the answer was 'Impossible' as accounts will have to be cleared by the Accountant-General. Here, I must admit that it has become customary for some of us to pass on blame to the Accountant-General's Office or the Pay and Accounts Office. I did not wish to perpetuate this practice and told my Officers that if only our case is placed before the Accountant-General and the Pay and Accounts Officer in a proper way they and their staff would also co-operate with us and this has proved to be correct. I am deeply grateful to the Accountant-General and the Pay and Accounts Officer and their staff for their wholehearted co-operation but for which this impressive parade would not have been possible. I am sorry that both the Accountant-General and the Pay and Accounts Officer are away on tour. However, we are happy that Thiru Edwin, Senior Deputy Accountant-General and Thiru Panduranga Rao, Assistant Pay and Accounts Officer are here to acknowledge our gratitude and to see for themselves the gratitude of the men whose cases they have helped to finalise.

Special Efforts Taken

I must here acknowledge the special efforts put in firstly by the City Police, secondly, the Accountant-General's Office, thirdly, the Pay and Accounts Office and Chief Office in clearing papers in a very very short period. Thanks to the excellent work, thanks to their excellent co-operation, each person who superannuated on 1st July 1973 will receive from you, Sir,

in a few minutes his Provisional Pension Order which has sanctioned him 90 per cent of the pension he is eligible; the individual has nothing else to do than to present it for pension on the first of next month. He will also get 75 per cent of the gratuity due to him. This gratuity is being paid in cash—amounting in all, to Rs. 1,27,118; thirdly, he will get all that he has contributed to the General Provident Fund, with interest thereon, less of course the amounts he had drawn earlier—amounting to Rs. 1,15,183, fourthly, the Discharge Certificate together with the character assessment.

Be Careful about the Cash

As these superannuated personnel will be carrying large sums of cash, it is my duty to advise them to be careful about the cash, both while carrying it home today and while spending it in the next days to come. At my request, the State Bank of India has kindly opened a Savings Bank Deposit Acceptance Counter right here in this Stadium. You would do well to deposit your cash with the State Bank and then draw it after careful thought. Remember there are sharks round the corner who will project before you all kinds of tantalising schemes most of which will have only one object in view, i.e., to deprive you of your hard-earned savings. Therefore, I would once again advise you to bank your cash, and spend it only after thought and deliberation. Any expenditure you wish to incur, you should incur only after careful examination in a cool frame of mind.

You have all put in 30 to 35 years of service in the department. You have stood by us in days of stress and strain. You have set up a fine example of hard work and devotion to duty. Some of you have earned over a hundred rewards and have also maintained clean defaulter sheets.

I acknowledge your good work and I wish you all long life and happiness with your families.

Subsidy for Industrial Units in Backward Taluks—Last date for Registration—Extended.

The Government of India have now extended the last date for registration of applications for subsidy, by "existing industrial units" from 31st May 1973 to 31st December 1973. The "existing industrial units" are those unit which have taken effective steps after 26th August 1971 but before 17th February 1973 in the seventeen taluks notified as eligible area on 17th February 1973.

Entrepreneurs who have taken effective steps after 26th August 1971 but before 17th February 1973 for the establishment of any industrial unit in the following 17 taluks are therefore, requested to apply to the State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT), Madras-2 for registration of their applications for subsidy immediately and in any case before 31st December 1973.

Districts.	Taluks.
1 Dharmapuri ..	1 Dharmapuri 2 Harur 3 Hosur 4 Krishnagiri 5 Uthangarai
2 Madurai ..	6 Dindigul 7 Nilakottai 8 Tirumangalam 9 Usilampatti 10 Vedasandur
3 North Arcot ..	11 Tirupattur 12 Vaniyambadi 13 Vellore 14 Walajapet
4 Ramanathapuram.	15 Aruppukkottai 16 Sattur 17 Srivilliputtur

However, entrepreneurs, who want to set up industries hereafter in the above taluks, have to register their applications with SIPCOT before taking effective steps.

ISSUING RICE ON SUGAR CARDS HAS LED TO POOR MISSING RICE

Family cards have been issued in the whole of Tamil Nadu including Kanyakumari district for supply of sugar. The intention was that these cards should be made use of for distribution of any other essential commodity in short supply, whenever the need arises. The cards have been made use of in this manner for distribution of wheat-products in urban areas and distribution of kerosene in urban and rural areas. However, when rice was sought to be distributed in the non-belt areas of Kanyakumari district, complaints were received from several areas that the cards were not available with the people. This situation has arisen because many from the poor income groups, who did not require sugar, did not take the cards at the time of issue or gave them away with the result that these cards had accumulated with dealers and others who collected the quotas for resale.

In order to ensure that the stocks moved into the district were properly distributed to the consumers, as an interim measure, the Collector authorised issue of identity slips by village officers to enable the people who had not received the cards to draw their supplies. However, it is found that in the district as a whole, the card population covers nearly 13.75 lakhs of people as against the census figure of about 12 lakhs. In such a situation, issue of identity slips would further add to the figure. The obvious inference is that there is considerable duplication of cards or inflation of the number of members.

The number of persons as noted in the cards appears to have been corrected in some cases to get a larger quota. In these circumstances it has become necessary to make a complete verification to ensure that excess quotas are not drawn by dishonest individuals either by correcting the cards to increase the quota or by bogus cards. The Collector was

NEW ENUMERATION RATION IN KANYA- KUMARI DISTRICT TO ENSURE FAIR DISTRIBUTION

asked in March 1973 to take up such verification in Kalkulam taluk in the first instance with priority for the coastal villages; land-owners and lessees having their own sources of supply were also to be excluded from the purview of the distribution and a verification was necessary for this purpose.

In Vilavancode taluk rice was being distributed against cards from an earlier period and there is a 10 per cent excess in the population covered. There have been no large-scale complaints of non-possession of cards. The verification in Kalkulam taluk was ordered because it was felt that as in the other areas the sugar cards may have been given away by the poorer sections and exclusion of land-owners was necessary; the local production is substantial and even exclusion of land-owners will not completely account for local surplus. This work is in progress.

In Nagercoil also when distribution of rice had to be taken up at short notice, the existing cards were made use of subject to further verification. Accordingly, this work has been taken up and staff, who have experience in such verification in Madras City, have been deputed to Kanyakumari district to complete the work quickly. In terms of the present cards, the commitments to the Government for distribution in the district will be nearly 1,500 tonnes per month more than is justified by the population statistics. In the current situation the Government could hardly afford to spare this quantity which in all probability would go into the hands of the unscrupulous traders and smugglers. The co-operation of the public in ensuring proper enumeration and issue of cards will therefore be most welcome.

This work in Nagercoil Town is expected to be completed by the end of this month.

“From the origin of the temples, we understand that they were not only places of public worship but were functioning as organisations to fulfil social needs and were also cultural institutions to protect and to promote sculpture, art, education, medicine, painting, dancing and the like. Based on these salient and sound principles followed in the past, the Hindu Religious and Charitable Endowments Department in Tamil Nadu is of late implementing Social Welfare Schemes through the temples”.

TEMPLES IN THE SERVICE OF MAN

If we understand the origin of the temples in Tamil Nadu it will be clear that they were not only places of public worship but were functioning as organisations to fulfil social needs and were also Cultural Institutions to protect and to promote sculpture, art, education, medicine, painting, dancing and the like. Hence based on this, the H. R. & C. E. Department is implementing the following Social Welfare Schemes through the temples. In order to provide education, the following six colleges are being maintained by the more affluent temples in Tamil Nadu.

1. Arulmigu Palani Andavar Arts College, Palani.

2. Arulmigu Palani Andavar Senthamil Kalloori for Women, Palani.

3. Arulmigu Palani Andavar College of Arts for Women, Palani.

4. Arulmigu Devi Kumari College for Women at Kuzhithurai, Kanyakumari district run by Kanyakumari Devaswom Board.

5. Arulmigu Parasakthi College for Women, Courtallam.

6. Arulmigu Ramanathaswami Devasthanam College, Rameswaram.

The total number of Kalyana Mandapams constructed by the religious institutions in Tamil Nadu up to the end of the year 1967 was only 14. But after 1967 and till the end of December 1972, the number of Kalyana Mandapams started was 169. Out of these, 41 Kalyana Mandapams have been completed fully. Expeditious steps have been taken to complete the remaining Kalyana Mandapams. The grievances of the public who have suffered in the past for want of place for performing marriages have been to a large extent, redressed by this scheme.

The proposal for starting two Women's Colleges one under the auspices of Arulmigu Kandhimathi Ambal Temple in Tirunelveli and the other under the auspices of Arulmigu Subramaniaswami Temple, Tiruchendur, are under the consideration of the Government. Arulmigu Subramaniaswami Temple, Tiruttani has undertaken to donate Rs. 5 lakhs to Arulmigu Subramaniaswami Arts College at Tiruttani, Chingleput district.

Apart from these, Arulmigu Palani Andavar College of Indian Culture under the auspices of Arulmigu Dhandayuthapaniswamy Devasthanam, Palani, Madurai district and Poompuhar Peravai College at Melaiyur near Thiruvengadu, Thanjavur district, are also functioning.

In this connection it is worth recollecting that a Post-Graduate Course in Indian Philosophy and Indian Religion and Culture has been introduced at Poompuhar College in 1972.

High Schools and Elementary Schools

Thirteen High Schools for Boys and Girls are maintained under the auspices of the temples. Out of these, three schools were started during the year 1972-73. It is proposed to start in 1973-74 a High School under the auspices of Pichai Kattalai Estate, Thirukadaiyur, Thanjavur district and another High School in Pallathur, Ramanathapuram district under the auspices of a Specific Endowment.

Nathaswaram Schools

With a view to promote the art of Nathaswaram, two Nathaswaram Schools have been started at the

and children, building to ...
 following places from the funds of the
 following religious institutions and
 the students are trained properly
 by suitable experts in the art :—

1. Arulmigu Dhandayutha-
 paniswami Thirukoil Nathas-
 waram School, Palani.

2. Nathaswaram School at Vali-
 valam, Thanjavur district, main-
 tained by Arulmigu Iruthaya-
 kamalanathaswami Temple.

Twenty students are undergoing
 training in Nathaswaram and 10
 students in Thavil in the school at
 Palani and 15 students are under-
 going training in the school at Vali-
 valam, Thanjavur district.

Schools for the Deaf and the Dumb.

In order to impart training to
 persons born deaf and dumb to
 speak and write, two training schools
 are being maintained efficiently
 under the auspices of Arulmigu
 Ranganathaswamy Temple, Sri-
 rangam (Arulmigu Mariamman
 Temple, Samayapuram) and Arul-
 migu Dhandayuthapaniswami
 Temple, Palani.

Orphanages.

Orphanages are being maintained
 under the auspices of the following
 ten temples with a view to maintain
 persons who have none to take
 care of them and have been forced
 to live begging for a morsel of food
 undergoing untold sufferings:—

1. Arulmigu Subramaniaswamy
 Temple, Tiruttani town and taluk,
 Chingleput district.

2. Arulmigu Navaneetheswarar
 Temple, Sikkil, Nagapattinam
 taluk, Thanjavur district.

3. Arulmigu Vaidhianatha-
 swamy Temple, Vaitheeswarankoil,
 Sirkali taluk, Thanjavur district.

4. Arulmigu Srinivasaperumal
 Temple, Nachiarkoil, Kumba-
 konam taluk.

5. Arulmigu Meenakshi-
 sundareswarar Temple, Madurai.

6. Arulmigu Dhandayutha-
 paniswami Devasthanam, Palani.

The Birth Day Gift



Dr. V. R. Nedunchezhiyan, Minister for Education and Tourism
 distributing slates and books to school children on the
 occasion of his Birth day 11—7—73.

	Number of institutions.	Extent of lands belong- ing to the institutions (wet and dry) ACRES.
1 Number of institutions found not under the control of the department as a result of investigation.	40,247	198,920.53
2 Number of cases out of item (1) above for which preliminary reports were received from Inspectors (out of this 2,162 institutions have been brought under the control of the Hindu Religious and Charitable Endowments Department).	6,000	41,664.08
3 Number of institutions in which temple lands were not in actual possession and enjoyment of the temple but found to be under the enjoyment of private persons.	15,944	26,065.88 cultivable lands + 656.62 urban lands.
4 Number of cases in which action has been taken to recover possession of lands (S.No. 3).	880	2,250.41
5 Number of institutions where posses- sion has since been recovered.	186	719.83

7. Arulmigu Nelliappar Devas-
 thanam, Tirunelveli.

8. Arulmigu Subramaniaswami
 Devasthanam, Tiruchendur.

9. Arulmigu Vazhaithotta-
 thuayyan temple, Ayyana-
 palayam, Palladam taluk, Coim-
 batore district.

10. Arulmigu Thirumalaikumara-
 swamy temple, Panphozhil, Tenkasi
 taluk, Tirunelveli district.

CRECHES.

For pre-school children who have
 lost their parents and for those
 who cannot be cared for by their
 parents who leave them in the early
 morning itself to earn their bread,
 creches are being maintained at
 the following five places. In all
 these places, the children are brought
 up in the Hindu way of life :

1. Arulmigu Vedanarayana-
 perumal Temple, Thirunarayana-
 puram, Musiri taluk, Tiruchirap-
 palli district.

2. Arulmigu Subramania-
 swamy temple, Kumaravayalur,
 Tiruchirappalli district.

3. Arulmigu Ranganatha-
 swamy Devasthanam, Karamadai,
 Avanashi taluk, Coimbatore
 district.

4. Arulmigu Mariamman tem-
 ple, Elampillai, Salem district.

5. Arulmigu Dhandayutha-
 paniswami Devasthanam, Palani,
 Madurai district.

HOME FOR THE OLD.

Last year a scheme was formula-
 ted for starting homes for the old
 from out of the surplus funds of
 the temples. Based on this
 scheme, a home with provision to
 admit 30 persons in it, has
 been started under the auspices of
 Arulmigu Dhandayuthapaniswami
 Devasthanam, Palani and is func-
 tioning from 15th February 1973
 onwards. Further under the aus-
 pices of Arulmigu Meenakshi
 Sundareswarar temple, Madurai
 and Arulmigu Subramaniaswami

temple, Tiruchendur two homes for
 maintaining 20 persons started
 functioning from 15th March
 1973.

HOSPITALS.

Realising the necessity to esta-
 blish hospitals and dispensaries for
 the benefit of the public including
 the worshipping public and the
 pilgrims, 23 Siddha Vaidyasalas
 and one Allopathy Dispensary are
 being maintained under the auspices
 of the temples. Instructions have
 been issued to the trustees and the
 Executive Officers of the temples
 to start more Siddha Vaidyasalas in
 view of their importance.

LIBRARIES.

Libraries are functioning effec-
 tively in 204 temples with a view
 to promote general knowledge
 besides impressing upon the
 readers the tenets of Hindu religion.
 Further suitable instructions have
 been issued to the affluent temples
 to start libraries.

TEMPLE LANDS.

Besides several useful activities
 undertaken under the auspices of
 the temple, action has also been
 taken at the same time to increase
 the revenue of the temples by taking
 possession of their lands and other
 immovable properties under un-
 authorised occupation and bringing
 them into accounts of the temples.
 The following details will clearly
 indicate the steps taken by the
 department in this regard.

The Government have sanctioned
 the employment of special staff
 consisting of a Special Officer in the
 cadre of District Revenue Officer
 and four Special Deputy Collectors
 with the necessary ministerial staff
 to attend the work of gathering
 particulars regarding the lands owned
 by the temples in Tamil Nadu and to
 take suitable action to vest the
 entire lands in the temples them-
 selves. Additional staff was
 sanctioned in 1971 to expedite the
 inspection work to see that all
 immovable properties belonging to
 the religious institutions are in their

actual possession and are registered
 in their names and properly entered
 in the Property Register and that
 those properties which are not in
 the possession of the temples are
 also brought into account and the
 income from the property is properly
 accounted for. Details of the lands,
 buildings, sites, etc., owned by
 each temple, are being gathered
 to see whether they are under proper
 lease, whether there are encroach-
 ments, unauthorised occupation or
 possession, etc.

As a result of preliminary investi-
 gation, the special staff have detec-
 ted the following :—

The special staff have submitted
 reports relating to 33,703.86 acres
 of agricultural lands ; 772.89 acres
 of urban land and 2,218 buildings
 belonging to religious institutions
 which are in receipt of a low
 rental income.

They have also reported on the
 profitable utilisation of 6,694.87
 acres of temple lands which are
 lying waste. Action is being taken
 in this regard by the Departmental
 Officers.

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THE COIMBATORE FARM SETS A MODEL FOR THE WORLD

"A well organised farm. A model for many parts of the world", remarked Dr. A. A. Johnson, an expert of the Ford Foundation, New Delhi, who recently visited the P.S.G. Farm near Coimbatore.

Popularly called the Vedapatti Farm the P.S.G. Estate is situated about eight kilo metres west of Coimbatore town behind the Sugarcane Breeding Institute.

The Farm has an area of about 200 acres growing new crop varieties plantation crops, fruit trees and vegetables. All high yielding varieties of rice, sorghum (jowar) bajra are first tested at the Farm. With the co-operation of the Farm operators the experts of the Agriculture University and the Agriculture officers of the State Agriculture Department use the Farm as a Demonstration Farm.

Not a single scientist, expert, administrator, Minister or Governor has failed to visit this Farm. In fact every specialist of the Ford and Rockefeller Foundations and any foreign visitor who counts make it a point to see this farm. It is no wonder that it has come to stay as a model farm not only for India but for the whole world. The visitors' book containing the appreciations

of a galaxy of visitors testifies the Farm was an attraction to top scientists and experts of more than 24 countries in the world.

Thiru G.R. Govindarajulu, the gentleman farmer, who is the architect of the P.S.G. group of Industries, is managing the Vedapatti Farm. The Farm was developed to its present fine state by the American educated Thiru G.R. Varatharajan who died very recently in his prime of life.

The Farm operators were the first to introduce the Blue dawn rice from America over a small area. Today the rice variety has become one of the popular rice varieties propagated by the Agriculture Department.

The Farm has many firsts to its credit. It was here that chicory was grown for the first time. The farm was the first in the state to have grown maize on a commercial scale. The farm owners were again the first to grow potato varieties in the plains and cocoa. They were the first farm family to grow Anabie-Shahi and other grape varieties. Mulberry plants are the latest new crop introduced in the Farm.

As for cotton, the latest long-staple varieties of Sujata and Suvin have found a place in the crop pattern

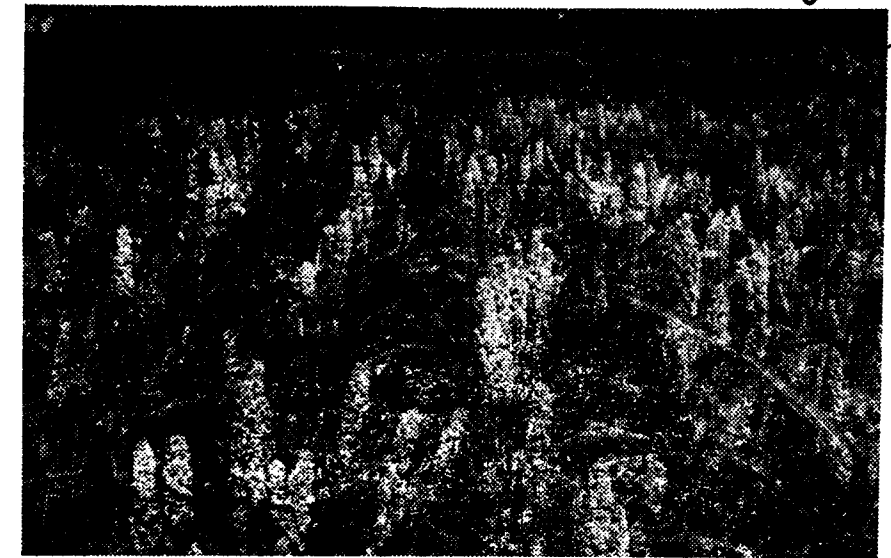
of this model farm. These varieties are of equal quality with imported Egyptian cotton varieties. Another cotton variety M.C.U. 5, which is equal to a Sudan cotton variety, is grown over a large area of the Farm. It is a favourite variety with cotton (textile) mills as it blends with all types of cotton. The farm operators have also succeeded in growing it as a rain-fed crop although it is an irrigated variety.

A unique irrigation system followed.

Above all, P.S.G. Farm has a unique irrigation system with underground pipe lines connected to an irrigation wells grid and an overhead tank system. Called the syphon system, the irrigation method has attracted and won the commendation of experts and scientists, the press and the public.

Several American Farm Leaders and their wives have stayed at the Farm when Sri G. R. Govindarajulu and his brother played host to the farm programme participants. They were all fascinated by the loveliness of the farm and its salubrious climate. They also made the farm a place for study and education.

Thiru Norris E. Dodd, the Director-General of F.A.O. who visited the farm, wrote that the P.S.G. Farm was



A luxuriant crop of C.S.H-2 Jowar ready for harvest at the farm.

"a well planned and laid-out farm in such a high state of cultivation with water, good seed and good management". No wished "every farmer could spend some time in this farm".

A model farm for the world.

The Farm which is a model for farmers can be better understood and appreciated through the words

of Mr. Earle K. Rambo of the U.S. Agriculture Department, who was a former Irrigation Adviser to the Indian Government, "I saw enough evidence of sound judgment and good planning to convince me that the fields were not green by accident. That those green fields were made possible inspite of the dry surrounding country-side, is evidence enough that much could be learned from the operators of this Farm".

Source : S. Sundaram

M.C.U. 5 Cotton bred in Tamil Nadu has brought a cotton revolution in the State.



The Vedappatti Farm near Coimbatore is a well-organised one and a model for many parts of the world. It was here that chicory was grown for the first time. The farm was the first in the State to have grown maize on a commercial scale. Thus the farm has many firsts to its credit.

Read

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Tamil Nadu Government has streamlined the system of distribution of fertilisers through Co-operatives to enable farmers to get the vital agricultural input in time and to eliminate malpractices. The new system has come into force from the commencement of the current agricultural season. According to the new system, the Tamil Nadu Co-operative Marketing Federation is the wholesaler for the entire State except Thanjavur district where the District Marketing Federation is to act as the stockist.

AGRICULTURAL CREDIT SOCIETIES— EXCLUSIVE FERTILISER RETAILERS

About 3,200 Agricultural Co-operative Societies in Tamil Nadu have become the exclusive retailers for pool fertilisers, while in the case of non-pool fertilisers, private trade also will be in the field. In the course of a year, all the 5,000 societies will start retail sales, thereby bringing fertilisers nearer to the farmers in the villages covered by them. A strong directive have been issued to ensure that there is an agricultural credit society functioning as fertiliser retailer in a radius of not more than 3 to 5 miles. It is hoped that the combined sales of these societies will be of the order of Rs. 25 crores this year (1973-74) as against Rs. 9 crores in 1972-73.

In the light of complaints received from farmers about delay in receipt of fertilisers and other irregularities in the distribution of fertilisers, the Tamil Nadu Government has streamlined the system of distribution of fertilisers through co-operatives to enable farmers to get the vital agricultural input in time and to eliminate malpractices. Under the new system, which has come into force from the commencement of the current agricultural season, the entire distribution of pool (imported) fertilisers is entrusted to the Tamil Nadu Co-operative Marketing Federation and the Thanjavur Co-operative Marketing Federation.

A
DEPOT
IN
EVERY
THREE
MILES
RADIUS

The former federation will act as wholesalers for the entire State except Thanjavur District where the district Marketing Federation will act as the stockists.

The supply will be effected by the two organisation direct to village credit societies which will function as retailers. The two federations will also continue to distribute non-pool (indigenous) fertilisers. Private traders and panchayat unions were also engaged in the distribution of pool fertilisers hitherto and this is being eliminated.

Proper Check.

The Government has asked the two federations to keep track of the fertilisers (both pool and non-pool) till they reach the retail point. Officers deputed by District Collectors and the Agricultural Department will check the distribution at the village society level. A Co-operative fertiliser committee will be formed in each district with the Collector as Chairman to regulate the supplies on the one hand and on the other, to ensure timely settlement of accounts by the societies.

The State's requirement of imported fertiliser for 1973-74 is 3.17 lakhs tonnes of nitrogen, 1.03 lakhs tonnes phosphorus and one lakh tonne of potash.

Regional Offices Opened.

Thus, the Tamil Nadu Co-operative Marketing Federation and Thanjavur Co-operative Marketing Federation will handle nearly 60 per cent of the fertilizers made available for the farmers in the State as against 25 per cent last year. This is due to the allotment of the pool fertilizers entirely to the Co-operatives this year. The Tamil Nadu Co-operative Marketing Federation, whose main business is fertilizer distribution, has opened 10 regional offices for this purpose in all the districts except the Nilgiris, Kanyakumari and Thanjavur.

Assessment of Requirements.

The following instructions have been issued in this behalf: The agricultural credit societies, which will be the retailers for both pool and non-pool fertilizers, will assess the total requirements of fertilizers variety-wise for a year and send before the end of April a statement to the Regional Officer of the Federation under copy to the Central Bank and Marketing Society concerned. The statement is to indicate also the quantity required in respect of each variety of fertilizers every month and the total for the whole year. The assessment will generally be based on the actual sales in the previous year with the addition of anticipated increase in the coming year. The Central Bank and the marketing society will send their recommendations to the Regional Officer of the Federation before 15th of May. The Regional Officer will place the statements of requirements of all the retail societies before the District Co-operative Fertiliser Committee (consisting of the District Collector as Chairman, the Chairman and the Executive Officer of the Central Bank, the Regional Joint Registrar, the Deputy Director of Agriculture and the Regional Officer as members) and submit the same to the Federation with the views of the Committee.

Retailers.

While offering its recommendations of the statements of annual requirements of each agricultural credit society functioning as retailer, the Central Bank will specify the maximum limit up to which the



Thiru S. Ramachandran, Minister for Transport, distributing the land assignment deeds to the landless at Cuddalore on 6th July, 1973.

society can be permitted to keep stocks at a time. The limit may be fixed with reference to the seasonality in the area of the society and other factors.

Within Easy Reach.

Steps are being taken to ensure that there is an agricultural credit society functioning as retailers for a radius of not more than 3 to 5 miles. Wherever necessary, additional agricultural credit societies will be got appointed as retailers. All the viable and potentially viable agricultural credit societies should function as retailers. Where a society is dormant or mismanaged, the neighbouring society will be asked to serve the area of the former society till it is revived or its affairs are set right. If warranted, the opening of a depot by the neighbouring society may also be considered.

The marketing societies are not expected to undertake retail sale of fertilisers nor should they physically handle fertiliser in any respect, pool or non-pool. The agricultural credit society in the headquarters of the marketing society will be meeting the fertiliser needs of the farmers as the retailer. If there is no agricultural credit society at the headquarters of the marketing society, the neighbouring agricultural

credit society may be asked to open a depot.

Indents

Apart from the monthly indents, ad hoc indents may also be sent when there is an unforeseen and urgent demand for fertilisers. The marketing society will forward the copy received by it to the Regional Officer of the Federation with its recommendations within three days from the date of receipt, failing which the Regional Officer will act on the copy received direct. The marketing society will maintain a Society-wise Register for entering the details of the indents and its recommendations, before forwarding its copies of the indents to the Regional Officer of the Federation.

Purchase of Fertilisers.

So far as non-pool fertilisers are concerned, the private trade is also in the field. With a view to securing the advantages of large scale purchase and avoiding competition among the co-operatives, it has been decided that only the two Federations should purchase non-pool fertilisers and distribute them through the marketing societies and agricultural credit societies. The question of independent wholesale business by the

marketing societies does not arise even in respect of non-pool fertilisers, as all the retail societies will be distributing only the fertilisers supplied by the Federations. The marketing societies will continue to function as sub-wholesalers under the Federation for the distribution of non-pool fertilisers also.

As regards pool fertilisers, the Federation will, on receipt of allotment orders from the Collector, remit the initial payment, open the letter of credit and lift the stocks for distribution. The marketing societies will function as sub-wholesalers in the case of pool fertilisers as also in the case of non-pool fertilisers. The entire stocks of pool and non-pool fertilisers will thus belong to the Federations and be held by the marketing societies and the agricultural credit societies on consignment basis.

Sales Against Loan

The agricultural credit societies will distribute fertilisers towards the kind portion of the cultivation loans sanctioned by them as well as for cash. The cash sales may be both to members and to non-members. The societies should

endeavour to enroll non-members intending to purchase on payment of cash as 'A' class or 'B' class members. The quantity to be distributed per farmer (member or non-member) will be with reference to the instructions, if any, that may be issued by the District Collector, as far as pool fertilisers are concerned. While the non-pool fertilisers may be completely reserved for sale to the members only against kind portion of the loans or for cash the distribution of pool fertilisers to the members and non-members may be regulated with reference to the instructions of the District Collector.

Role of the Central Banks :

The Central Banks have been requested to ensure that the societies receive and distribute the fertilisers properly, remit the cash sale proceeds at least once a week, send the weekly sales statement promptly to enable to Central Banks to adjust promptly to the account of the Federation the sales made against kind portion of cultivation loans, keep the accounts up-to-date and send the fortnightly stock statement in time.

Supervisors have been appointed by the Federations to inspect once a fortnight the fertiliser accounts of the societies and verify the stocks, the remittance of cash sale proceed and submission of the returns. They will particularly check the sale bills with reference to the quantity sold as against the extent and crops cultivated to ensure that all the sales are genuine.

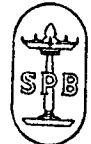
Wherever necessary, the Central Banks may also open additional branches. About 80 per cent of the fertiliser sales represents sales towards kind portion of the cultivation loans issued by the Central Banks. The Central Banks have launched upon a larger credit programme. The allocation of pool fertilisers for sale only by the Co-operatives will help this programme as also enlargement of the membership of societies. The Central Banks have been requested to pay their special attention and ensure that the agricultural credit societies play their role effectively in the revised fertiliser distribution system. In fact, the Central Banks have to play a very important role in the revised system of fertilisers distribution.

the living past

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பிணியின்மை, செல்வம், விளைவு, இன்பம், ஏழ்மை
அனியென்ப நாட்டிற்கு இவ்வைந்து—குறள்.

The essential features of a good State are: (i) the people should be protected from diseases; (ii) there should be wealth from natural sources; (iii) there should be production of agricultural and other wealth; (iv) people should enjoy life from artistic and cultural activities; and (v) defence against enemies. These five essential features are the ornaments of a State according to the Tamil sage, Thiruvalluvar.

In order to ensure all these five essentials to its people, the State should have to undertake different kinds of surveys. Most of the surveys are inter-twined, the chiefest being Land Surveys.

Geodesy, a branch of mathematics dealing with the figure and area of the earth or large portions of the earth, is one of the most important such surveys that are needed for planning for the welfare of the State. Geodesy is not only essential to ensure the defence of the State against outside intrusion but helps in having a graphic picture of our terrain and the manner in which the topography of the terrain affects the weather, etc., conditions.

System of triangle

The basic geo-metric figure from which the geo-detic map of a terrain can be built up is a triangle. It is why when we survey a terrain we also say it has been "triangulated".

The Survey of India covers the terrain with very large triangles whereas the Tamil Nadu State Survey adopts much smaller triangles as the purpose of the latter is to arrive at the extent of each individual holding which is the unit for Revenue Administration and compile a cadastre (Land Register). The triangles in the detailed field surveys undertaken by States are mainly formed by measuring the lengths, breadths and fixing the correct positions of the other required points by taking the offsets on the nearest base of a triangle by using a simple instrument called the cross-staff. The accuracy of the measurement of these small "Cadastral survey triangles" is ensured by

A Brief Note On The Importance Of Nungambakkam Observatory

By
S. GANESAN,
Jt. Director of
Survey and Land Records.

Amongst the monuments and those observed by the State Surveyors triangulating the bigger blocks like the Main Circuits (two or three numbers in a Taluk) and the Village Circuits with the help of the theodolite, which consists of circular discs, both horizontal and vertical, on which the 360° of a circle are divided into degrees, minutes and seconds and are provided with verniers to have the required minimum readings. There is a telescope hinged to the discs which can rotate horizontally a full circle, and vertically for about half the circle. The State Survey Village Circuits are compared to the Survey of India data to ensure accuracy.

It was the Britishers who first conceived the idea of triangulating the terrain adopting trigonometry for calculations and they attempted their first triangulation in Madras State and it was in the City of Madras that the first base line was measured on 10th April 1802. The Standard Meridian of Madras was taken as the basis for the national survey mapping.

Madras - Cradle of the Survey

Thus, Madras has been the Cradle of the Survey of India which, in turn, was the basis of the trigonometrical surveys of the Britishers who were the pioneers in trigonometrical survey.

Why has this mantle fallen on the neck of Madras?

In his learned article "Astronomical Survey Key to all Surveys", in Land Surveys, Tamil Nadu, published a Souvenir on the occasion of the opening of Madras Regional Centre of the Institution of Surveyors (India) in 1969, Thiru S. Singarajan, M.A., M.Litt., Director of Tamil Nadu Archives, observes:

"The geographical position of Madras observatory is such as to render it a most important link as regards other observatories in opposite hemispheres of the globe. It is precisely midway in latitude between St. Petersburg (Leningrad) and the Cape of Good Hope, the extreme limits on either side of the equator. It is also nearly a quarter of the earth's

circumference eastward of Greenwich while the National observatory at Washington is about the same distance to the west of the Royal Observatory. Hence many of the important occasional phenomena invisible elsewhere may be recorded at Madras, when otherwise they must be altogether lost. Further, its situation within the tropics renders it especially adapted for observations of planets and comets in either hemisphere, whether with meridian or equatorial telescopes. The work of the observatory has not been limited exclusively to scientific objects, but it has, through its connection with the Great Trigonometrical survey and by its notification of the local time by time ball or gun firing, proved of direct practical benefit while it has indirectly afforded important assistance in the prosecution of the hydrographic survey of the coasts of the Indian Peninsula. It has also been found greatly useful in carrying out the Wind Power Survey for growing crops by harnessing Wind Power for irrigational purposes".

Thus, the Nungambakkam Observatory is internationally important due to its ideal geographical position with several historic survey monuments. Theodolite was first set within the campus of this observatory to commence the Great Trigonometrical Survey (G.T.S.) in India. The first base line was measured here and it forms the backbone for the General Mapping of the World (Atlas-Making).

It is indeed with great pleasure that we, therefore, expect the arrival of Col. K. L. Khosla and Col. N.K. Sen, Geodetic Survey Experts in the Survey of India on the 23rd of this month in Madras and we look forward to their paying a visit to the observatory at Nungambakkam. They will, of course, be delighted to answer our queries regarding this great and practically important science of Geodesy.

It may not be out of place to mention here that the Initial Cadastral Survey in India was initiated in 1002 A.D. by Raja Raja the Great, the founder and Emperor of the Chola, Dynasty in Thanjavur of Tamil Nadu State

and that Survey is still called the Celebrated Survey of 1002 A.D. as is seen from the epigraphical evidence available at the Big Temple in Thanjavur town. The accuracy of this Raja's survey is borne out by the fact that the land as small in extent as 1/52428800000 of a veli was measured and assessed to land revenue.

The Co-operative Autorickshaw in Coimbatore.

None of the 950 autorickshaws in Coimbatore City go without grumbling if the passenger paid the metered fare rate. But the 24 co-operative sector autorickshaws smilingly accept the fare. In automobile passenger transport also the co-operative sector in Coimbatore made a mark as it has in agricultural and consumer commodities.

The Autorickshaw Co-operative Society in Coimbatore was formed in the second week of January 1972, with Thiru Manickavasagam as its President. About 50 members joined and paid each a share of Rs. 10. The finance for the purchase of 24 autorickshaws to the members was got from a nationalised Bank at the rate of Rs. 11,750 per autorickshaw. The Chief Minister of Tamil Nadu gave away to the 24 drivers as May Day gift. Now it has 150 members in its fold.

In the course of their earnings, each driver paid Rs. 8-95 per day towards the repayment of Rs. 11,750 spreading for four years. Almost all regularly repaid their daily instalments.

These 24 co-operative autorickshaws became the hope for the travelling public to go on a metered fare without any unexpected quarrel. Others are also slowly falling into this mode of operation.

Source : F.P.O., Coimbatore.

Free Medical Aid To Dissuade Drinking Habit.

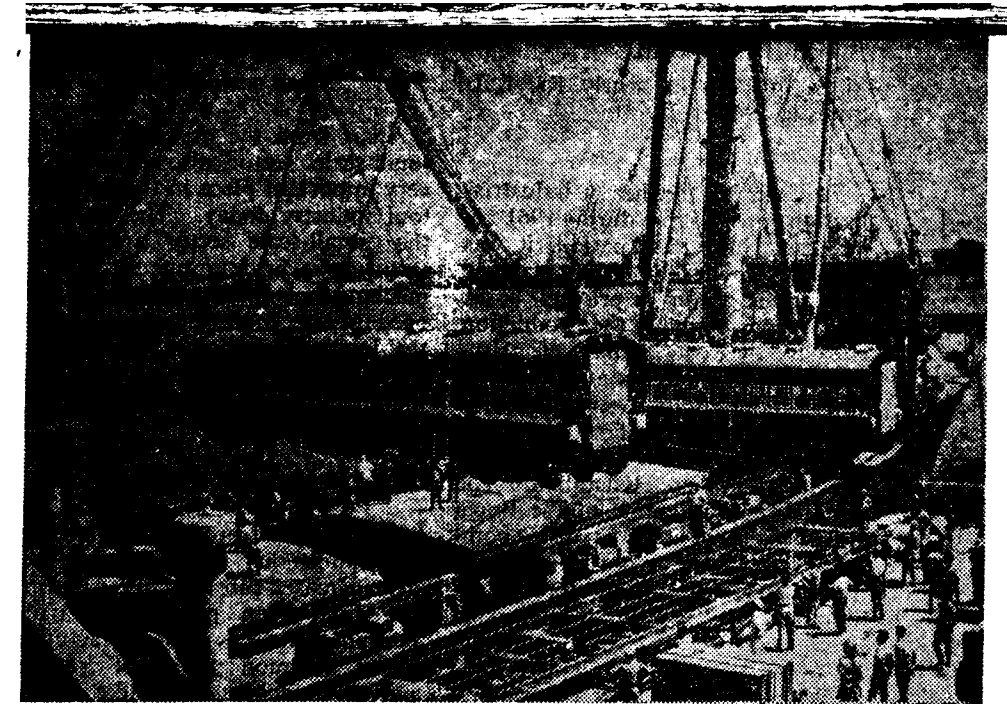
Effective enforcement of extending free medical facilities to all poor and needy citizens of India being carried out by the Government. Voluntary efforts also join hands with this task to cover the vast area. The prohibition council of Coimbatore Gandhi Peace Foundation Centre is one such to provide free medical aid to the poor harijans and muslims of Kempatty colony.

The prohibition council under the leadership of Dr. P. R. Subbaiyan, with the help of two other doctors gave free medical aid to 7,500 poor people of the slum area in the 30th and 6th wards. With the preparation made by the Secretary of Gandhi Peace Foundation Centre, Thiru C. B. Sadagopal, the doctors visit the municipal colony and the slum thrice a week. They attend to the patients and supply free medicines in addition to the free consultation. Though initially few harijans benefitted in it, slowly muslims, Christians and others visited and accepted the benefit.

The idea of extending such a voluntary help struck to the President in one of their meetings to combat the drinking habit. As an incentive to those poor who abstain from drinking, this free medical aid was introduced. Later the council also included the alcohol addicts so as to enlighten them on the evils of drinking. Because of this, 50 persons voluntarily confessed in the various meetings and promised to give up the drinking habit. So far Rs. 400 worth of medicine were given to 7,500 people. So much encouraged by the result, the prohibition council has extended its scheme to two more slums in Coimbatore.

F.P.O., Coimbatore.

MACHINE TOOL INDUSTRY IN INDIA



Loading of Passenger Cars at the Madras Harbour for export to Taiwan Railways.

The Machine Tool Industry in India has achieved spectacular progress, both horizontally as well as vertically over the past twenty years. Not only the production has gone up, the range of products too has widened considerably. The industry, which was confined to only a few places twenty years ago, has now spread to many centres in the country.

The value of production of machine tools spurted from less than Rs. 1 crore in 1955 to over Rs. 50 crores in 1972.

The Machine Tool Industry provides the necessary tools for the rapid development of engineering and machine building industries. The importance of the industry in the industrial development programme of the country is recognised by the Government and high priority has been accorded to this industry in the various five year plans.

HISTORICAL BACKGROUND

History of manufacture of machine tools in India can be traced back to the earlier years of the twentieth century when one or two small manufacturers of common engineering items like agricultural implements felt the necessity of manufacturing such cone pulley lathes and drilling machines pri-

marily for their own use. During the first world war, a number of small workshops undertook the production of machine tools suitable for making shells and their manufacture continued throughout the war. It was only in 1935 that an organised manufacture of machine tools like cone pulley lathes was undertaken on commercial basis. Thereafter, manufacture of machine tools received considerable impetus specially during second world war when supply of foreign machines was stopped. During the six years of war, nearly 20,000 machine tools valued at Rs. 6 crores were manufactured by 215 manufacturers.

DEVELOPMENT OF MACHINE TOOL INDUSTRY

Planned progress of development for the industry started during the first plan period, i.e., 1951-56. The machine tool industry being capital intensive and the gestation period being long, Government felt the necessity to undertake the manufacture of machine tools in the public sector also. To cater to the developing demand for machine tools comparable in design and accuracy to those available from other industrialised countries, Government decided to supplement the established during this period two State-owned machine tool factories, one at Ambarnath and the other

at Bangalore. Ambarnath factory, known as Machine Tools Prototype Factory, was essentially meant to manufacture special types of machine tools to meet the requirements of defence. The Hindustan Machine Tools, Bangalore, popularly known as H.M.T., was planned for a capacity of 1,200 general purpose machine tools per year and went into production at the end of 1954. At the end of 1956, the level of production stood at Rs. 1.20 crores.

The Second Plan period, i.e., 1956-61, being oriented towards industrial development, gave a special impetus to the machine tool industry. In 1956, a Machine Tool Committee was appointed to recommend the programme of development of machine tool industry. A programme of manufacture was also indicated to the major units then in production. In the context of the plan framework, several units in the private sector entered into foreign collaboration for the production of various categories of machine tools and this was a development with far-reaching consequences to the country. During this period, Government took over Praga Tool Corporation at Hyderabad so that the facilities available in that factory for the manufacture of machine tools could be expanded substantially to meet the increased requirements. During the Second Plan, production rose from Rs. 1.20

crores in 1956 to nearly Rs. 6.70 crores in 1960.

To cater to the heavy industrialisation programme during 1961-66, i.e., the Third Plan period, it was decided to develop the machine tool industry on a priority basis. Apart from doubling the production capacity of existing unit of Hindustan Machine Tools at Bangalore, three more units each with a production capacity of 1,000 machine tools a year, were set up at Pinjore, Kalamassery and Hyderabad. The expansion programme of the Praga Tools Corporation was also completed and new types of machine tools and accessories were introduced.

With a view to meet the requirements of heavier types of machine tools, steps were taken to set up a Heavy Machine Tool Plant along with the Heavy Machine Building Plant at Ranchi. This factory has already gone into production. Necessary encouragement was also forthcoming from the Government to the private sector to take up the challenge. This brought about a rapid growth of the industry in private sector also. Almost all the existing units expanded and many new units were set up. At the end of the Third Plan period, i.e., in 1966, the industry achieved a production level of Rs. 28.5 crores.

Since 1966, the industry has been going through an intense phase of diversification. To cover the gaps in product range, almost all the major units have already taken up the manufacture of new products. Government also took steps in this connection and a public sector unit, namely, Machine Tool Corporation, was set up at Ajmer, primarily to manufacture different types of grinding machines with assistance from Czechoslovakia. This unit has already gone into production.

The present installed capacity in the machine tool industry is nearly Rs. 70 crores a year. The production target of Rs. 65 crores is likely to be achieved by 1973-74 and the installed capacity would then go up to Rs. 80 crores.

Small-scale Sector

Apart from the organised sector, small-scale sector also occupies a very important place in the machine tool industry today. The units in the small-scale sector are manufacturing a wide range of simple machine tools thereby meeting a vital need of the country particularly in the low price range. Today more than 1,000 small-scale units are manufacturing machine tools.

Product Range

The range of products covered by the indigenous manufacturers has also increased substantially. During the First Plan period, the main concentration was on manufacturing more common types of general purpose machine tools like lathes, shaping machines, drilling machines and hacksaws. The indigenous industry today is in a position to supply even very high capacity presses and sheet metal working machinery of almost any kind, size and capacity. The industry can also produce highly sophisticated machines like thread rolling machines, internal grinders, centreless grinders, crankshaft grinders, vertical spindle grinders, tapping machines and hydraulic equipment.

The industry is today capable of offering turn-key projects for the manufacture of general purpose machine tools like lathes, drilling machines, milling machines and shaping machines. It can cover market survey, project report, erection of machinery, supply of major part of the capital equipment, product design, training of personnel and establishment of production. In the field of more sophisticated machines, licence has been granted for a mini-chucker to a famous British manufacturing group.

Research and Development

Machine tool units, both in public and private sectors, have regular research and development activity. Major inplant research and developmental activity is done by Hindustan Machine Tools. Starting with the turret lathe seven years ago, they have developed the designs of quite a few machines like heavy duty turret milling machine, models of general purpose milling machines,

a small cylindrical grinder and a mini-chucker. In addition, they have also developed a series of lathes and radial drills for the export market.

The Central Machine Tool Institute, Bangalore, is also engaged in basic research and development of new designs. The activities of the Institute include: Design development of machine tools, standardisation and rationalisation, machine tools testing and training of Design and Development Engineers.

The National Committee on Science and Technology is also engaged in Research and Development in the machine tool industry.

Export

India, as a comparatively new comer in the field of machine tools, has to face an uphill task in the highly competitive international market for machine tools but there are very favourable factors such as availability of raw material and low-cost labour which should make India one of the leading nations exporting machine tools.

The export of machine tools which was barely Rs. 15 lakhs a decade ago, stood at nearly Rs. 5 crores last year. Australia and New Zealand have emerged as major buyers of Indian machine tools. Recently in some of the trade agreements concluded with European countries, machine tools have been included.

Future Trends

The machine tool industry is in an intense phase of diversification and will be going for the manufacture of more sophisticated and special purpose machines. With the rapid development of electronic industry machine tool industry will be adopting more and more electronic controls on machine tools. Beginning in this direction has already been made. Digital Readouts have been developed which can be fitted to any machine. Provision of numerical control systems of controls in machine tools will certainly help in getting consistent and accurate accuracy, higher machine fixtures.

Soviet-Indian Collaboration in Ferrous Metallurgy

The author of this article is Oleg Grigoriev, Gipromez executive (Gipromez is the leading Soviet institute for steel plant designing), who took part in designing the Bhilai and Bokaro works and many times came to India as an adviser. For a long time Grigoriev worked in the Central Engineering and Design Bureau in Ranchi where the bulk of Indian steel designers are engaged.

Not long before his tragic death, which deeply grieved all of India's friends in the Soviet Union, Minister of Steel and Mines, Mohan Kumaramangalam, said in an interview that by the end of the 1974-1979 Five-Year Plan the manufacturing capacities of all Indian steel mills would reach 18,500,000 tons of steel a year. The projects of Soviet-Indian co-operation—Bhilai and Bokaro—would account for nearly 10,000,000 tons, he emphasised.

Fully Appreciated.

As a specialist in ferrous metallurgy I fully appreciate the difficulty of reaching this target. At the same time, knowing the iron and steel production growth rates in the country, I am sure that this task will be carried out. In 1947 India made only 1,000,000 tons of steel, whereas in 1971 its production topped 7 mln. tons. My confidence that India will successfully accomplish her tasks is strengthened by the fact that the country already has the necessary industrial base. Thus, for example, the Ranchi Heavy Machine-Building Plant put up with Soviet participation along with the related foundry and mechanical works erected with Czechoslovak assistance, is the biggest engineering complex in Asia.

India also has her own designing base. Working in the Central Engineering and Design Bureau in Ranchi, I could see for myself the high skills of its personnel capable of solving complex engineering problems.

To day the Ranchi office is the main design organisation in its field. It decides, on a nation-wide scale, questions related to the construction of new and the expansion of old steel plants and prognosticates the development of ferrous metallurgy in India.

Establishment of such an office came as a natural result of Soviet-Indian collaboration. In his speech at the December 16, 1957 meeting at the Bhilai works, Jawaharlal Nehru said that India had invited Soviet specialists to learn from them. After the completion of the construction period, he added, if we wanted to build another plant, we would not need the same degree of assistance from the outside.

Successful Achievement.

The aim of Soviet co-operation with India is to help the country in its industrial advance. And this aim is being successfully achieved. In the summer of 1971, the sixth blast furnace went into operation at the Bhilai works. Significantly, for the first time in the history of Indian ferrous metallurgy the designing of a blast furnace was done by Indian specialists. Nehru's prediction came true. The Soviet experts, who used to carry out the bulk of the work, this time played the modest role of advisers.

Currently, the Ranchi office is doing extensive work to expand the enterprises in Bhilai, Bokaro, Rourkela and Durgapur. The Bhilai works, for instance, is operating at a stable level of annual output of more than 2,000,000 tons of steel. Last year it was decided to expand its production to 4,000,000 tons, but now Indian and Soviet experts have arrived at the conclusion that its capacity should be brought to something like 7,000,000 tons. As regards Bokaro, a decision has been taken to bring the capacity of this biggest plant in Asia to 10,000,000 tons.

These are bold decisions. Bold also because they will be increasingly implemented indigenously. The Ranchi office has already begun detailed designing for the second stage of the Bokaro plant with necessary technical aid from Soviet organisations. The same provision has been made for the expansion of the Bhilai plant.

With the change in conditions, there has come a change in relations between the Ranchi Design Office and Gipromez. These design organisations have long established close contacts. But if previously Gipromez did the greater part of the work, now it is being done by the Ranchi office. During the construction of the first stage of the Bokaro plant the Indian side did one-fourth of the designing work, whereas at the second stage the Indian designers are doing the whole job with Soviet specialists providing consultations when necessary. A contributing factor here is that the Soviet side handed over to the Indian side standard and methodological materials on the organisation and technique of designing ferrous metallurgy enterprises. These materials are widely used by the Ranchi office.

Bridging Gap.

In some respects, Soviet designers still have greater experience than their Indian colleagues, and Gipromez consultants working in the Ranchi office greatly help to bridge this gap. Besides, Indian specialists take regular training in the Soviet Union. They familiarise themselves with the newest practices, doing fruitful independent work. A group of probationers has worked out an original design of a converter shop for the second stage of the Bokaro plant, with provision made for the installation of highly efficient 300-ton converters.

PERS- PECTIVE PLAN FOR THE DEVELOP- MENT OF FISHERIES IN TAMIL NADU

Fish production in Tamil Nadu, which stood at 119,900 tonnes in 1950, has increased to 278,500 tonnes in 1970. In spite of this phenomenal growth in fish production, the State has to go a long way to reach the point of full exploitation of all the available resources in the line which is estimated at over 9 lakh tonnes.

Tamil Nadu has vast resources of both marine and inland fisheries, because she has a long coast line of 1,000 Kms. and a large extent of inland water-spreads consisting of river systems, reservoirs, tanks and large irrigation wells. The average annual rainfall in normal years is 400 mm. Only the inshore belt of the extensive coast line is exploited at present by indigenous crafts and small mechanised fishing boats. The potential catch from the inshore and offshore of Tamil Nadu base is estimated at over 9 lakh tonnes, of these less than 2 lakh tonnes are exploited now, mostly from the inshore region.

Fish production in Tamil Nadu, which stood at 119,900 tonnes in the year 1950, reached 150,900 tonnes by 1960 and further rose to 278,500 tonnes by 1970. The production has increased at 2.6 per cent per annum over the period 1950 to 1960 and at 8.5 per cent per annum over the period 1960 to 1970. The above production is made up of marine and inland fish catches. The marine catch which was 85,900 tonnes in 1950 increased to 107,800 tonnes in 1960 and to 158,500 tonnes in 1970, representing an average annual rate of growth of 2.5 per cent and 4.7 per cent respectively. The inland catch was 34,000 tonnes in 1950, 43,100 tonnes in 1960 and 120,000 tonnes in 1970. This gives an average annual rate of growth of 2.7 per cent and 17.8 per cent respectively.

Marine Fisheries.

On the marine side, the rate of growth has not been much being 2.5 per cent over the first decade and 4.7 per cent over the second decade. The growth can be regarded as more or less steady. This is the result of the introduction of mechanised fishing boats and the use of nets made of fishing grounds for prawns and lobsters

and silver bellies as a result of survey conducted by the Inshore Fisheries Survey Stations which has contributed to increased catches. The use of trawl nets and bottom-set gill nets has become popular from the demonstrations of the Inshore Fisheries Survey Stations and the training imparted in the training centres for the fishermen. There has been an improvement in the handling, preservation and transport of fish for internal marketing and processing for export. In the second half of the decade 1960-70, Tamil Nadu has entered into the export trade for frozen shrimps, lobsters and frog legs. There is also a conscious effort to revive the dried fish export trade with Ceylon.

Inland Fisheries.

The rate of growth in fish production in inland fisheries is very significant during the decade 1960-70. This is primarily the result of the production of fish seed by the method of induced breeding of carps by pituitary hormone injections (Hypophysation) and intensive and extensive stocking of inland water areas. The development of reservoir fisheries adopting a clear management policy has contributed to sustained yields of fish from the reservoirs. The connected river systems have also been benefitted by the improvement in the fishery of the perennial reservoirs.

The State Domestic Product from the Fisheries Sector at 1960-61 prices has been estimated at Rs. 20.35 crores for 1970-71. The average growth rate in fish production over the Perspective Plan period worked out as follows :

	Per cent.
1971-1974 ..	26.5
1974-1979 ..	9.2
1979-1984 ..	14.0

The estimated income from the Fisheries Sector towards the end

FOOD FROM THE SEA

The seas cover approximately 360 million kilometres of the global surface but by and large the exploitation of the marine living resources is still restricted to the vicinity of coasts in the so-called continental shelf areas which are only about 7 per cent of the total ocean surface. It is estimated that nearly 200 million metric tonnes of fish could be harvested from the world oceans, out of which only 62.4 million metric tonnes are caught now.

The use of mechanised fishing units has substantially enhanced the area of operation and sophisticated technology has increased the catching efficiency. However, the deep sea and the open ocean are biologically less productive than the shallow areas except where there is constant replenishment of nutrient salts. To a large extent economical and technological factors as well as the natural abundance of resources form the basis for the development pattern.

To-day perhaps the greatest importance of sea to man lies because its biological life can provide to a great extent the protein needs of the increasing human population. There is hardly any marine living resource that cannot be utilised for human consumption directly or indirectly and in some form or the other.

HIGHER YIELD POSSIBLE

Yet we make use of only a relatively small number out of the 25,000 or more of the existing species of fish. Those that are captured consistently for food are only about 200 species. Among the many crustaceans and molluscs, which include shrimps, crabs, lobsters, oysters, mussels, squids, cuttle-fish and clams, the proportion that we fish is perhaps even less.

It is estimated that more than 10 million metric tonnes of fish could be caught from the Indian Ocean. Our shelf area alone can yield nearly 2.5 million metric tonnes as against the 1.15 million metric tonnes caught now. Such targets of attainment are well within achievable limits and the technical know-how available.

The fact that India's estimated marine fish landings have doubled during the last two decades or so

indicates the development that has taken place in recent times. Yet our needs are much more. It should be realised that despite an apparently impressive increase in our catch during the past two decades, our exploitation is still largely confined within a distance of about 25 km. from the shore.

UNPREDICTABLE FLUCTUATIONS

When one talks of food from the sea, the natural priority is for fish, then the prawns or the shrimps followed by a few other less important items. The items exploited within the narrow coastal belt could be broadly classified as the pelagic complex or surface community and the demersal or the bottom stock.

There is no doubt considerable variation in the proportion of the pelagic and demersal components in the fisheries from coast to coast and from zone to zone. Nevertheless, in the Indian marine fisheries as

by
DR. R. RAGHU PRASAD.

a whole, the quantitative predominance of the pelagic varieties is evident. This is primarily due to the two groups, viz., the sardines and the mackerel. Their abundance or otherwise usually determines the success or failure of the total marine landings for any year. Both these are dominant components mostly of the south-west coast.

The well-known oil sardine which is almost restricted to Kerala-Konkan coast provides sustenance to the entire coastal population of that region. But the capricious nature of the fishery resulting in near-total failure in certain years has also brought unexpected misery to the fishermen. The magnitude of fluctuations in annual landings would be obvious from the fact that the catch varied from a mere 7,000 to over 3 lakh metric tonnes during the last 20 years.

Compared to the sardines, the mackerel fishery shows less intense annual fluctuations. Its annual catch had varied from 16,000 to over 1,80,000 metric tonnes. Their



When one talks of food from the sea, the natural priority is for fish. To-day perhaps the greatest importance of sea to man lies in the fact that its biological life can provide to a great extent the protein needs of the increasing human population. Further there is vast scope for increasing fish output in India.

distribution' is also more widespread and they form a fishery both in the west as well as in selected areas on the east coast. The fish on an average constitutes 10 per cent of the total marine fish production and is a highly esteemed food fish.

Recent investigations have revealed the abundant occurrence of mackerel and less frequently sardines beyond the traditional fishing grounds. Similarly large shoals of anchovies also were recorded in these regions. These could be readily caught with suitable techniques.

As an item of food and from the point of view of commercial significance, the prawns occupy a very notable place in the present days' marine economics, with an estimated annual catch varying between 62,000 and 1,58,000 metric tonnes. The penaeid prawns have emerged as the largest single export item in our marine products bringing an annual foreign exchange of nearly forty-two crores of rupees. Twenty years ago, prawns had hardly figured in our total marine fish landings. Along with prawns, lobsters also constitute an important marine food resource.

The Bombay duck, a fish which derives its popular name from its region of importance combined with its resemblance to the water bird, has the same regional status in the Maharashtra-Gujarat coast as the oil sardine has in Kerala-Mysore region. Another notable feature is that most of this fish is available for local consumption either in the fresh or dried form.

Among the major food fishes of the seas mention should be made of the tunas and billfishes. At present the quantity that we are able to exploit is only a fraction of what is actually available in our seas. I specially underline we because it is now well-known that other nations are able to make a far better utilisation of this rich resource from the Indian Ocean than what we could because of our lack of adequate facilities. Nearly 1,75,000 metric tonnes of these varieties are caught from the Indian Ocean of which we catch only 5,000 tonnes.

Thus these tunas, billfishes and sword fishes together constitute one of the best potential resources and offer immense scope for further intensive exploitation by us especially since the waters around the islands in the Arabian Sea and the Bay of

Bengal are known to be rich in these varieties.

Apart from the major category, there are many other less important items that are now being caught and utilised, each of which may account to anything between 10 and 35 metric tonnes per year. We can ill afford to ignore the significant contributions made by nearly a dozen groups of fishes such as ribbon fishes, soles, pomfrets, hilsa and threadfins. Each of these by itself and in a collective scale helps considerably in maintaining the economy. It also provides cheap nutritious dietetic requirements for the economically weaker section of our population.

Hitherto I have been dealing with the more conventional food items from the sea. But what we have been deriving has become quite inadequate to meet our increasing demands. This situation has given us an opportunity to search all over the accessible regions of the seas for other varieties and for better utilisation of all resources. Thus, along with intensification of fishing operations further exploration of the seas as well as diversification of fishing activities which will tap latent resources and at the same time relieve pressure from some of the over exploited stocks, are currently going on. Exploratory fishing has brought to light the existence of commercially exploitable stocks of breams, perches, butter-fish lizard-fishes, file fishes, a number of deep water prawns and lobsters. All these together with a variety of items such as crabs, squids and cuttlefishes offer considerable scope for more intensive exploitation.

SEAWEEDS AS FOOD

In this context a special mention may be made of seaweeds as food. Several species of these are used as food in Japan and attempts to popularise this in our country are likely to be advantageous. Among the varied food items mention must also be made of the possible use of marine plankton as human food. Man in his search for newer resources for his sustenance has even begun to experiment on this. In this process it is only to be hoped that the poor small fish in the sea will not be deprived of their natural food.

Having dealt with the various food items constituting the wild stock which are only to be exploited judiciously to obtain a sustained yield, I will now pass

on to the question of farming the sea. To-day there is an increasing demand for high quality yet cheap protein food, and marine fishing is becoming more and more capital intensive.

It is now well recognised that it would be difficult to meet the increased need from the wild stock alone. Consequently one of the recent developments is the interest shown in culturing marine food organisms. Besides several species of fish, a number of shellfish, mussels clams, oysters and algae lend themselves to marine aquaculture or mariculture as the technique is now popularly used.

The methods employed vary considerably according to the species, their requirements and the area where they are to be practised. The successful shrimp culture operators in Japan or the mollusc culture of Spain and the Mediterranean and the eel culture of France and the Adriatic are all examples which deserve emulation and practice in our country.

Yields as high as 300 metric tonnes per hectare of mussels as against 4 to 5 tonnes from natural beds are considered possible. Limited success has already been achieved in some of our experiments in this direction. It is hoped that this work will gain a foothold in future so that we may obtain a variety of marine delicacies at our will.

The seas and oceans, which cover over 70 per cent of the earth's surface, offer one of man's great hopes for future food supplies. However, with the growing use of the seas for a variety of purposes and as populations and industries move to the coasts the menace of pollution of the marine environment comes into sharp focus. Pollution presents potential harm to living marine resources and dangerous materials can be transmitted to man through the marine food chain.

We should therefore remember that increase in catch alone is not adequate as the acceptability of the catch would depend on a healthy marine environment. Higher production is possible through intensive exploitation of traditional fisheries and mariculture. The future outlook in the production of food from the sea is bright, thanks to the development of necessary infrastructure and application of new scientific and technological tools. ●

(Based on A.I.R. Talk.)

RECLAMATION OF WATER FROM WASTES FOR IRRIGATION USE

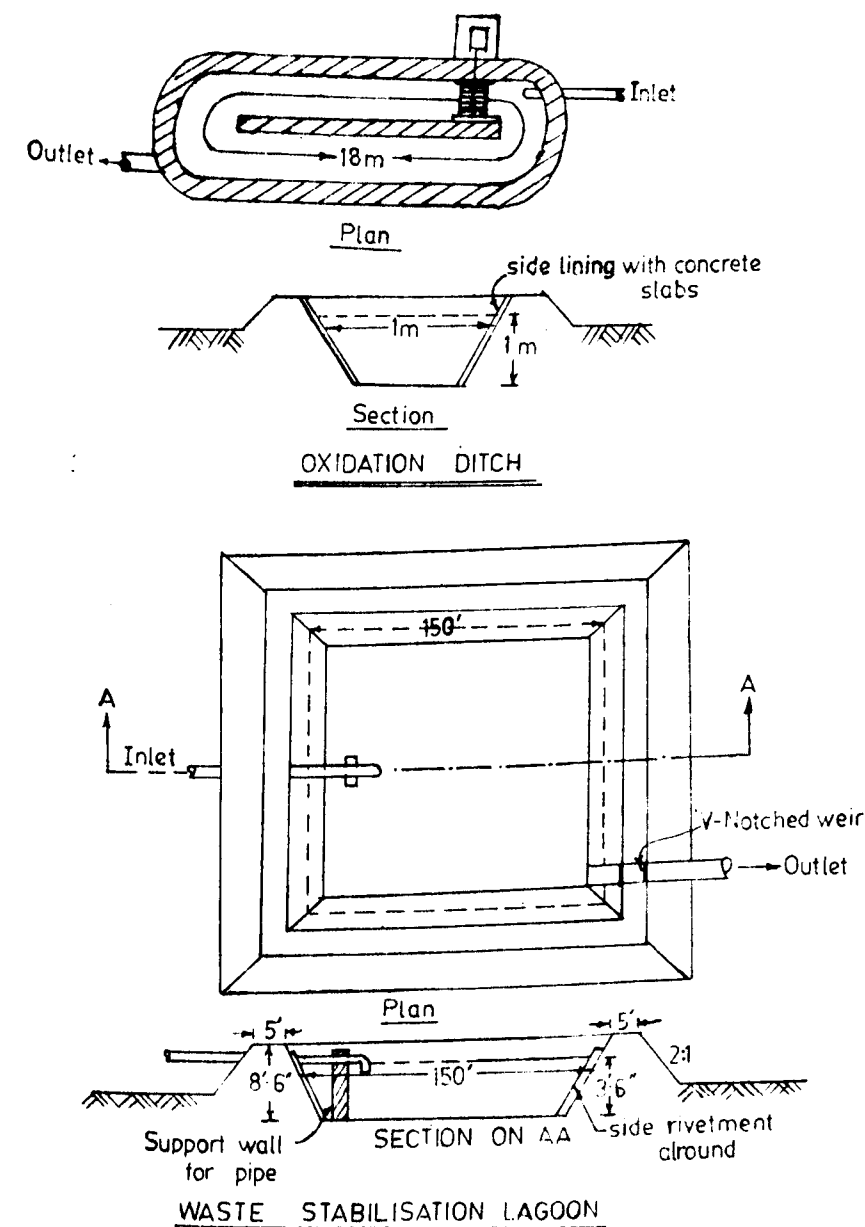


Fig.1

In Tamil Nadu, 95 per cent of the surface water and more than 60 per cent of the ground water have been harnessed to irrigate 3.2 m. hectare of land and for industrial and municipal uses. The irrigated area is only about 43 per cent of the total sown area. The demand for more water has arisen from the ever increasing population for their food and other needs. As local sources of water have been almost fully developed, it has become necessary to meet the ever increasing demand with imported water from the neighbouring States. But this seems to be very bleak to this State and hence the use of reclaimed water from wastes should be considered as a means of supplementing the existing water-supply.

The water used for irrigation is mostly used by the plants as consumptive use and even the unutilised water is reclaimed as underground water. But only 10 per cent of the water taken by the industries are consumed and the balance are left as waste. Similarly

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appreciable percentage of water is drained from the houses. It is estimated that about 80 per cent of the total domestic and industrial water supply are going as waste water. If this amount of waste water is reclaimed, it is possible to irrigate thousands of acres in Tamil Nadu.

The total population of Tamil Nadu is 42 million. The population is scattered in towns, villages and hamlets. Hence it is difficult to collect all the waste water for reclamation and also there may not be sufficient waste to take up reclamation work. The population living in the municipalities and major panchayats may be 10 million and the average consumption can be taken as 20 gallon/day/person. This works out to about 200 mgd. of which about 80 per cent or 160 mgd. can be reclaimed for utilisation. It was estimated that about 40 mgd. was flowing as

waste water in Madras City in 1972 and is expected to reach about 100 mgd. in 1976. If one million gallon water is available, it is sufficient to irrigate one acre of paddy or two acres of other crops. Hence it is possible to irrigate about $40 \times 360 = 15,400$ acres of paddy or 30,000 acres of other crops from the waste water of Madras City alone if the same is properly reclaimed and used. The waste water available for the entire State, if reclaimed, can be used to irrigate more than one lakh acres of land.

The quality of water used for irrigation is determined by the type of substances which are dissolved in it. The characteristics of water that determine its quality are (1) total concentration of dissolved constituents, (2) sodium absorption ratio, (3) concentration of bicarbonate and (4) concentration of brown and other toxic substances.

The total concentration is usually measured in terms of electrical conductivity or total milli equivalents per litre of cation and this can be up to 5 millimhos/cm. The irrigation water should not have S.A.R. value much above 8 to 10.

$$\text{Na.} \\ \text{SAR} = \frac{\sqrt{\text{ca} \times \text{Mg.}}}{2}$$

Bicarbonate in water can precipitate as normal calcium carbonate. When the irrigation water is concentrated in the soil the calcium is precipitated, but the sodium remains in solution. This results in an increase in the S.A.R. and related sodium hazard. As little as 1 ppm. boron in irrigation water is almost the upper limit for use on sensitive plants while 4 ppm. of boron is about the maximum for even the more tolerant plants.

The raw sewage water collected through the underground pipe system is pumped to a settling tank and then to oxidation pond. It is necessary that this water is allowed to stand for at least 7 to 12 days in the open tank for oxidation. In the quicker process oxidation is done by stirring the sewage in an oxidation ditch and it is sufficient if the sewage is allowed to stir for 8 to 24 hours. The schematic diagram for treatment of sewage is shown in Figure 1.

In Los Angeles (California) the sewage water is reclaimed and used

for drinking purposes after recharging it into ground through water spreading basins. In San Diego, U.S.A., the reclaimed water is used for irrigation. The reclaimed water is used for all types of fruit crops in that area. Hence, there is vast scope to utilise the waste water after properly reclaiming in our State.

At present the waste water from the municipality and industries are

not properly and profitably used. As this water is substantial in quality, it is necessary to reclaim it through inexpensive methods. The reclaimed water can be used for irrigating any crops in that area. The oxidation plant seems to be economical one and this method can be adopted wherever it is possible. This way we can bring more areas under irrigation and save large quantity of water, otherwise it will be a waste.

HERE COMES THE ROYAL JASMINE

JATHI MALLI, the aristocrat among jasmines, can earn you Rs. 7,500 to Rs. 10,000 per acre from the third year of planting.

One of the popular flowers of South India, Jathi Malli belongs to the family of Jasmines and is highly valued for the rich fragrance of its flowers. Its flowers fetch a much higher price (sometimes as much as Rs. 10 per kg.) in retail sales than other jasmines. The variety is grown in several parts of Tamil Nadu.

Two distinct types :

There are two distinct types, one producing white flowers and another with pink colouration on the outside. The pink variety is preferred because of its richer fragrance.

The essential oil of jasmine is extracted from this pink type in France, U.A.R., Morocco and a few other Mediterranean countries.

Improved selection :

In the pink Jathi Malli variety, an improved high-yielding selection has been recently made at the Tamil Nadu Agricultural University, Coimbatore. This gives nearly three times more yield than the local type. It is also superior in other respects as shown below.

Every 100 gm. of this variety will have 738 flower buds. The yield of flower buds per plant per year is 23,406 and their weight 48.88 gm. The improved selection gives not

less than 4,500 kg. of flowers per year per acre from well-grown bushes under good care. This yield is considerably more and the flowering season is also longer than in other countries where this is grown for essential oil extraction.

Cultivation :

Jathi Malli is propagated by layers. Plant well-rooted layers just before rains in pits spaced 1.75 metres either way. Irrigation, manuring and pruning are important for securing top yields. Irrigate at least once in four days.

Prune from one year after planting. The best time is from late December to second half of January in Tamil Nadu. Cut back all the shoots to a height of 75 to 90 cm. from ground level. Follow this by complete removal of all the remaining leaves and dead shoots.

Apply manures after pruning and again in July. Dosage per plant is : well-rotten compost or cattle manure 15 kg., ammonium sulphate 800 gm., superphosphate 750 gm. and muriate of potash 200 gm. You can reduce the above dose by half for plants less than one year and to one-fourth for plants less than six months.

A leaf spot disease sometimes causes serious damage usually during the cold and rainy months. Black spots appear on the leaves which later dry up. Control the disease by three or four sprays (at weekly intervals) of Dithane 278 (25 grams in 10 litres of water) or Bordeaux mixture.

TOWARDS DEAR MONEY POLICY

Thiru K. M. Mammen Mappillai, President, Hindustan Chamber of Commerce, rightly observed that the unprecedented rise in the Bank rate had come as a shock to the business circles. The immediate impact of the measure, he said, would raise the cost of borrowing to the trade and industry. More or less the same view was held by the F.I.C.C.I. when it observed "the decision of the Reserve Bank of India to raise the bank rate from six to seven per cent would increase the inflationary tendencies".

The announcement of the Reserve Bank of India, effecting an increase in the bank rate from 6 to 7 per cent, marking a new step in the direction of "Dear Money Policy", is not likely to produce any optimism in the minds of seasoned economists. This will be so for two reasons. In the first place ours is not an organised economy in the sense as it is understood in U.K. or U.S.A. A very large part of the credit still falls outside the organized monetary sector. Secondly, the interest rate will not always function as an anti-inflationary weapon. One per cent increase in the rate of interest may not seriously mean anything for those who invest from borrowed resources. There can still be profitability at higher rates of interest. A higher rate of interest need not necessarily reduce the availability of money. If there should be check on inflation what is required is either a reduced availability of money or an increased availability of goods. Increased production and proper distribution of what is produced can save the economy. Also, reduced public spending can be a more effective check than an escalated rate of interest.

Using the interest rate as an anti-inflationary device was suggested by the late Lord Keynes. He held that to curb inflation, the Central Bank of a country can increase its rediscount rates. An increase in rediscount rates increases the cost of borrowing funds for business and consumer spending and thus discourages excessive activity based on borrowed funds. The whole thing happens in this manner. An increase in re-discount rates leads to an increase in interest rates (i.e.

the interest rates charged by the commercial banks), because there is a definite relationship between the two. An increase in bank rates tends to discourage borrowings by business men and consumers from banks, resulting in a fall in the intensity of inflationary pressures in the economy.

But Keynes himself recognised the limitations of the re-discount rates as a weapon to check an inflationary boom. There are three situations where the interest policy may prove ineffective. They are:

1. If the bank rates (i.e. interest rates on loans charged by commercial banks) do not rise *pari passu* with the rise in re-discount rates, there will be no decline in business and consumer borrowing and hence the inflationary pressures will continue even though the re-discount rates have been raised.

2. The effectiveness of higher re-discount rates as an anti-inflationary weapon shall be considerably undermined if the commercial banks have an easy access to additional reserves. For example, the commercial banks which are in possession of large amounts of short-term Government securities can increase their reserves by selling some of those securities to the central bank or by converting the maturing securities into cash. Instead of borrowing from the Central Bank at higher re-discount rates, the commercial banks might prefer to sell their low-yield securities during inflation.

3. An increase of re-discount rates will fail to check inflation if non-bank holders (e.g. insurance companies, etc.) of Government securities were to convert their holdings into cash. This conversion of non-bank holdings into cash would have the effect of increasing the velocity of money consequent upon increased cash balances. At a time of rising prices and falling value of money, there is strong temptation on the part of holders of fixed-income yielding assets to convert them into cash.

BY

Prof C. S. MAHADEVAN.

Better Household Equipments For Rural Women

From time immemorial, women have carried upon their shoulders the crushing burden of household work. It is only with the advent of technology-based modern civilisation that the members of the weaker sex heaved a sigh of relief, but mainly in the western countries.

Indian women, particularly three-fourth of them living in villages, have not yet benefited from scientific progress to a comparable extent. They still are in daylong toil in the kitchen. In this context, the question of application of simpler technology for the uplift of women is being examined here.

The household equipment industry in our country is being developed rather irrationally. Various defective equipments have flooded the market for being sold at exorbitant rates. Pressure stoves often burst instead of burning properly, electrical and mechanical appliances cost more in repair charges. This has a fleeing effect on the consumers. While such is the situation in urban areas modern equipments have not yet entered rural homes.

Millions of peasant women cook their meagre food and light their huts with primitive-type equipments. The age old mud chulhas spewing obnoxious smoke in abundance are largely responsible for the declining health of village housewives. The pattern of work distribution still indicates that the entire household work is treated as the exclusive burden of the woman.

An important requirement is the eradication of illiteracy. Our society is getting technically-based and to

cope up with this change, women in our homes will be called upon to apply technical skill for higher efficiency and economy in day-to-day household activities.

Although universal literacy among women must be the basic aim, it is possible to spread the uneducated women some elementary technical skill by means of giving them practical training. With dexterity attained by training, anyone can handle modern household equipments properly. Technical skill, creative ability, resourcefulness and alertness are infused in the normal course of school education but these can also be acquired through mass education by mass media, audiovisual aids, etc., at community development centres.

AVENUE OF IMPROVEMENT.

In order to survey the present level of efficiency in domestic work

BY
R. C. MISHRA.

among women and also to suggest avenues of improvement, an all-India seminar-cum-exhibition on household equipments was organised in last January at Ludhiana by the Home Management Department of the Punjab Agricultural University. It was an attempt to focus attention upon an obscure field of activity.

The seminar-cum-exhibition helped to direct the searchlight on the characteristics of available household equipments and the current practices, their price structure, etc.

It also helped to give guidelines to housewives for wise selection of equipments and to the manufacturers for further improvements in design.

As a result of the seminar, it was realised that the household equipment market in India has not developed to an extent comparable with those of western countries. The production value of grinders, mixers, washing machines, irons, geysers, cooking ranges, ovens, room heaters, toasters, saucepan kettles and miscellaneous items, is only Rs. 4.3 crores per year. Use of equipments like coffee percolators, egg boilers, food warmers, dish washers, shavers and other personal-care devices are still to be made popular and there is plenty of scope for development here.

USE OF SIMPLER TECHNOLOGY.

The writer of this article who presented a paper and chaired a session at the seminar made a suggestion to implement a plan of socialism in household equipments with the objective of helping larger sections of the masses. Since the manufacture of household equipments involves simpler technology it was suggested that the Khadi and Village Industries Commission should enter this field in a big way.

The Khadi organisation has deeper penetration and popularity among the masses and so it will be easier to popularise its improvised makes, particularly in villages. The Government should also introduce a quality marking system for ensuring that defective products do not reach the market. It should be made compulsory on the part of manufacturers to offer service before sale, service during sale and service after sale to the consumers.

The Khadi organisation with its greater influence in rural parts should exert to transform the age-old laborious practices of work-disposal into need-based efficient and economic methods. The organisation should also exert its influence to change the unjust and obsolete attitude of men towards women in the matter of household work and to advance the weaker sex.

PROTEIN MAL-NUTRITION QUANDARY OF THE SECOND DEVELOPMENT DECADE

By
W. AUSTIN SIMMONDS

Tens of millions of children in the developing world are doomed to second and third class existence because they, or their mothers when expecting them, did not eat enough of the right types of protein. Recent research has confirmed what scientists long suspected that protein-starvation during critical periods of pre-natal infant development produces damage to the brain's structure and consequently to its functions. And this damage is permanent. No amount of extra protein in later life will make for this crippling deficiency.

In non-industrialized countries this means that the problem of actually providing enough to feed children is greatly complicated by the need to re-orient, re-educate, sometimes even to change completely traditional patterns and habits of eating. But it must somehow be done. Children with such brain damage are handicapped when they try to learn to read and write. Their ability to profit from the knowledge they acquire in school is also reduced. Should such damage become widespread, it will likely impede a country's development.

This is a real danger. About half of the population of the 'developing world' is at present under 20 years of age, about a quarter is below the age of eight. Population control is no answer for children who are already born and who are in vital stages of their growth. Only international public opinion and action can prevent the 'protein deficiency' problem from assuming disaster proportions. To a large measure, the United Nations and its specialized agencies have brought the problem to the attention of governments. The Protein Advisory Group of the United Nations System (PAG) was set up in 1960 and comprised specialists from the United Nations, 1960 and Agriculture Organisation (FAO), the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF). In July 1969 UNESCO began full participation in its activities and the International Bank for Reconstruction and Development joined in 1972. The task of the PAG is carried out in three main directions: adequate food production, research in the human sciences and reorientation of existing methods and techniques and customs tailored to the requirements of present-day individual needs.

After centuries of existence under the threat of famine and near

starvation, the non-industrialized countries of Asia, Africa and Latin America are now becoming, one after the other, self-sufficient in the production of cereal grains. Work carried out by the International Rice Research Institute in the Philippines and the International Maize and Wheat Improvement Centre in the Mexico has resulted in the last five years or so, in a major breakthrough in cereal production in many countries. Last year when these two institutes were awarded jointly the UNESCO science Prize for their "outstanding contribution to the technological development" of Member States, the citation declared their work "has brought not only hope but the reality in solving the problem of food shortages in many areas".

Danger of displacing protein-rich crops:

But the economic benefits of this 'Green Revolution' have also the danger of the displacement of protein-rich crops. Productions of legumes, beans and peas and oil-seeds, such as soya and rape-seed is being reduced in favour of the short-term economic benefits to be derived from the sale of surplus cereals like wheat and maize. Now, fundamental genetic research, that has been so important in the selection of insect and disease-resistant strains of cereals, must be extended to other crops. Many scientists think there is hardly any time to intensify research programmes designed to produce new high-yielding protein varieties and to develop new production methods. They estimate that this will take from eight to ten years to pay off.

As it has been already established that lack of protein causes cerebral deficiency, children living in poverty-stricken areas, including most of the developing world, are, in effect, doomed to failure in both economic and social development. But while the future cannot be predicated it can be invented; today it is within the power of young scientists and educators to control the future.

In order to stop producing future generations of mentally retarded people, the time has come to cry. Nutrition education must become a built-in component of every type of education plan.

Courtesy,—
World Informo.

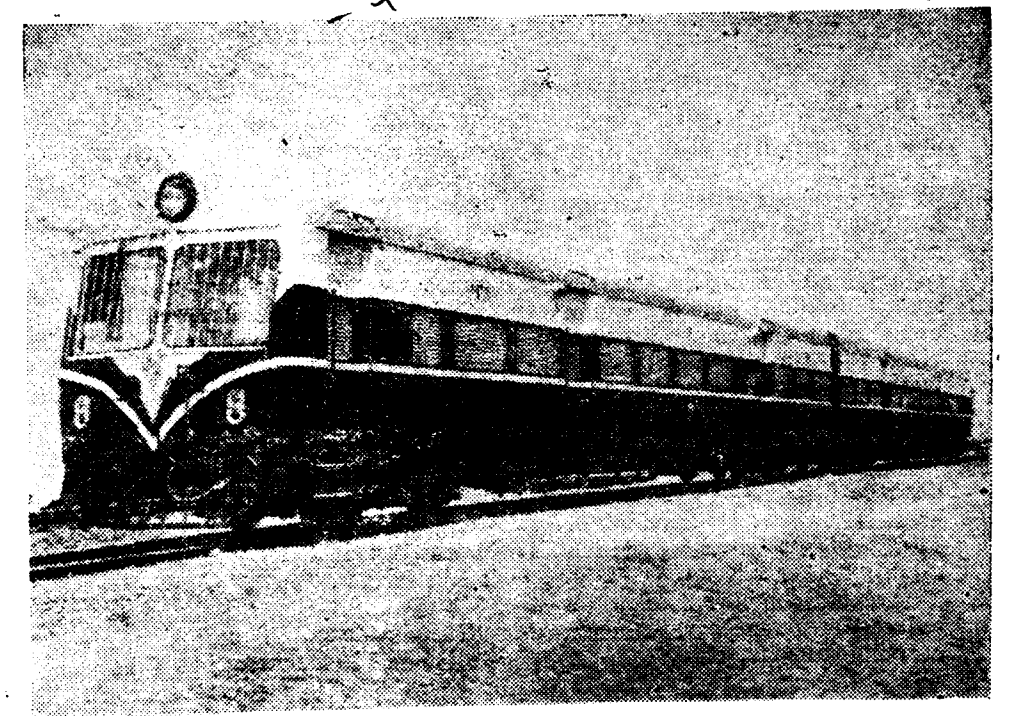


You have a crush on ceramics? TANSI is the place to find them! Dandy flower vases which add beauty to flowers themselves. Decorative ceramic wall hangings, sophisticated tea-sets in vivid or dreamy pastel shades. Lavish your bathrooms with sheeny, shiny sanitary fixtures. Love them. Buy them. Loveliest things would happen at your home.

TAMIL NADU SMALL INDUSTRIES CORPORATION LTD.,
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LOVE ME TOO, DEAR

STEADY AND SPECTA- CULAR GROWTH OF INTEGRAL COACH FACTORY



An exterior view of Diesel Railcar.

Since October 1955, when the Integral Coach Factory produced its first railway coach, over 9,300 shells have rolled out of its assembly lines. Set up in technical collaboration with Messrs. Swiss Car and Elevator Manufacturing Corporation, Schlieren, the factory's initial target was to produce 350 broad gauge shells per annum. Since then, the factory has come a long way and in 1972-73 I.C.F. has turned out 750 furnished coaches and has set a target of 750 furnished coaches in 1973-74.

It has thus proudly earned the distinction of being one of the largest single producers of railway

coaches in the world under one management.

Diversification has been the key note of I.C.F.'s steady progress.

K. VAIDYANATH,
General Manager, (Retd.) Integral Coach Factory.

Not only 32 different types of coaches, both broad and metre gauges, have been placed at the disposal of the travelling public, but diesel rail cars and electrical



An interior view of the Air-conditioned Chair Car of the Rajdhani Express made at I.C.F., Madras.

An interior view of the Passenger Car turned out by I.C.F. for export to Taiwan Railway.

multiple units have also been built in this factory. Two-tier and three-tier sleeper coaches were introduced for the comfort of third class passengers. The air-conditioned deluxe coaches and the Rajdhani rakes are some of the standing examples of I.C.F.'s technical excellence combined with travel comforts. Manufacture of 48 seater first class coaches equipped with super cushioned reclining chairs with revolving arrangements to cater for short distance first class travel is in progress. For relieving congestion for short distance travellers, design of double decker coaches is in hand. This would combine the features of reduced tare weight with increased carrying capacity.

Manufacture of A.C. third class sleeper coaches for improving the standard of passenger amenities offered to third class passengers is on the drawing board. I.C.F. has been entrusted with the responsibility of developing metropolitan stock for Calcutta metro. The organisation has thus been keeping up its promise of achieving self-sufficiency in all types of passenger coaches.

LATEST TRENDS

I.C.F. has ventured to keep pace with the latest international trends in coach building. The weight of the coaches has been on the increase as a result of providing better

comforts to passengers such as increase in the capacity of water tanks and the height of the coach for better head room, etc. The weight reduction has, therefore, constantly engaged the attention of I.C.F. designers and various measures are in hand. Use of corten steel, replacement of asbestos-insulation by fibreglass, modified type of flooring, use of lighter fittings, fibreglass reinforced plastic (FRP) water tanks and seat frames, to quote a few, are some of the steps being taken not only to counter the increased weight but also to reduce it still further.

The incidence of corrosion on steel bodied coaches has been a matter of serious concern. Detailed investigations have been undertaken at various railway workshops and series of trials have been initiated. Window sealing arrangement, sealing of through floor by vermiculite, restricted use of stainless steel trough floor in the lavatory portion, trials with FRP or stainless steel bathroom cubicles, use of FRP surface mats over trough floors in one of the intermediate layers of paint, use of corten steel for shell, are some of the promising features which are being incorporated in I.C.F. design and it is expected that the problem of corrosion would be minimised considerably.

Apart from the standardisation of raw materials, the question of



An interior view of Tourist Car Lounge

standardising the design to enable extensive interchangeability and facilitate production is constantly receiving the attention of designers of the I.C.F. It has been possible to cover different types of coaches on a limited number of types of standard shells. I.C.F. has also been able to reduce substantially the large number of items stocked for production.

ALL-COILED BOGIE.

The collaborators of I.C.F. provided them with a bogie with coil spring for primary suspension and laminated springs for secondary suspension. It was possible to engineer independently an all-coiled bogie with hydraulic dampers on the primary suspension and shock absorbers on the secondary suspension with much better riding qualities. For achieving higher speeds, the search for a new bogie design continued and two prototype bogies fit to run at 160 km. per hour have already been built and are under extensive running trials with the Research, Designs and Standards Organisation of the Railways. Besides achieving higher speed, the new bogie shall be utilising the indigenous plain roller bearing as against the imported spherical bearings, thus completely eliminating the import content on the bogies.

A full-fledged development cell is constantly endeavouring to develop small-scale and other industries to cater to the requirements of

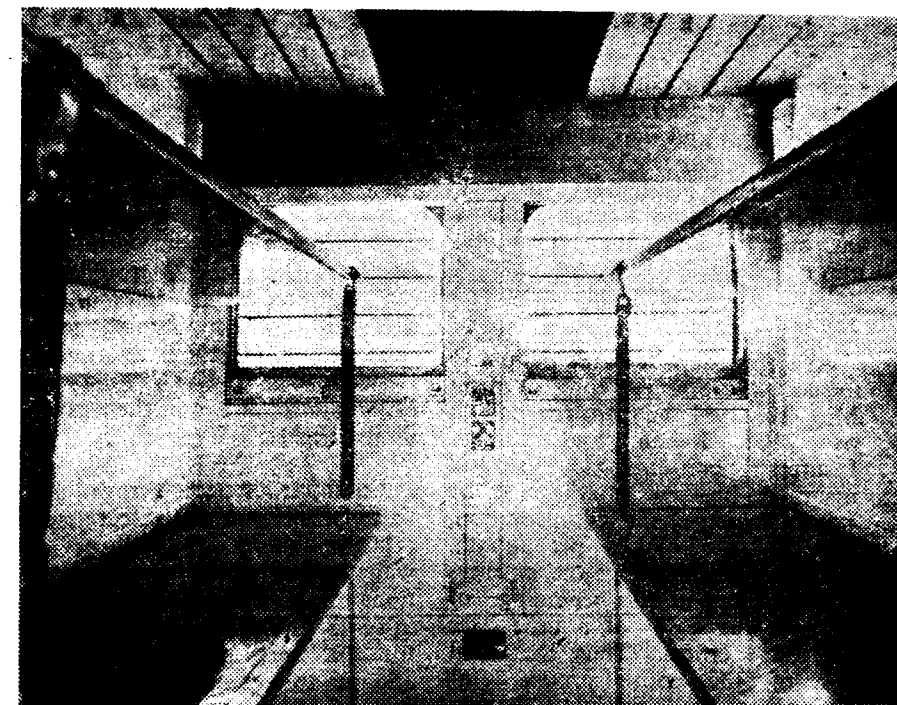
the bought-out components for coach construction. It has been possible to develop alternative sources of supplies thus breaking monopolies. Not only the prices have come down in such cases but also uninterrupted supplies have been assured which has been a frequent feature due to a spate of lockouts, strikes, power-cuts and what not. Regional development has also contributed to shorter procurement time and thus smaller inventories.

Design developments have been possible only with the efforts of the development cell which has been responsible for finding suppliers for unconventional items, viz., PVC mouldings, rigid PVC pipes, FRP wash basins, lavatory pans, wall protectors, seats for EMUs, polythene bush cocks, shower roses and fish-tail heads, etc. In the ever-increasing list of alternative materials, nylon bushes and components, high density polyethylene cloth for the vestibule bellows, FRP lavatory chutes, and partition frames ventilators, mirror frames, shelf below mirrors, are likely to set the pace for the future improvement in the internal decor of the coaches. The use of plastic materials in preference to metals is also expected to contribute to decrease pilferages as the re-sale value of these items is low.

BRUSHLESS ALTERNATORS

With the experience gained from imported brushless alternators fitted on the Taiwan Railway coaches, it has been possible to develop a local firm for similar equipment which is now undergoing trials. Apart from improved reliability of this item which will ultimately replace the D.C. dynamo now in use, it is expected to save approximately Rs. 400 per coach annually in maintenance cost. For providing better passenger amenities, it is proposed to introduce fluorescent lighting in coaches.

Preliminary investigations have also been undertaken to develop nickel cadmium battery in co-ordination with Central Electro-Chemical Research Institute, Karaikudi. This development shall ensure greater reliability of power in the storing system apart from reduction in coach weight and shall bring us in this respect on par with the coaches of the developed countries. For breaking the mono-



An interior view of a Third Class Through Sleeper Coach

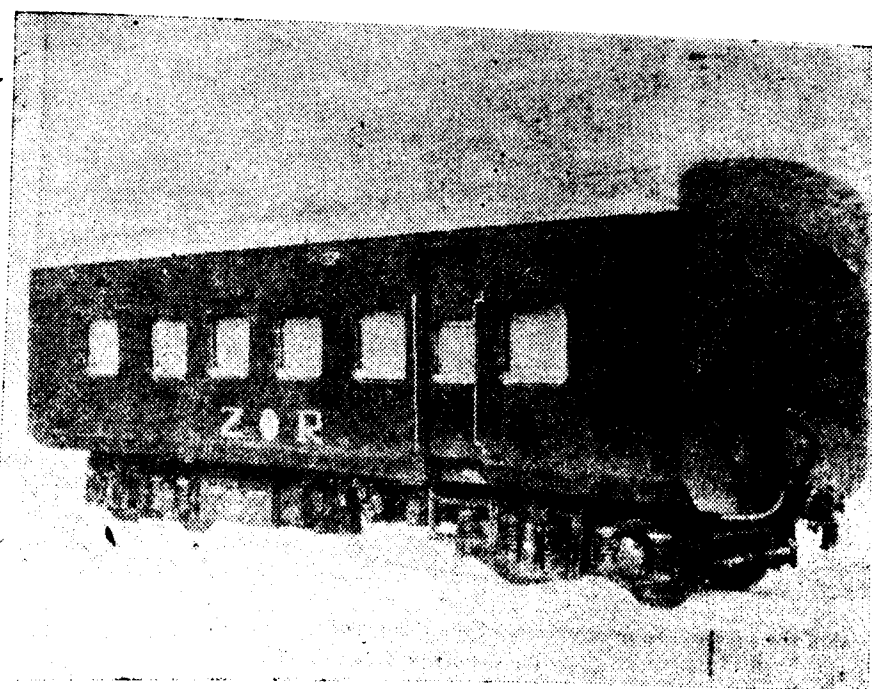
poly of suppliers of air-conditioning equipment of coaches, indigenous development was undertaken for the second Rajdhani Express by ordering the equipment from different sources and matching them to give the desired performance for the air-conditioning required in the coaches. This resulted in a saving of Rs. 16.5 lakhs for the Rajdhani Express. This successful experiment is being extended now for the equipment on the power cars.

With I.C.F.'s sustained efforts in designing, engineering and building, the various equipment like evaporators, control panels, etc. a saving of Rs. 2,00,000 is expected for the partial A.C. coaches. The power generating equipment and the associated drive for partial A.C. coaches have also been progressively manufactured in the country resulting in foreign exchange savings of about Rs. 1,00,000 per coach. Efforts are also in hand to develop hypoid gear box for fully air-conditioned coaches. The proposed indigenous manufacture of components for the MG suburban A.C. electric multiple units is expected to conserve Rs. 10.5 lakhs in foreign exchange.

EXPORT MARKET.

I.C.F. entered export market in 1969 with an export of two bogie trucks to Thailand. Since then 60 bogie trucks to Burma Railways, 45 bogie trucks to R.S.R., Thailand and 100 bogie trucks for Taiwan Railways have been exported. The real break-through, however, came in 1971 with the execution of an order for 113 passenger coaches to Taiwan Railway Administration against keen competition from technologically advanced countries like Japan. It bears ample testimony to the expertise and will of the I.C.F. that the coaches to Taiwan Railways costing over Rs. 3.8 crores were delivered in time in spite of several new features.

Thus, export of coaches, bogies and spares has become a part of regular activity of the I.C.F. With quotations pending for 30 coaches for Philippine Railways and 86 coaches for Zambia Railways and spares for Thailand Railways, the I.C.F. of India hopes to establish itself firmly in the international field.



An exterior view of a Coach for export to Zambia.

GENERAL INSURANCE PROBLEMS AND PROSPECTS

Nationalisation of general insurance was debated over the years in Parliament and outside and some saw in nationalisation yet another instrument for accelerating the pace of socio-economic reform. But it was only in 1970 that the ruling party adopted it as an item of policy. The promise has since been fulfilled.

As a first step towards nationalisation, Government took over on May 13, 1971 the management of over 100 Indian and foreign insurers carrying on general insurance business; the cost, by way of management compensation, was Rs. 33 lakhs per month. Actual ownership of the business was acquired at the beginning of 1973 at the cost of a little over Rs. 38 crores. Thus, the total cost of the entire process of nationalisation covering 107 insurers (including 44 foreign insurers and the General Insurance Corporation of the Life Insurance Corporation of India) is of the order of Rs. 45 crores.

Under the terms of the General Insurance Business (Nationalisation) Act, 1972, the Government has formed a company known as the General Insurance Corporation of India, with an authorised capital of Rs. 75 crores and initial subscribed capital of Rs. 5 crores. The Corporation is entirely owned by Government which appoints its Directors. All the existing Indian Insurance Companies have become subsidiaries of the Corporation; Undertakings of insurers other than the Indian Insurance Companies (Co-operative societies, mutual companies and the Indian branches of foreign insurers) have been transferred to four of these Indian Insurance companies, namely, National Insurance Company Limited, New India Assurance Company Limited, Oriental Fire and General Insurance Company Limited and United India Fire and General Insurance Company Limited. Government will soon frame schemes under which the subsidiaries will get merged with one another in such a way that ultimately there will be only four subsidiaries, each carrying on business all over India. This

would introduce an element of healthy competition among them and the size of their clientele would depend on the efficiency of the service they render.

The Corporation and its subsidiaries have the exclusive privilege of carrying on general insurance business in India, barring certain organisations like the State Insurance Departments, which have been allowed to continue in their existing limited fields.

An important task thrown up by nationalisation is the integration of a large number of employees with widely varying terms and conditions of service. Their continuity in service has been maintained and, for the present, they are also allowed to continue on the same terms and conditions with regard to pay, allowances, etc. But Government is empowered to make alterations and to make provision accordingly in the schemes for mergers of the subsidiaries. These matters are being examined by an Expert Committee which was set up last year to make recommendations for an integrated and rationalised organisational set-up for the future.

It is a truism that nationalisation is not an end in itself. With the change in ownership, a new meaning and a new purpose has to be imparted to the industry. There has to be greater emphasis than ever before on self-sufficiency, probability and prompt and efficient service to the policyholders.

The nationalised set-up has to establish a strong base for future operations so that we could eliminate our dependence on re-insurance abroad (and the consequent drain of foreign exchange) and provide protection to the hitherto uninsured or under-insured sectors of the economy. At present, the more affluent sections of society engaged in commerce and industry, get the maximum benefit of general insurance; other substantial areas of activity (such as the small-scale sector) have not received adequate

attention hitherto. Similarly, not much headway has been made in certain types of insurance, such as householder's comprehensive insurance, fire and theft insurance, agricultural pump-sets and allied insurance.

With State monopoly in insurance, it should now be possible to study in greater depth the nature and extent of demand for insurance and to collect adequate data and analyse them for arriving at scientific premium rates for the large variety of insurance cover which would be required by the different sections of society.

The aim of nationalisation should be to meet the needs of the consumer at the lowest possible price, to act as a model employer and to maximise the welfare of the nation. Though profit-making is not the sole or primary aim, profitability is an index of good performance and it is a condition which a nationalised undertaking is expected to satisfy. Due attention has, therefore, to be paid to sound underwriting practice, proper investment of funds and rigid control of expenses.

In the coming years, greater attention would have to be paid to scientific rating of premiums for the large variety of risks to be underwritten; for this purpose there would also be need for exchange of information with insurers abroad. As regards investments and expenses, the controls provided in the Insurance Act continue to apply to the nationalised set-up. It is to be hoped that the creation of large undertakings would secure the full economics.

In general insurance, particularly, time is of the essence. The machinery must be kept geared all the time to speedy underwriting and expeditious settlement of claims. While due care has to be taken to assess risks and in estimating losses, policy holders must receive prompt, efficient and courteous service. By this criterion, more than any other, the success of the new venture would be largely judged.

TAMILNADU PLANS FOR MORE SILK

SILK INDUSTRY IN INDIA

Silk industry is one of the ancient industries in India. Indian Silk was prized high among the gifts in ancient days and formed one of the commodities for barter deals. In spite of the industry being old, it got confined to localised spots mostly, hilly areas where labour was cheap, and plenty and where climate played the major part in its successful establishment. India occupied the fifth place among the silk producers of the world, the first four being Japan, China, U.S.S.R. and South Korea in that order. Japan is finding its internal consumption increasing and is gradually withdrawing from world market. China is making entry in a big way. With phenomenal speed, South Korea has developed the industry and has usurped India's fourth place.

India has the pride of producing all varieties of silk, viz., Mulberry, Tasar, Muga and Eri. The total production of all these varieties is around 22-30 lakhs kg. The export of Indian Silk, which was Rs. 35 lakhs in 1958, increased to Rs. 5.5 crores in 1968. In 1969, export touched an unprecedented level and exports amounted to Rs. 14.30 crores which earned recognition for silk as an export-oriented industry. The present level of production borders on self-sufficiency and to the extent that export trades pick up, the gap for demand and supply would arise.

The industry in the main was practised in Kashmir, West Bengal and Mysore mostly. It is said that the industry spread in Mysore during the time of Tippu Sultan. The spread to Tamil Nadu was only in the areas bordering Mysore and Kollegal.

SILK INDUSTRY IN TAMIL NADU

In 1956, with the reorganisation of States, Kollegal merged with Mysore and the State lost 22,000 acres under mulberry. The State was left with 1,500 acres in Hosur Taluk of Dharmapuri District and Thalavadi firka in Coimbatore District. It took some time to reorganise the industry to suit the immediate needs and for consolidating the same in the existing places. During the II Plan (1956-61), the State sanctioned schemes for such consolidation and for the introduction of Sericulture in a few places like Tenkasi and establishment of a reeling unit at Hosur with a total provision of Rs. 2.13 lakhs.

Due to the interest evinced by the Government and propaganda by the staff, the mulberry acreage almost doubled during this Plan period (1,204 hectares). During the III Five Year Plan (1961-66) schemes for improvement of farms and expansion of the existing units were also brought under plan schemes. Additional marketing facilities were also provided. New farms in Krishnagiri, K.V. Kuppam, Kolli Hills and Shencottah were started. Financial assistance was offered to dig 25 wells and for construction of 31 rearing sheds. The Plan provision was limited to Rs. 13.00 lakhs, though the expenditure came to Rs. 15.25 lakhs. The mulberry acreage went up by 234 hectares. During the 3 annual plans (1966-67, 1967-68 and 1968-69) 13 schemes envisaged for the Fourth Plan to commence in 1966-67 were got sanctioned and work was started wherever lands were available. Four farms one each at Hosur, Erumadu, Uddanapalli and Gearmalem were established.

TIPPU SULTAN INITIATED SILK INDUSTRY IN MYSORE WHICH SPREAD TO TAMIL NADU

SILK SCHEMES OF TAMIL NADU IN FOURTH PLAN

Establishment of two large-scale silk farms is another new feature of the Fourth Five-Year Plan. These are being established in the remote corners of the Dharmapuri District and Talavadi firka of Coimbatore District providing large-scale employment opportunities to the rural folks aiming at the same time expansion of the industry at a quicker pace. A twisting unit with 360 spindles was also sanctioned and has been commissioned during the last quarter of 1968.

Coonoor Research Station.

An expenditure of Rs. 75.87 lakhs is envisaged in the Fourth Plan on various sericultural schemes on both spillover and new schemes. The mulberry acreage is expected to register an increase by 1,000 hectares in the private sector and 350 hectares in the public sector by the establishment of large-scale silk farms. During the first three years of the Fourth Five-Year Plan (1969-70, 1970-71, 1971-72) a sum of Rs. 25 lakhs has been spent on continuation of two large-scale silk farms. Four chawkie centres and new demonstration farms were opened during the years and by now nearly 1/6 of the total seed requirements of sericulturists have been made available through Government chawkie reared worms

which has boosted the cocoon production per unit area in our State. A research and extension centre at Coonoor has commenced functioning from March 1971. Production of suitable combination of silkworm races has also begun. Experimental large-scale trials are being conducted to test their efficiency in the sub-centre at Masinagudi.

Reclamation and planting to the targeted aim of 500 acres has been completed in the large-scale silk farm in Kolatti (Dharmapuri District) and has started yielding successful cocoon crops and it is expected to break even by the end of the plan period. The other farm in Madahalli (Talavadi) is half way through its planting programme. These farms will provide employment throughout the year for nearly 1,000 rural folks in economically backward areas. A silk testing laboratory is to be established for testing and ensuring quality control of the raw silk produced for which machinery is being purchased from Japan. At the end of the Third Plan period, Tamil Nadu could boast of their achievement in the expansion of the industry in all its sectors attaining self-sufficiency in the requirements of local and foreign race cocoons, production of industrial breed seeds, cocoon production programmes for reeling into silk, etc.

The present position is as follows :—

Area under mulberry	2,950 hectare (7250 ac.)
Seed Production	6 lakhs i layings.
Cocoon Production	2 lakhs kg

Silk Production—

Raw Silk	2,000 Kg.
Cottage basin Cora Silk	7,000 Kg.

THE FUTURE OF INDIAN SILK INDUSTRY.

The production of silk in India has reached a stage of self-sufficiency. When there was a gap between production and demand, the deficiency was made up by imports which led to a chain reaction if the import exceeded or fell short of the gap. This reaction had an impact on the development of the industry. Having reached self-sufficiency, the industry will have to necessarily examine the scope for exports. The main consumers of raw silk in the world are Japan, Italy, Switzerland, West Germany, U.K., South Korea, and U.S.A. Due to the increase in the domestic consumption of raw silk in Japan, which was the largest supplier of this item to the world market, she had to import silk to meet local demand. Of late, South Korea has developed the industry in a remarkable way to become a supplier to the world market. The current World Market condition for raw silk offers scope for India to enter the same, provided the quality of exports is acceptable to overseas buyers. It will thus be given the necessary impetus. The boom in 1969 proved the potentiality for export which should be sustained through proper planning of production and quality and reduction in costs by concentrating further development of the industry in areas where it is already well-established. The improvement in quality can only be got by rearing silkworm races which could produce superior cocoons and getting them reared efficiently. It is expected that other States would be planning to increase production in the years to come and therefore a glut is likely to occur if export orientation programmes are not taken up.



While silk production is to be oriented on export basis, the internal demand for lower grade silk has to be met. In this respect, Tamil Nadu is at an advantage over other States as it has 20,000 handloom weavers using such silk. Due to the nascent stage of development of the industry in the State, production of high grade silk straightaway is not desirable and possible and therefore, to begin with, production of charkha silk may be aimed at in the State. The industry has developed in the plains areas like Vinnamangalam, Palladam, etc. Though the potentialities for production are there, because of the warm climate, production of bivoltine cocoons resulting in elimination of local races will be difficult. Therefore, production of high grade silk will be a tall talk. Taking a realistic view of things, the State has to aim in the years to come at production of silk that will cater to the needs of the 20,000 handloom weavers.

Silk for Warp and Weft

With an estimated annual requirement of 25 kg. for a loom, the calculated requirement for the handloom weavers of Tamil Nadu will be 5.12 lakhs kg. of raw silk. With the anticipated increase in looms, the final requirement can be taken as 6 lakhs kg. On the basis of a ratio 4 : 5 for warp and weft, the requirement will be about 2.6 and 3.3 lakhs kg. respectively. The requirement for warp will be of

TAMIL NADU PLANS TO FULFIL SILK NEEDS OF ALL 20,000 SILK WEAVERS



finer denier, not easily obtainable from charkhas. So an ambitious programme for the production of about 3 lakhs kilos of raw silk of 20/24 denier for weft purposes, can be at once set as the goal to be reached in the years to come. As pointed already, over production may result in glut and the finer denier requirement of silk for warp can be expected to be produced from the States with established sericulture and where rearing of improved varieties for producing silk with such denier is possible.

The Premises and the Strategy

The Plan for sericulture development will be oriented on this premises. It must however be stated here that the development of the industry will be influenced to a great extent by the policy that will be laid down for the whole of India in general and by the neighbouring Mysore State in particular. For example, import-export strategy of the Government of India will influence the cost of silk and consequently of cocoons. The continued production of charkha silk in the established Mysore area and the slow development in production of high grade cocoons/silk will also affect the State. The purchase policy for cocoons or the sale price of silk, which result in losses even in neighbouring States, will also affect the pace of development. This, of course, is an issue to be brought to the notice of the Central Silk Board to protect the interests of the State.

The Dharmapuri Sericulture Demonstration Unit.



To achieve the target of 3 lakhs kilo silk of weft quality, Tamil Nadu will require either 72,000 acres of dry mulberry gardens (at 50 kilos per acre) or 24,000 acres of irrigated gardens (at 150 kilos per acre). Depending on the areas available or those to be tackled, the expansion programme has to be chalked out. On the assumption that about 25,000 acres of dry and irrigated garden have to be brought under mulberry to meet the requirements of silk for weft by the weavers, the phasing has to be made according to the export market and the gap in internal demand. If an ambitious target of realising 25,000 acres is set for a 10 years period, an expansion of 2,500 acres per year has to be brought about.

In this context, it may be examined how the expansion scheme has functioned so far. The pattern has been to start a Demonstration Silk Farm in select places and to encourage ryots later to take up to the industry. The establishment of the farms themselves in ideal situation has been found difficult and time consuming. The spread of the industry in Talavadi/Hosur all these years and the recent spread in lower elevations of Coimbatore district would show the difference. While in Talavadi and Hosur a cautious approach was made with Demonstration Farm to begin with, the expansion has been slow. In Coimbatore district a new approach was made without Demonstration Farms as such and involving private persons directly. The expansion has been rapid. If these were to be a pointer, the future expansion which has to be necessarily rapid could be on the pattern of Coimbatore district. The cautious approach in Hosur and Talavadi involves besidetime factor, creation of assets and expenditure and departmental agency. With a future which calls for rapid expansion with least expenses on departmental agency, a new strategy has to be evolved.

The area under mulberry in Dharmapuri district is 1,860 acres held by 2,100 families. This has been achieved over the years by offering the following incentives:—

- (1) Free supply of seed cuttings, (2) Supply of DfIs. at nominal cost, (3) Supply of rearing appliances at subsidised cost, (4) Rearing and supply of young worms, (5) Grant of loan for sinking

irrigation wells and construction of rearing sheds with 50 per cent subsidy to be needed.

For supply of DfIs, a cross bred gramage for production of 10 lakh DfIs. was established. Chawkie (Young) worms rearing centres were established at 3 places.

An attempt at large scale silk farm was done at Kolattu to provide job opportunities to rural folk. 608 acres of Government land were taken over and cultivable area planted. The farm is providing employment to 750 agricultural labourers.

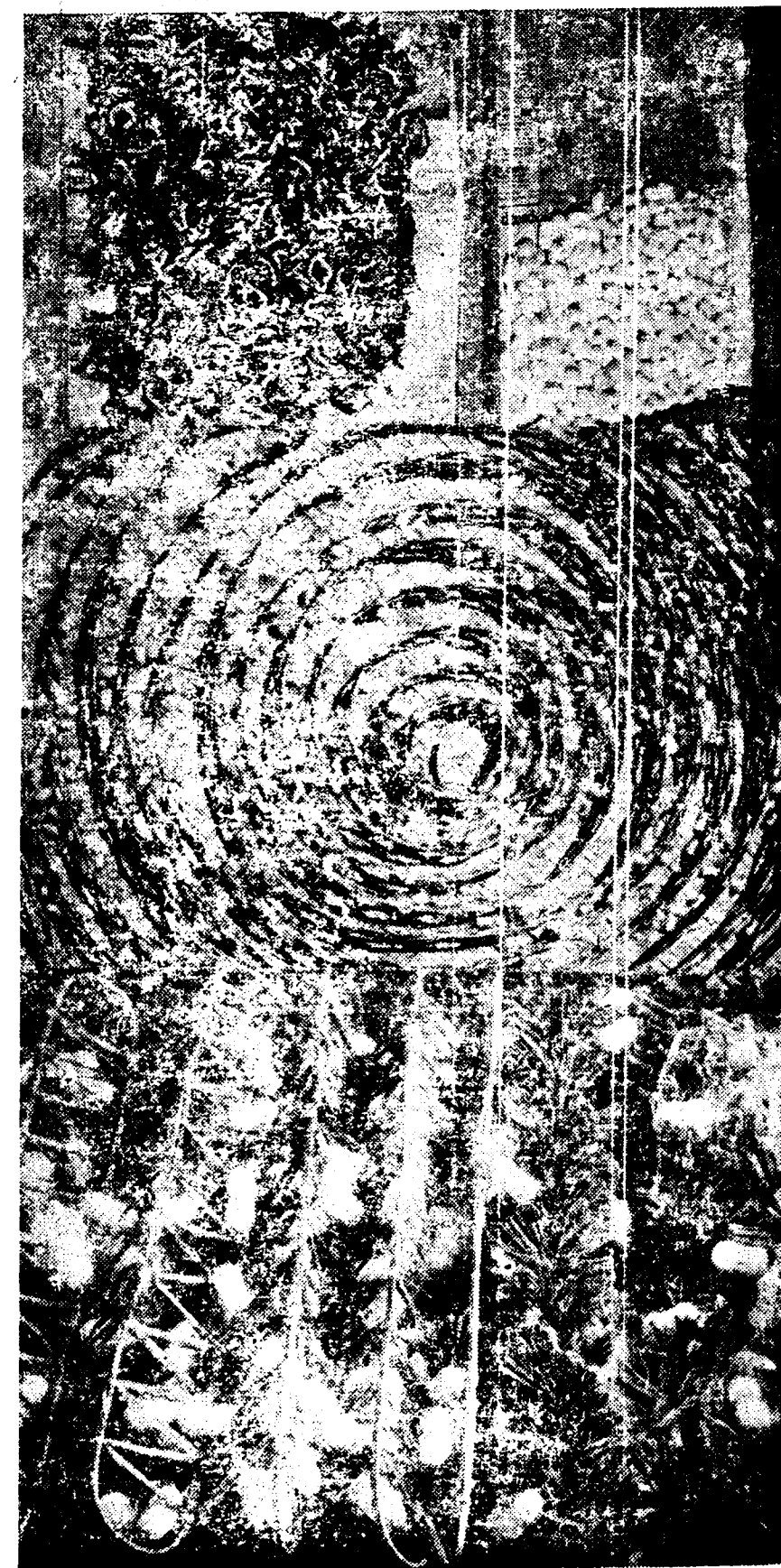
Besides attempts to utilise waste land by Government, a scheme for conditional leasing of Government poramboke lands was also taken up, the stipulation being 50 per cent of the land would be planted with mulberry for a period of 5 years. An extent of 5,042 acres was leased to benefit 2,119 families. The plantations are being taken up in the leased lands.

The silk production has increased from 200 kg. to 2,000 kg. in the course of 10 years.

In the light of experience, it is proposed to make the leasing schemes more effective by offering assignment benefits as soon as the condition of mulberry plantation is fulfilled. Mulberry takes over 3 years to establish itself and stands for over 15 years. For such a crop, the offer of lease has to be on a long-term basis and its absence lends a doubtful bias to investment on improvement. In order to overcome the time lag and expenditure in the initial stages, it is proposed to give financial help at Rs. 100 per acre.

It is proposed to allow the natural spread of the industry under rainfed conditions in Hosur and Denkanicottah taluks in patta hand poramboke lands. Vigorous propaganda for expansion of industry in new places like Dharmapuri and Krishnagiri will be taken up. As irrigation is a must for these new places, aid for irrigation will be afforded for sinking wells and bore wells. It is learnt that a total extent of 92,000 acres of ex-estate Zamin lands is available in

Tamil Nadu has captured cocoon Market.

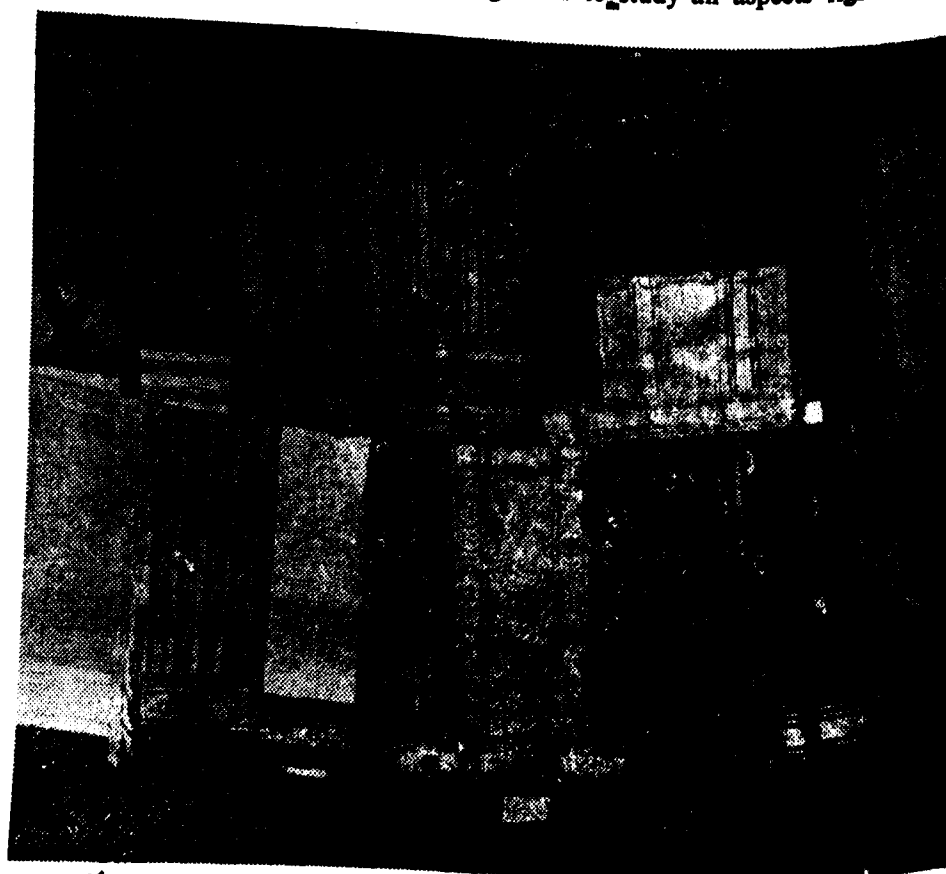




Hosur and Denkanicottah taluks. If the ambitious target of development of 25,000 acres is to be achieved, at least 25 per cent of these lands will have to be ear-marked for mulberry cultivation. These lands can be developed and leased out to agriculturists. For expeditious implementation of this scheme, appointment of special revenue staff is being considered.

The area under mulberry is 4,735 acres and being mostly a dry area, each sericulturist owns about 2 to 3 acres. All concessions offered in Hosur were also extended to sericulturists in Talavadi. A unique scheme of conditional assignment of lands to landless, with a condition that 2/5 of extent be brought under mulberry, was implemented in 1964. This gave a boost; but the full benefit of mulberry expansion could not be achieved as the beneficiaries were mostly non-resident and major lands remain to be resumed for breach of conditions. An expansion of 25,000 acres is envisaged in these two areas, Hosur and Talavadi.

In the next ten years the area under mulberry will go up by 8,000 acres in these two areas.



The spread in new areas has to be under irrigated conditions. With capacity to rear 750 dfls. an acre under irrigated condition and a production of 15 kg. silk, an extent of 17,000 acres under irrigated condition will have to be brought under mulberry. This would mean getting 1,700 acres per year if the target is to be achieved within the planning period. As this cannot be achieved by existing personnel of the sericulture section, the agency of Block and Rural Development will be tapped for the expansion.

Sericulture has already spread to areas in North Arcot and Coimbatore districts. Intensification of efforts in these areas of promise will give immediate realisation. In other adjoining districts, wherever new agencies take up allied works, their services will have to be utilised. For example in South Arcot, the centrally-sponsored scheme of Small Farmers Development Agency will be useful and full advantage arising out of this will be derived. The expansion in areas like Kolli Hills, Elagiri, etc., is proposed to be taken under schemes for the uplift of hill tribes. To the extent silk fabric manufactures would organise silk production to meet their requirements, encouragement will be given.

A small pilot unit, which will take up all aspects of work, will be organised to study all aspects right

from seasonal conditions to silk reeling. This will be the nucleus for future expansion and training ground for the prospective entrepreneurs. The increased acreage would call for increased production of eggs. It is proposed to have the entire production in Government hands as the microscopic test is involved and quality seeds can be produced without descending to commercialisation by Government. This is the expressed desire of the Central Silk Board that all eggs should be tested and legislation should be created to prevent production of unexamined seed.

There are individual cases of outstanding performances in the sericulture section. But techno-

logically, there has not been much improvement. For example, study on dry farming has been neglected. As bulk of the existing area is under dry cultivation and improvement could be brought about only by research, a research unit has been established in 1971 and it will tackle problems which are of practical importance. The maximisation of production in a unit area alone is capable of reducing the cost of cocoons (consequently silk. Studies leading to this factor are being given top priority. Evolving disease and heat resistant varieties will be another major task that will be tackled by the Research Unit.

Expor. orientation of handloom fabrics is outside the provisions of

this scheme. It is expected suitable measures will be taken by Handloom Board and Export Promotion Council to encourage export of handloom fabrics so as to create the necessary base for larger commitments in the years to come, as fashion is something unpredictable. The advances made, and that will be made in man-made fibre may also be phenomenal. A saving feature is that silk contributes about 1 per cent of the total textile fibre production of the world. Even with an increase of 200 per cent in the production of silk in India in the last 40 years, it accounts for only 1/5 of 1 per cent of the total textile fibre production. Even with this infinitesimal production, it has carved a place of its own in textiles.

HOSUR FARM'S SUCCESS IN COCOON AND SILK PRODUCTION

The Royal Government of Bhutan has asked for the finest quality raw silk yarn from the Hosur Silk Farm and a sample consignment has been despatched.

Thiru M. Radhakrishnan, Assistant Director of Sericulture, said the Government Silk Reeling Unit at Hosur has specialised in producing superior quality raw silk suited for production of zari. The unit was sending 1,000 kg. of yarn for zari production to Surat every year. Hosur silk has also captured the handloom market in Kancheepuram and Kumbakonam. Production at the unit, which was 400 kg. in 1959, had gone up to 3,600 kg. in 1972 and plans were afoot to step it up to 6,000 kg. by installing modern equipment.

The unit was located in Hosur with the prime objective of arresting the flow of cocoons in the area to Mysore State. A cocoons market, where arrangements will be made to buy cocoons from mulberry cultivators, was inaugurated at Berikai on 27-7-73 by the Director of Industries and Commerce, Thiru H. B. N. Shetty.

The cross breed grainage programme undertaken at the Hosur Silk Farm has increased egg production from 1,38,128 in 1968-69 to 8,03,435 in 1972-73. The layings are of finest quality and are in great demand even from traditional sericulturists from Mysore.

INCENTIVES FOR DEVELOPMENT OF TAMIL LANGUAGE

On account of the alien rule in the Country for a very long time the languages of the Indian soil had not been allowed to have their normal and due growth as they were relegated to the background, importance being given to English for all official purposes. After the dawn of Independence, the languages of this soil were slowly but in a sure way elevated to the status of official language of the respective states. Accordingly, Tamil was recognised as the official language of the then Madras State in the early 60's. But till 1967, the policy was not given effect to with so much zest and zeal as the problem required. After 1967, when the new ministry under the stewardship of Dr. Ariyaratnam, as the Chief Minister of Tamil Nadu assumed power in the State, all kinds of encouragements and incentives have been given to accelerate the use of Tamil in all branches administration including the sphere of Judiciary.

The progressive introduction of Tamil as the Official Language and the adoption of Tamil as the Medium of Official correspondence are being pursued vigorously by the State Government in accordance with the policy directive given by the State Legislature in its resolution, dated 23rd January 1968.

District Officers have now been appointed to accelerate the pace of inspection and the adoption of Tamil in the District Offices, and to give constructive advice to the members of the staff in noting and drafting in Tamil.

A translation section is also functioning in the Directorate of Tamil Development with three Officers for translating the Codes, Manuals, Acts and Regulations of the State Government into Tamil. A consolidated glossary of Official terms is to be prepared and published during 1973-74.

As an incentive to Government servants to adopt Tamil in their drafts and notes, 15 cash awards of

Rs. 500 each are being given annually to the Government servants who are adjudged to have produced the best drafts or notes. From 1973, one prize of Rs. 500 will be awarded to the Government servant adjudged to have made the best use of the official language in the secretariat.

The Directorate is engaged in preparing the bibliography of Tamil publications from 1867 up to 1940. During 1973-74, final proof correction for the bibliography Volumes III, IV and V each in three parts will be completed. The preparation of Volumes VI, VII and VIII will be taken up in 1973-74.

The Tamil Development and Research Council has been encouraging the production of literature in Tamil by awarding prizes. From 1971-72, the prize amounts have been increased and one first prize of Rs. 2,000 and one second prize of Rs. 1,000 are being awarded every year to the two best books in each of 20 chosen subjects.

The Council is also implementing a scheme of financial assistance to authors to encourage the publication of books in Tamil. Assistance under this scheme has been given so far to three authors and the question of extending assistance to some more authors is under the consideration of the Council.

The Government have been giving generous grants to the Tamil Academy for the publication of the Children's Encyclopaedia in Tamil to the Southern Languages Book Trust for its general publication programme (including a Tamil edition of the UNESCO Courier), and to the Dravidian Linguistics Association, Trivandrum, to further the objective of bringing together the four major Dravidian languages of South India. Certain Universities in other States have also been given grants for conducting research work and for post-graduate studies in Tamil. Under this Scheme, Government have granted assistance to the Osmania University, the Kerala University, the Anna

University, the Venkateswara University, the Viswa Bharathi University and the Calcutta University for the promotion of Tamil or for the creation of fellowships or for the institution of chairs in Tamil.

Since June 1971, a Committee of Scholars under the Chairmanship of Dr. Mu. Varadarasanar appointed by Government, is engaged in writing an authentic history of Tamil Nadu in Tamil. The history will consist of six parts and the first one, on the Pre-historic period will be published in 1973-74.

TAMIL MEDIUM IN LAW COURSE.

As in the case of Arts Colleges in the State where Tamil medium has been in vogue for the study of all art subjects, the Tamil Medium of instruction is to be introduced in Madras Law College during the coming academic year (1973-74), if there is sufficient demand for it from the students. Almost all the staff of the Law College have volunteered to co-operate in the experiment which is designed to provide students in Tamil Nadu with an opportunity of studying law in the mother-tongue. Many North Indian Universities already offer students the option of studying law in Hindi.

The Madras Law College students who choose to study law in Tamil medium will have the option to take the examination in English or Tamil. The Tamil medium will be available for the evening course students only in June 1974 when a new batch is admitted.

The Tamil Nadu Lexicon Corporation, a State Government Corporation, has initiated the necessary action for bringing out books on law in Tamil in the context of the State Government's efforts at introducing Tamil medium in various courses of study. Manuscripts for books on almost all law subjects have been prepared by the staff of the law College by a special committee. A textbook in international law in Tamil by Prof. A. Palaniyandam, Director of Legal Studies, has already been brought out. The State Official Languages Committee has brought out a law Lexicon in Tamil, containing a glossary of legal terms in Tamil.

Law students who opt for the Tamil medium could of course have access to the original case laws in English to augment their knowledge.



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R.R.No. 1420/73

OUR BELOVED

Anna - 493

Glory to our land! This ancient Tamil Land!
Whose wisdom in the Past and Present shine aloft
Glory to her sons dignity incarnate!
As our late Anna bears witness adequate.
Long live thy name! Anna! Our Leader!
Enshrined in our hearts, our beloved Brother!

The lowly and the humble were thy foremost care;
Your own health, you bestowed scanty care;
Generous to a fault, and courteous to all,
Faithful to the cause, You sacrificed thy all.
Long live thy name! Anna! Our Leader!
Enshrined in our hearts, our beloved Brother!

You raised your voice against the march
Of an alien tongue coming to scorch
Our life and language; we rallied as one
You led us to the front and the battle was won
Long live thy name! Anna! Our leader!
Enshrined in our hearts, our beloved Brother!

Looked down we were—There were insidious foes—
An enlightened race fell on evil days.
This illustrious land gave birth to this son
Who routed her enemies and glory brought again
Long live thy name! Anna! Our leader!
Enshrined in our hearts, our beloved Brother!

R. NATARAJAN

Tamil Arasu

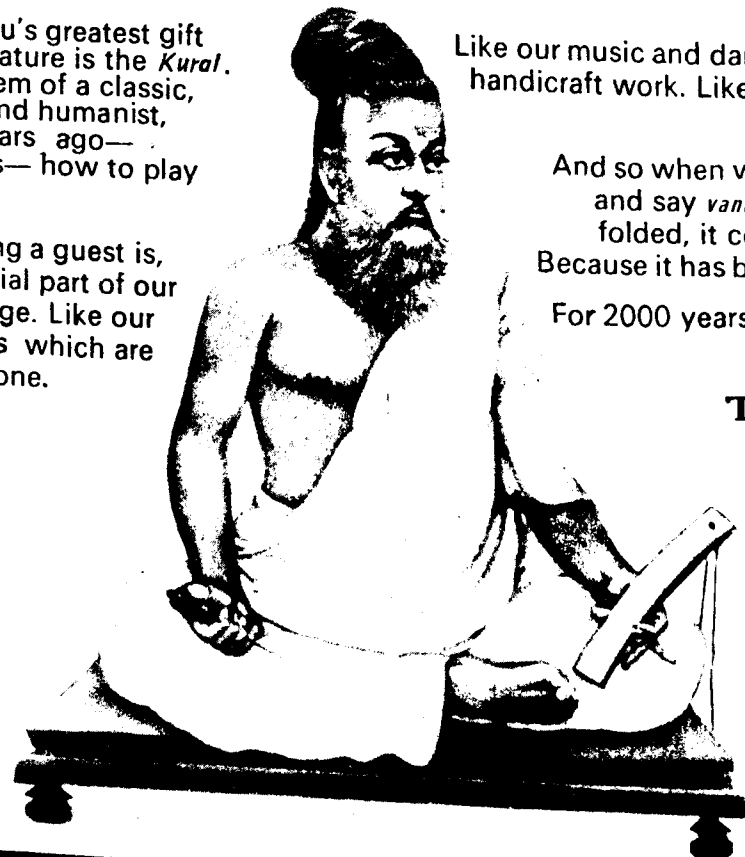
Vol. IV SEP. 1973 Issue 3



A poet asked us, about 2000 years ago, to keep an open house ... and we still do

Perhaps, Tamil Nadu's greatest gift to the world of literature is the *Kural*. And through this gem of a classic, Tiruvalluvar, poet and humanist, taught us 2000 years ago—among other things—how to play the host and like it.

The art of welcoming a guest is, therefore, an essential part of our great cultural heritage. Like our magnificent temples which are really sermons in stone.

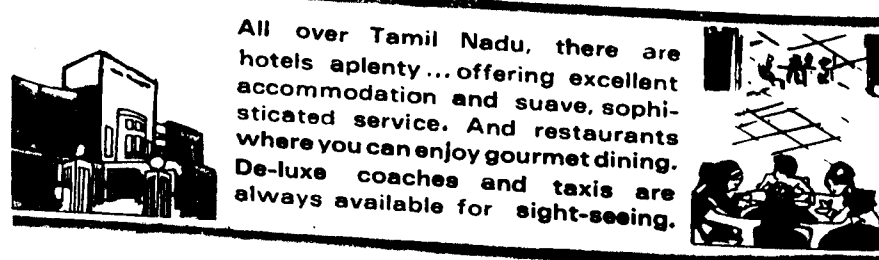


Like our music and dance, folklore and fine handicraft work. Like our golden beaches and glorious skies.

And so when we bid you welcome and say *vanakkam* with our palms folded, it comes naturally to us. Because it has been a way of our life.

For 2000 years. Maybe, even more.

TAMIL NADU
WHERE HOSPITALITY
IS AN ART



All over Tamil Nadu, there are hotels aplenty... offering excellent accommodation and suave, sophisticated service. And restaurants where you can enjoy gourmet dining. De-luxe coaches and taxis are always available for sight-seeing.



DIRECTOR OF TOURISM,
GOVERNMENT OF TAMIL NADU, MADRAS-600009

2

Tamil Arasu welcomes

12th ALL INDIA HOTEL & RESTAURANT CONVENTION



Photo by: Raj.

3

THE TAMIL NADU TOURISM DEVELOPMENT CORPORATION
GREETES

THE DELEGATES TO THE 12TH ALL INDIA HOTEL AND
RESTAURANT CONVENTION AT MADRAS
AND

WISHES TO SAY THAT IT IS ALSO THEIR PARTNER IN
PROVIDING THE TOURIST INFRA-STRUCTURE IN TAMIL NADU.

The Tamil Nadu Tourism Development Corporation Runs a chain of
eight well appointed Tourist Bungalows at Tiruchi, Madurai, Tiruchendur,
Kanyakumari, Ooty, Kodaikanal and Yercaud in Tamil Nadu.

It also operates CONDUCTED TOURS AND PACKAGE TOURS
covering all Tourist Spots in Tamil Nadu.

Plans to build Tourist Bungalows in "Tourist Centres", "Health
Resorts", "Sea-side Resorts" in the coming years.

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Tamil Nadu Tourism Development
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34, ANNA SALAI, MADRAS-2.



A discussion to ascertain how far the 12th All-India Hotel and Restaurant Convention will help focus attention on the Tourist infrastructure facilities created by the Government of Tamil Nadu was held among three persons dedicated to Tourism and Hotel industry. In this discussion Thiru P. Ananda Rao, President of the I.H.R.A.I. and Thiru L. S. Nadhan, Director, Government of Tourist Office in Madras, played a leading part, while Thiru K. S. Ranga Rao, asked questions from the point of view of the consumer.

As on opening gambit, Thirumathi Nadhan declared that Tourism cannot survive without the Hotel Industry. Thiru Ananda Rao led the discussion by saying that Government was certainly playing a leading role in developing and fostering tourism to a considerable extent, but that "in all these promotional campaigns there is no limitation factor at all and the more you do the better results you get".

Mrs. Nadhan : Naturally! until this year perhaps, the traffic to the Southern Region has been very much smaller than it could have been. Much of this is due to the fact that some

of your facilities were not first class or were not up to the mark ; and what little facilities we did have were well utilised. But it simply is not enough to rate the southern region as a Tourist Paradise. We have always been stressing the fact that whether you are looking for the traditional India, with its wonderful monuments and temples or whether you are looking for scenic beauty or beaches or game sanctuaries, the South has much to offer. For instance, in the North (the tourists have mentioned to us) the cosmopolitan atmosphere does make them feel it is not much different, the big cities like Bombay, Calcutta or Delhi can be just big cities anywhere. But as they come down South this has a very special appeal. But our best hotels didn't compare with the best hotels in other parts of India, leave alone the rest of the world. Though more and more tourists are turning to the medium-budget hotels, the fact that there is no first class hotel immediately places any city in a particular category in relation to tourism. We could never boast to a travel agent that we have first class hotels as they go anywhere in the world. And this will be a draw-back. And how with all the hotel building activities going on, by 1975 we should be really

ready for very big traffic. Mr. Ananda Rao do you agree ?

Chicken or the Egg ?

Mr. Ananda Rao : Yes, I do agree. To a certain extent, speaking on behalf of the hotel industry, I might also say that hotel buildings come up only when there is demand. The entrepreneur is not willing to take a risk for fear of low occupancy.....

Mrs. Nadhan : Here the problem is which comes first, the chicken or the egg. Our problem is we can't advertise unless there is some facility or some background available. And your problem is unless they start coming, you are not prepared to give us the buildings. But I think somewhere we must break this impasse. And we are on the way to.

Mr. Ananda Rao : I do agree with you on that, and also the Tourist promotion to this part of the country has been a little tardy in the past. Mrs. Nadhan is reasonably correct when she says that there should have been the infrastructure before any major promotional aspect for diverting traffic to the Southern Region. But now these things are going hand in hand.

There is appreciable pressure on tourism aspect in the South and tourists have also been coming in larger numbers and the entrepreneurs have also thought that this is about the correct time for building up more hotel rooms in South India, particularly in Tamil Nadu.

Tributes to T.T.D.C. :

In addition to the number of rooms that are being put up by the hotel industry, we are very happy to welcome in our midst the activities of the Tamil Nadu Tourism Development Corporation. Because, they have done some pioneering work; they have a well equipped unit for transportation and sight seeing; and they have got accommodation, medium priced, in fact we can even say low-priced accommodation so that nobody can say that the charges are beyond the reach of the common man. They have places in Kanyakumari, Tiruchendur, Madurai, Tiruchirappalli, Ootacamund, Kodaikanal and Yercaud. We have a dynamic Chairman for the Tourism Corporation Mr. Asaithambi, he is ably assisted by Mr. Ahluwalia. The Tamil Nadu Tourism Development also should be complimented on getting us a little focus of attention; they had a brilliant Pongal week celebration earlier this year and next year they are planning a Tourist Fair in the Defence Department's Island ground which will coincide with the Pongal of 1974 and is bound to be a Food draw for tourists. Countries all over the world will have, advance intimation as to what is going on. The rooms by and large, are improving day by day; the hoteliers themselves have realised the importance of maintaining clean hotels, looking up to the comforts of tourists who come. And lastly, whatever publicity one might get by way of advertisements, the best is always what goes by way of the word, from person to person, someone who has utilised the hotel, if he feels satisfied, you can be sure he will go back and talk to his friends and relatives in his home town and that will bring you greater results and greater rewards than anything else. This way, the hotel industry can play an effective tourism promotion work.

Tourism And Prohibition

Question : Mr. Ananda Rao, could you tell me whether the traffic



has increased because of suspension of prohibition in Tamil Nadu?

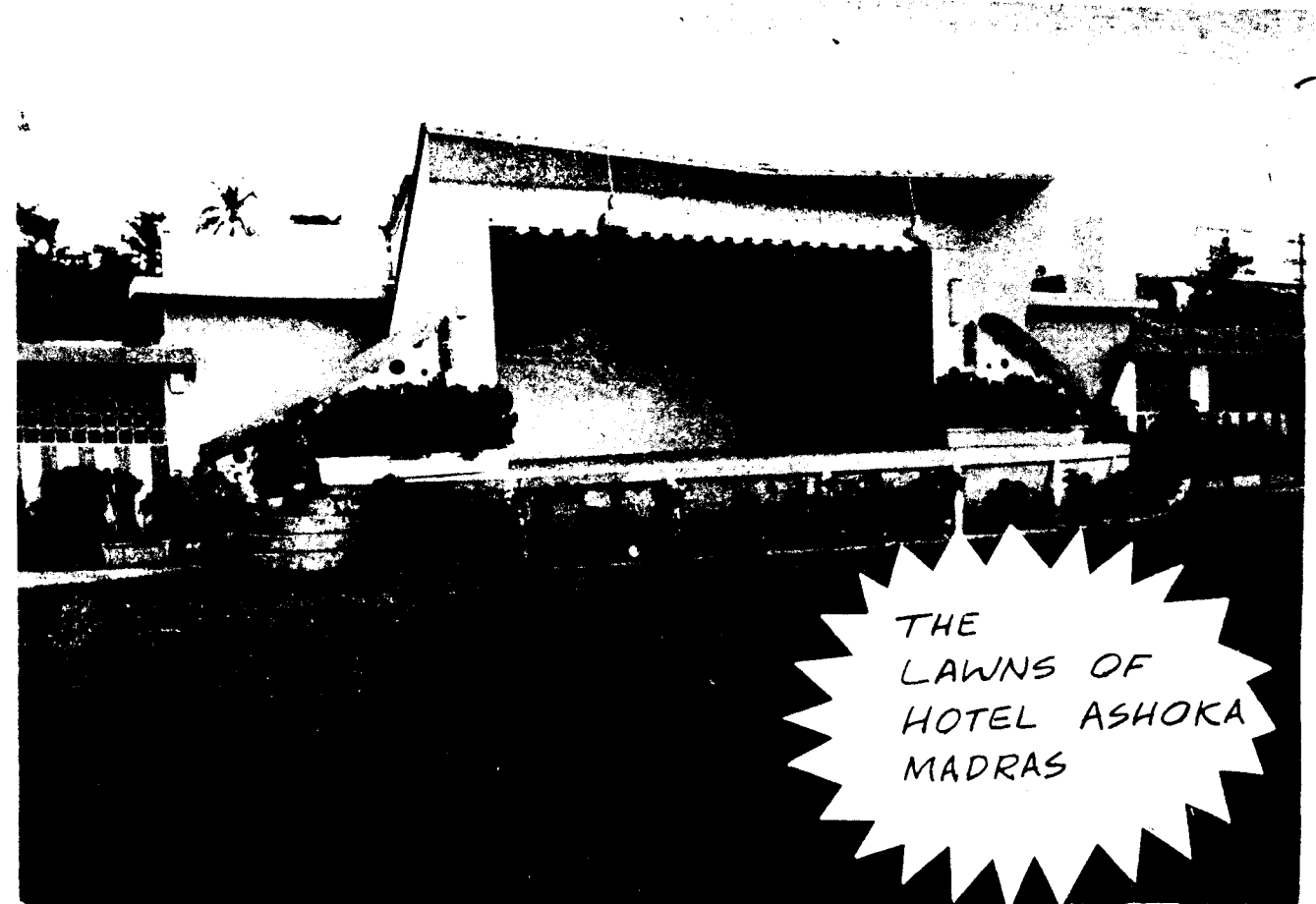
Mr. Ananda Rao : I'm not willing to subscribe to that idea. Because one must be very, very definite about these things. All tourists, who come into India, do not come merely because they want to drink. It is a habit with people, i.e., after a day's hard work they want just to have a peg or two to relax. It is also in their food habit. But I will never subscribe to the idea that one of the reasons why tourism is improving and more tourists are coming to Tamil Nadu is on account of suspension of prohibition.

Mr. Nadhan : I would put it this way. When we had prohibition it was not as if anybody was deterred from drinking; however they found the formalities very irksome and a person who is used to drinking as a casual part of his day's routine,

found it very, very irritating that he had to get a permit and go to a special room to have it. It has eased, the suspension of prohibition has eased conditions. The lifting of prohibition has put an additional amenity in his way, i.e., to drink very casually as he would in his own country.

Not so International

Inevitably, then the inadequacies of airflights landing at Madras Airport and of airports were gone into, Mr. Ananda Rao was emphatic that the South India Hotels and Restaurants Association had always been harping on the need for diverting some of the Airlines to pass through Madras Airport. He said that except three flights of Air-India and three flights of Air-Ceylon, none of the International Air Flights touch the Madras Airport. Of course the stock reply that was given to



THE
LAWNS OF
HOTEL ASHOKA
MADRAS

us is that you can't have entries and exit points in India, because these are all arranged on a reciprocal basis. But there is nothing to prevent the Civil Aviation Ministry to divert the traffic which is focussed between Delhi and Bombay. This will certainly help in promoting tourism here. Our thinking is very simple, if an aircraft passes through Madras, it is likely that some one, who goes beyond Madras, will stop over in Madras for a day or two to go around and see the places in Madras and take a plane the next day.

Now that the airport has been got ready for the 747 also after, strengthening the runway, we think, this is just about the time when the Tamil Nadu Government must back us up on this and take this up at the highest level with the Civil Aviation Department at Delhi.

Mr. Ananda Rao was very candid about our airports. He said "I think, we are still in the pre-historic stage as far as Madras airport is concerned. There is scope for a lot of improvement and we are told that certain schemes are in the process of being worked up, but how long it is going to take effect is anybody's guess. So, here again, is

a point in which the Government of Tamil Nadu can assist the Travel agents and the Associations of Hoteliers by taking up with the Airport Authority to get conditions in Madras airport improved without any further delay. We call the Madras an International airport, but there is nothing very much International about it.

Mrs. Nadhan agreed that much has to be done in general terms about improving our airports. She said that the creation of the Airport Authority for the four major airports, Madras, Bombay, Calcutta and Delhi was the first step towards improving airports to international standards. But even our small airports do need quite a lot of improvement. Hyderabad is one of our points of pride. Even though it is a small one, the facilities there are adequate and it makes you feel that this is an airport of this century. Others are unfortunately still in the previous century.

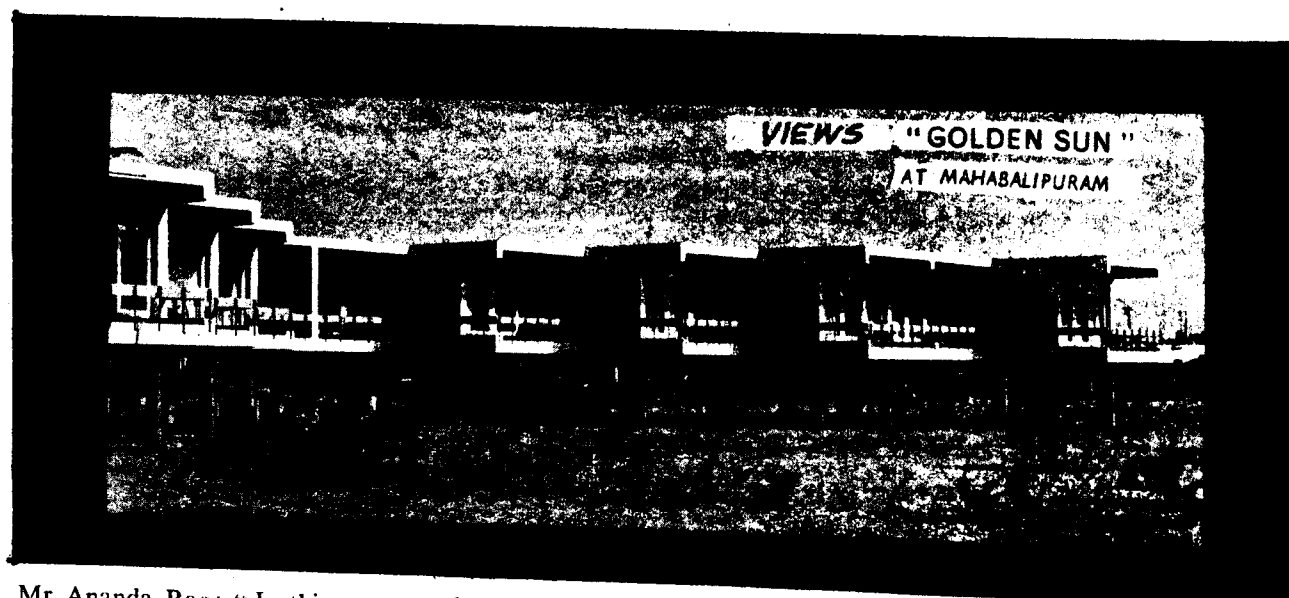
Where is Customer satisfaction?

Continuing, Mrs. Nadhan said that what matters more than the air-

port building was the customer handling at our airports. She averred that much streamlining was needed in ways of Customs handling in our airports. "I think at the moment we are just managing to handle the traffic without much impact on the tourists by way of special facilities and the special attention which earn customer satisfaction".

Mrs. Nadhan was then asked about the fact that last year there was a 27 per cent leap in the number of visitors to India. She said, "It is one of the phenomenal. All our efforts have contributed to it, we also have to recognise the fact that India is perhaps an 'IN' place now especially with the younger people. It will continue to be so. Rather than worrying about the number of tourists, we should worry about increasing the length of their stay, seeing that they spend longer time in each area and seeing that they go back and come again after a little while as second-time visitors.

The hotels particularly should be quite keen to make more efforts to this end."



Mr. Ananda Rao: "In this context we should like to pay a tribute to the work done by the Government of India Tourism Department officers abroad as also various officers of Air India abroad, who have been putting out a very true picture of what India is, what Indians are and what type of facilities are available here, and we are very deeply grateful to these two units who have done tremendous amount of promotional work for the country. So also, the PATA India chapter team who have visited countries like Canada, U.S.A., U.K. and Europe to bring India greater strength of foreign tourists, larger amount of foreign exchange earnings and reasonable amount of economic prosperity which our country needs.

The question of cars and coaches

One sure point with hoteliers and Travel Agents is the non-availability of imported cars and coaches for the benefits of tourists, Mr. Ananda Rao feels (regretfully no doubt) that the number of imported cars and coaches in Madras are totally inadequate for the use of tourists. He said that the hotel industry not only in the South India Regional level but also in the National level have been trying to impress on the Tourism Department that in addition to the State Trading Corporation cars and Coaches which are being allocated to the various travel agencies and hotels they should give import licences to import first class car into the country. Though we can be reasonably proud of the Indian-made cars, the tourist is just not fully satisfied with our cars, because he is used to some type of comforts and unless we may assure

that type of comfort is available he may not look to India for his travels and that he may look elsewhere for his travels.

Mrs. Nadhan: Well, I also think on the same lines. Our coaches really do not conform to international standards. I have myself talked to tourists after a coach tour whether it is a privately arranged coach tour or by Government agencies. Most of the complaints relate to the standards of comforts available even in the best of our coaches. The width and the size of the seats are inadequate for westerners. The coaches must be air-conditioned, because during nine months of the year in India the whether is uncomfortable for tourists for the long distance journeys. He

does not mind the hot sun when he reclines on the beach but on his way

to the beach, he wants reasonable comforts. So he need comfortable coaches with first class public address system. None of the coaches even those provided with the P.A. we find adequate sound system. The P.A. system is just there. It is not completely adequate. So I think that special attention could be paid in the next few years for building,

coaches in India, first class coaches of international standards. Many of the group tourists, as also the tour leaders have told me that they prefer a coach rather than five cars. Because it is easier to handle large groups when they are all together. They will certainly be happy to pay well and hire these first class coaches.



A TOURISM PHILOSOPHY FOR INDIA AS ACCEPTED BY THE NATIONAL TOURISM BOARD

Tourism is a mammoth, rapidly expanding global industry. It is among the most lucrative markets, of which India's share so far has been very small. It need not be. Beyond purely commercial and merchantile gains, tourism, if seen in the proper perspective and encouraged with the requisite imagination and dynamism, can bring immense profit to the community and nation in material and intangible benefits. This fact has not been fully appreciated by our policy and decision makers and planners. Tourism has been considered as some sort of an international fad in which we are somehow involved and which we must humour. The interplay of conflicting ideas has led to haphazard, un-co-ordinated activities with self-defeating or counter-productive results.

For the past twenty-five years, Tourism has been a part of Indian activity, for fifteen it has been a conscious and organised activity growing in time, size and scope. But the thrust of this activity has never been towards a clearly planned objective except to entice large numbers of people, affluent people, into India and to earn foreign exchange from their spendings.

We believe the time has come when we must see tourism in the large view of the country's aims and goals, in the context of the people's needs, in every aspect of their existence, and in terms of the consequences, good or bad, that this activity can bring upon them. We must spell out a philosophy which can guide us along the right line of action.

Tourism is for us travel by all people, foreign and Indian around the country. Tourism is an economical, developmental and promotional activity which can have a profound impact upon the nation and its place in the world.

Tourism can bring in the largest amount of foreign exchange and the maximum return for minimum investment, with no depletion of national resources. This can significantly reduce the need for foreign aid and assistance and help in the self-reliant development of certain crucial economic sectors.

Tourism investment brings in more than the immediate and visible return. It benefits a wide radius of related and ancillary activity. Tourism enables money to circulate among and percolate to many levels of the community.

Tourism can provide substantial employment in service industries and particularly jobs to the "educated unemployed." Tourism can give a stimulus to the socio-economic development of areas of the country which have received inadequate attention so far.

As an open society, we must expect people to visit us, see us as we are and gather some impressions of us. Tourism, therefore, has more than an economic dimension. It can be an important means to create a larger understanding among the people of the world about India, her people and her aspirations and efforts towards bringing about an advanced social, economical and cultural order.

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A tourism philosophy must, therefore, be so conceived that it helps distil the good while drawing off the bad. It must help preserve, retain and enrich our world-view and life-style, our cultural expression and heritage in all its manifestations and development. The prosperity that tourism brings must cause accretion and strength rather than damage to the structure of our life and objectives.

WE, THEREFORE, FIRMLY BELIEVE THAT, IN TOURISM, INDIA MUST PRESENT HERSELF ON HER OWN TERMS, NOT AS AN ECHO OR IMITATION OF OTHER COUNTRIES AND OTHER CULTURES AND OTHER LIFE-STYLES, NOT IN A SPIRIT OF INSOLENT ULTIMATUM—TAKE IT OR LEAVE IT, BUT ALSO NEVER APOLOGETICALLY. THIS IS THE INDIA WE HAVE. THIS IS THE INDIA WE ARE BUILDING. THIS IS THE INDIA WE ARE PROUD TO BELONG TO.

The needs of tourists must be properly read and fulfilled within reasons but co-related with our

terms. We must not be totally insensitive nor must we go out on a limb to pander. We must merely gratify what they want but also stimulate them to what we want them want.

India must present herself as a unique combination of elements rarely to be found elsewhere that will be developed and strengthened for the long-term benefits of the country and Indians themselves.

We must aim not only at pleasure-bound tourist but also those who are receptive to other aspects of life in India, particularly our social, economical and cultural quests.

We must not seek purely an annual increase in brute numbers but people of the type we need and can handle adequately based on existing and developing capacity. Far better to have a manageable cross-section which returns happy than a disorderly mass which goes back smouldering. Numbers must increase in direct proportion to increased capability.

We must offer a variety of novel and inventive tourist packages, apart from time-honoured targets.

Tourism must deliver adequate benefits locally and to the local people. The luxury image of tourism needs to be carefully handled. The disaffection caused by the encouragement of conspicuously affluent hotels at the cost of other more pressing priorities should not be overlooked. The optimum number of super luxury hotels in our major cities needs to be fixed. The continuing emphasis on them ignores the pockets and tastes of large numbers of tourists, both foreign and domestic. What we need is a larger number of modest, functional, neat, clean and aesthetically satisfying accommodations with good services efficiently maintained.

A greater and equitable dispersal of prosperity to larger number of people is possible through encouragement to small investors in setting up hotels, mansions, etc. or ancillary services like transport.

In this line, servicemen being retired out of the Armed Forces, while not yet past their prime, might make for excellent entrepreneurs. Their sense of discipline and management and acceptance of working and living anywhere can be a great asset and should be fully exploited.

The tremendous variety of authentic Indian cuisine needs to be developed to tourist tolerance. No attempt has been made yet even to touch the fringe of this highly exciting gastronomic adventure. A vast culinary world exists beyond what is now available.

We must seek a massive improvement in tourism mobility and achieve a break-through in road, rail, air, sea and river transportation. We

must accept that inadequate capacity in Indian Airlines stands to become the greatest single hurdle in tourist mobility unless far-seeing plans are put well under way now to reverse this eventuality.

A qualitatively different type of decision-making, co-ordination and executive skill is needed for tourism planning and execution.

We must create, develop and use our own talents and skills for tourist plans and programmes. In rare cases, where there might be imperative need, foreign experts should be sought only on the condition that they will work with Indians in such a manner that they themselves can rapidly be phased out.

A massive effort is required (though not only for tourism alone) to correct the distortions in our life-style, bureaucratic excesses, vagrancy, rapacious touts, bad food, exposure to infection and humiliation, avoidable filth, etc. These must be seen as distortions and not airily dismissed as inevitable ingredients of the "Indian Experience".

An equally massive effort needs to be made to engender in our people sympathy and friendliness and not hostility for tourists.

It must be a major function of tourism planning to protect, conserve and develop our environment, natural, archaeological and man-made. In vital sectors of Zonal and area development, tourist authorities must be intimately associated. The preservation of Indian Wild-Life must also be considered a major concern of tourism.

In all these spheres there is a great need to sort out and rationalise the multiple overlapping and counteracting inter-ministerial and inter-departmental agencies.

Central, State, and non-Official plans and projects for tourism need to be developed with the highest degree of collaboration, co-ordination and co-operation. At present, they seem to be undertaken in isolation or in a vacuum. Every activity must blend into the overall national structure. There should be no scope for duplication and cross purpose.

There is imperative need for uniform legislation related to tourism throughout the country. At the moment different States have different laws, many of them opposed to each other. This proves a cumbersome hindrance to the smooth operation of tourism. To begin with, a rationalisation of existing laws as between States is crucially urgent. Fresh legislation should be undertaken only in the context of an all India framework.

Ultimately, tourism's performance must be constantly evaluated solely in terms of its contribution not to any particular section or sections of the community but to India's wider socio-economic development.

OUR HIGH HOPES HAVE SOLID PLANS AND NO FALSE CEILINGS

The sad fact has to be admitted that it was found at one stage that there was practically no provision for expenditure on Tourism projects in Tamil Nadu under the Fourth Plan. Vigorous campaigning by State Officials and some generous gestures on the part of officials connected with Tourism in New Delhi, however enabled the State to fulfil some cherished schemes such as the Mahabalipuram complex which has already started yielding results in that we see groups of tourists making a bee-line for Mahabalipuram after landing anywhere in India and 'doing' the Kancheepuram round with Mahabalipuram as the centre of halt for two or three days. But for these vigorous efforts we could not see foreign Travel Agents selling India as a 'Taj, Temple and Sun' package, the last two being a reference to Mahabalipuram its glorious Sun, Sand and Sea.

The Tamil Nadu will not be found so sleepy in the drafting of the Fifth Plan and the subsequent one too. For, the State has now its own Planning Commission which has appointed Task Forces for examining various aspects of development. Similarly it has appointed a Task Force for Urban Development and Tourism headed by no less a person than Thiru N. Mahalingam, B.Sc., F.I.E., who is also a Member of the State Planning Commission. In addition, the State's Tourism Department has also done a good deal of 'home work'. So much so, Tamil Nadu has well thought out and feasible as also necessary Tourism Schemes for the next decade, 1974-84.

The following knowledgeable persons find a place in the Tourism Working Group of the Task Force :

Convenor.

- 1 Thiru A. S. Ahluwalia (*Director of Tourism in State*).

Members.

- 2 Thiru P. Ananda Rau,
- 3 Thiru A. V. P. Asaithambi (*Chairman, T. T. D. C.*),
- 4 Thiru Bahirathan (K. Mahalingam),
- 5 Thiru N. M. Balasubramanyam,
- 6 Thiru V. R. Chakravarthi,
- 7 Thiru K. Cherian,
- 8 Thiru A. K. Chettiar,
- 9 Thiru K. R. Gopal,
- 10 Thiru V. Jayaraman,
- 11 Thiru W. P. A. Nagarajan,
- 12 Thiru K. S. Narasimhan,
- 13 Thiru J. G. Oak Shott,
- 14 Thiru D. N. Sharma, and
- 15 Thirumathi L. Sivamani Nadhan.

The Working Group was assisted by Four Sub-Groups constituted as follows :—

Accommodation.—

- 1 Thiru P. Ananda Rau, *Convenor*.
- 2 Thiru J. G. Oak Shott.
- 3 Thiru V. Jayaraman.
- 4 Thirumathi L. Sivamani Nadhan.

Transport : (Surface and air).—

- 1 Thiru V. R. Chakravarthi, *Convenor*.

- 2 Thiru A. V. P. Asaithambi.
- 3 Thiru K. Cherian.
- 4 Thiru K. R. Gopal.
- 5 Thiru D. N. Sharma of Indian Oil Corporation.
- 6 Thiru N. M. Balasubramanyam of Southern Railway.

Publicity and Promotion.—

- 1 Thirumathi L. Sivamani Nadhan, *Convenor*.
- 2 Thiru K. Cherian,
- 3 Thiru K. R. Gopal,
- 4 Thiru V. R. Chakravarthi,
- 5 Thiru P. Ananda Rau,
- 6 Thiru A. K. Chettiar.
- 7 Thiru K. S. Narasimhan.

General and Environmental Factors.—

- 1 Thiru P. Ananda Rau, *Convenor*.
- 2 Thiru K. Cherian.
- 3 Thiru J. G. Oak Shott.
- 4 Thirumathi L. Sivamani Nadhan.

The Task Force conducted three meetings. The Working Group conducted two meetings and its report was finalised in January 1973 by the Convenor Thiru A. S. Ahluwalia, I.A.S.

While presenting the Report Thiru Mahalingam said : The report makes an attempt to assess, on a perspective basis, the scope, the potentials and importance of Tourism in Tamil Nadu in the midst of the rapidly developing

image of Tourism in the international sphere with a view to develop Tourism in the State by providing the required infrastructural facilities for all the important Tourist area and create better attractions to both foreign and home Tourists.

Of late, Tourism has been gaining much importance in most other parts of the World and this growth is being reflected in our country and Tamil Nadu too. Even though Tamil Nadu is fortunate in possessing ancient, rich and cultural heritage all of them have not been brought to light during the past plan periods Tourism, apart from contributing as earner of foreign exchange, has a multiplier effect on employment and economic growth. It encourages art and craft workmanship. It also brings in Social understanding and unity among nationals. Above all, Tourists by visiting places of tourist interests, and participating in entertainment of local culture, Art and customs refresh their minds enjoy the days spent on Tourism and carry pleasant and happy memories to their homes.

Tamil Nadu is rich in nature's gifts—by way of enchanting mountains, flowing rivers and waterfalls, vast sea beaches and forests with accompanying wild life, Human skill exhibited in Water Reservoirs and Dam sites, parks and scenarios also add to tourist attractions. Further Tamil Nadu is noted for its ancient history and reputed Rulers as the Pallava, Chera, Chola, Pandya and Nayaks. Most of these rulers, being themselves eludite scholars and artists, were patrons of art and culture. Some of their brilliance are even now alive in the various sculptural art work in many of the ancient temples of Tamil Nadu, especially in Thanjavur district which has the largest number of ancient temples in the State.

The numerous ancient stone inscriptions found in these temple offer good opportunities for research work by scholars and historians. The Tamil culture, its philosophy and numerous ancient classics have in stone enough material to quench the thirst of research minded scholars.

Such high potentials for Tourism Development has been existing in

our midst but not getting so far the deserving importance and development from tourist angle.

The Task Force has emphasised the need for provision of necessary infrastructure facilities to all these important and inviting tourism spots and regions. Accommodation and transport play very vital role in Tourism. Hotels, lodges and restaurant catering to middle-class tourists are needed more. The Task Force has stressed the need for neat, good quality food at reasonable charge and good water as essential requirements for inviting tourists. Travel facilities have to be improved and all approach roads leading to places of tourist interests should be of all weather surface; Rail and Air facilities have also to be improved for enabling package tourists travels.

The Task Force also emphasises the need for opening out training courses for training suitable personnel to serve as guides to Tourists.

As development of tourist spots in an integrated manner is the present trend of tourism, selective spots and areas of tourist interest have to be integrated and, package tours arranged for tourist groups.

There is much to be turned out towards development of tourism in the State. Heavy capital investment is required for such works. An approximate assessment of the requirements for the perspective Plan period works out to Rs. 220 crores. The Perspective Plan makes provision for Rs. 42.5 crores. This plan outlay has to be substantially supplemented by external sources other than Union and State Governments. I am sure the Tamil Nadu Tourism Development Corporation Limited will be able to execute Tourism Development on commercial lines utilising capital advances from financial institutions and Corporations.

BENEFITS OF TOURISM

The Task Force has summarised the benefits of tourism as follows:

(a) *Contribution to the balance of payments* — Tourism could help to correct the disequilibrium of the balance of payments position. For India, the earnings from Tourism is of great value.

(b) *Development dispersal* — Tourism promotes the economic growth of underdeveloped regions of the country. The disparity of economic development between regions of different degrees of natural resources might possibly be narrowed down by exploring potential of tourism and promoting tourism. Tourism tends to distribute the development from industrial centres to undeveloped regions.

(c) *Economic aspects*. — The expenditure by the tourists becomes income for local people in one form or other and it again respend or saved. Thus, the tourists' money rotates many times as expenditure in many hands and considerable impact occurs on the economy depending on the number of times the tourists' money is respend and the multiplier effect contributing to economy.



(d) *Employment opportunities*. — India is a country with rapidly increasing population and the surplus labour population need to be engaged, tourism, being a service industry involving human labour, can influence employment opportunities and consumer goods industries in the country.

(e) *Social benefits*. — Tourism affords adequate opportunities for intermingling and understanding among people of different countries and States and also foreign tastes. It also aids promotion of national and State integration and mutual understanding. Increasing wages, paid holidays, use of cars, international seminars, incentive visits, group travels and inclusive of tours have contributed for increasing the international tourist traffic. While planning for promotion of tourism, the fact that tourists are becoming conscious of "good value for money" should be born in mind as majority of tourist belong to middle and lower middle income groups.

THE FEW WHO ZONE TO TAMILNADU AMONG



Year.	Visiting India.	Rate per cent increase.	Visiting Tamil Nadu.	Rate per cent increase.	Exchange earning (crores).
(1)	(2)	(3)	(4)	(5)	(6)
1962	1,34,360	..	12,538	..	19.62
1963	1,40,821	4.81	12,399	-1.11	20.56
1964	1,56,673	11.26	11,746	-5.27	21.59
1965	1,47,900	-5.60	15,105	28.60	22.35
1966	1,59,603	-7.91	20,370	34.86	25.63
1967	1,79,565	12.51	24,999	22.72	28.54
1968	1,88,820	5.15	25,268	1.08	33.18
1969	2,44,724	29.61	28,641	13.35	38.03
1970	2,80,821	14.75	28,735	0.33	40.38
1971	3,00,995	7.18	38,074	32.50	..
Average increase	13.7 per cent.	13.7 per cent.	..	22.61 per cent.	..

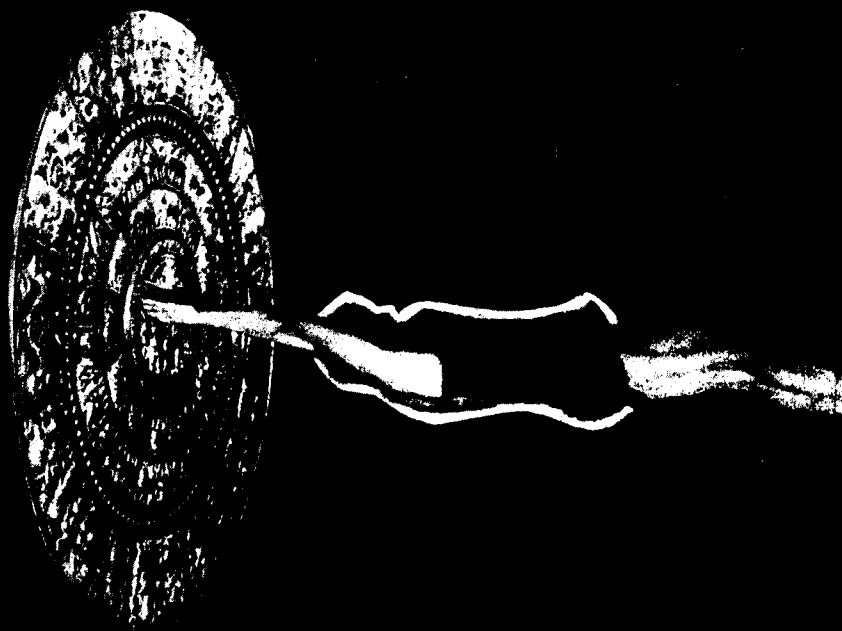
The Tourists visiting India have increased during 1962 to 1971 at an average rate of about 13.7 per cent per annum.

But the Tourist inflow in Tamil Nadu increased considerably at an average rate of 22.6 per cent per annum during the above period.

Of the Tourists visiting India, on an average 10 to 11 per cent come to Tamil Nadu. The average increase in Foreign exchange earnings works out to 11.7 per cent per annum. The above figures indicate the positive trend of increasing tourism in India.

(Source : Tourism Department.)

THE STRATEGY FOR TOURISM PROMOTION FOR TAMIL NADU



Promotional activities with their main objective to attract more foreign tourists and stimulation of domestic traffic by adequate attention to provision of necessary tourist infrastructure are to be simultaneously carried on towards tourism development in the State. These would fall under :

(1) Proper planning and co-ordination ; regulation of tourist activities and enforcement of controls ;

(2) Preservation of environmental features and beautification of tourists spots ;

(3) Eradication of irritants like beggars, touts, slums, any irksome restrictions to holiday travel ; and

(4) Incentives to estimate holiday travel.

Planning and co-ordination, policy formulation and implementation, and control and regulation are sought to be made the responsibility of the Tourism wing of the State Administration. By 1980, one million international tourists are expected to arrive in India. The domestic traffic is also fast picking up and is expected to assume gigantic proportions. To plan a proper infrastructure for this volume of traffic as well as to co-ordinate action with other departments, dealing with the various important aspects of tourism, planning like preparation of integrated development plans, landscaping, gardening and park development, hill resort development, sea beach and water course landscaping, provision of new roads, water supply, drainage, lighting and electric equipment and other basic facilities at tourist spots, it is most essential to have a proper and adequate administrative set up to cope up with the challenging task, it will be called upon to perform in the next four years.

The Present Set up

Tourism as such was a relatively unknown subject in Tamil Nadu till 1958—59 when tourist offices were set up for the first time in the State at Madurai and Ootacamund. The subject "tourism" was dealt till May 1971 as part of another department at Government level. Despite the great tourism potential of Tamil Nadu, the growth of tourism in the State has been slow. Thanks to the

recommendation of the Tourism Development Council meeting convened by the Government of India in 1966 which urged the State Governments to create separate Directorate of Tourism under a Senior officer to enable him to deal independently with other department, a separate department of Tourism was created in Tamil Nadu in May 1971 with an additional Secretary to Government, Public Department as Director of Tourism. The Tourism wing of the Secretariat-cum-Directorate consists now of one Tourism Promotion Officer and two sections, besides an Accounts section.

At the District level, the Department has Tourist Offices at Tiruchirappalli, Kanyakumari and Ootacamund, each with a Tourist Officer and a small office. These offices are intended for giving information to the tourists about places of tourists interest in and around the district, facilities and amenities available in those places in respect of accommodation, transport, sight seeing, etc. The Tourists offices also display tourism posters, photographs and publication for the benefit of the tourists. There is a tourists information counter at Madurai Railway Junction with a staff and three receptionists to assist and guide the tourists arriving by train at Madurai. A Tourists Information and Handicrafts Centre has been opened at the Air India Building, Bombay recently to cater to the needs of the foreign tourists arriving at Bombay. Proposals are afoot about for opening a similar office in New Delhi.

The Tamil Nadu Tourism Development Corporation

For looking after the various commercial aspects of Tourism, the State has set up the Tamil Nadu Tourism Development Corporation with a share capital of Rs. 50 lakhs. This is an autonomous body registered under the Companies Act and governed by a Board of Directors, consisting of both officials and non-officials. It is just over one year old and is growing from its infancy. As its activities increase and plans are implemented, it will grow into a major organisation responsible for providing amenities to the tourists.

Environmental Management

In the management of places of tourism interest the environmental aspect neglected till now is to be given the attention it deserves. Residential, industrial and commercial and such other competing uses often crop up in the vicinity of these areas adversely affecting their natural beauty and settings. Visual pollution by way of display of hoardings also reduce the appeal of these areas. Sound legislative measures will be adopted to eradicate the above defects and preserves and safeguard the places of tourists interests to ensure :

a. that all planning and development around such places is oriented to present them in a natural harmonious setting so that even the tourist

facilities are planned and located in consultation with Tourism Department.

b. that any proposal for new construction or development within a demarcated area around a place of tourist interest is first thoroughly investigated and cleared by a properly constituted authority. This would avoid any hapazard peripheral growth.

c. Well planned landscaping may be carried out in selected sites to improve the aesthetic quality of the area. The rest of the area may be left in pleasing natural conditions and where necessary through proper protection restored to natural state.

d. Care would also be taken to avoid conditions leading to soil erosion.

e. pollution-air, water and visual—in the area, must be carefully controlled to maintain clean, hygienic and pleasing environment. Adequate waste disposal arrangements should exist to ensure this.

Eradication of Irritants

Harassment of tourists by beggars, touts, etc., at shopping centres and places of tourist interest is a major problem inhibiting tourism development. As early as in 1963, based on the scientific surveys conducted by the Stanford Institute, California and other reputable Research Institutions, it was established that poverty and beggar nuisance were the most deterrant factors in the promotion of tourism



in India. The PATA (Pasific Area Travel Association) Survey report of 1968 also highlighted this fact. The Indian Institute of Public Opinion in its survey conducted in 1969 reported that 49.0 per cent tourists expressed their concern regarding dirt and poverty in India. The **Beggar Rehabilitation Scheme of the Government is a concrete and commendable step towards eliminating beggar nuisance.** However, it will take some time to eradicate beggary completely. In the meanwhile from tourism point, it is essential that special arrangements should be made to minimise the harassment caused to the tourists by beggars, touts, etc.

The Schemes

Slum dwellings constitute another serious threat to landscape and the image of the State as a tourist region. The Government of Tamil Nadu have a very comprehensive programme for slum clearance with the object of removing all the slums in the City by 1977. This will go a long way in improving the landscape and image of the Madras City in the international tourist market. In a similar manner slums in the larger cities of tourist importance such as Madurai, Tiruchirappalli, Coimbatore, Thanjavur are also being paid adequate attention. However, it has been urged that in locating slum clearance tenements in major cities like Madras, Madurai, Tiruchirappalli and at important tourist centres, the tourism planners and Town Planning authorities will be consulted to safeguard aesthetic look and skyline formations and to avoid as far as possible construction interfering with sea-beaches, scenic spots and other tourist attractions.

Making Our Promises Real.

The most fundamental requirement to ensure the future of tourism in the State is to preserve the natural environment of places of tourist importance and scenic spots like beaches, hills, water falls and lakes, monuments and other objects of cultural and historical importance. Though these are indirect measures they are of paramount importance. In Tourism promotion all that we sell after all, are promises; promises of good time and exciting experiences, aesthetic satisfaction, a holiday

in a pleasant environment, good cheer, comfort and care, a warm welcome, a glimpse into the interesting historical past of the country revealed in its monuments and sculptures, a discovery of its cultural heritage as immortalised in its temples and ancient architecture, the purity of its golden beaches and the grandeur of its mountains and so on. No raw materials are required and no products are marketed. **This is all that is "sold" which juices the tourists. But the promises made have to be kept up; broken promise leave a trail of bitter memories.** If on arrival, they find that beaches are ruined by misuse, by people the monuments are hidden from view by ugly structures of all kinds, the sanctuaries have no wild life, the lakes are silted up, the hills are denuded of trees, temples are surrounded by beggars and slums and that there is hardly a place where one can eat without fear of contamination, the loose faith in the promises and the tourist traffic dries up. Keeping up the promises brings about a boom of prosperity.

Tourism is a means of utilising one's leisure time to turn away from routines and enjoy nature and culture and re-equip one-self with a fresh mind and new energy. Within the limited time and money budgetted for tourism, the tourist should be able to feel worth, i.e., the money value of his expenditure and go with the satisfaction that he has well utilised the time and money spent on tourism. For attracting tourists, environmental sanitation and good surroundings are essential in all places of tourist interests. All places of pilgrimage and tourist interest should have satisfactory provision of toilet facilities. The basic amenities, such as water supply, toilets, etc., in places of tourist interest or pilgrim centres must be made available for the public by the local authority or the temple authorities. It is generally observed that even in places where toilet facilities for public and visitors are made available by local authorities, their proper use and maintenance calls for attention. Public baths good drinking water and wash facilities, in addition to toilet facilities are important requirements in tourist places. These facilities can be provided for use of tourists by the temple and local authorities either

free of charge or at nominal charge, the latter is desirable in the interest of better maintenance of the services.

The entrances, approaches and surroundings of the tourist spots have to be kept neat and without encroachments on the streets; the authorities concerned may have to exercise alertness on this aspect. The beggar nuisance in such areas must be avoided by effective action by the police. Unauthorised guides need be discouraged and replaced by authorised and well-trained guides appointed for the purpose. Literature and good quality souvenirs are to be put on sales by shop keepers of the locality at reasonable price. The shop-keepers of the locality should be prevented from exploiting the tourists and visitors, by insisting upon exhibiting the price list prominently in the shops. The food stuff, that is made available to the tourist, should be good and of hygienic value.

It is highly essential that the Health authorities of the area have strict control over the quality of food sold to tourists. Similar control over potable water is also necessary. The local authorities should have adequate and proper check and enforce correct pricing, standardization and hygiene to all food products. Sale of cooked food material in open manner in streets exposing to dust and flies should be prevented.

Public places like parks should be maintained properly by the local authorities to lend the landscape effect to the visitors. Wherever there is scope in the areas immediately surrounding tourist spots for rendering of landscape treatment or planting of avenues and creation of vistas, the authority (either local or temple) may develop the pleasant surroundings to attract tourists.

Historical monuments have to be preserved with proper care with boards exhibited prominently, giving full particulars of these monuments. They are of both cultured and educational value. Our country being an ancient one with considerable history behind it and quite a large number of historical and cultural monuments left as legacy and in memory of the past, proper attention has to be paid to preserve these valuable monuments to educate the future generations on history and culture of the nation.



THE TOURISM IMAGE OF TAMIL NADU

There are Tourist Offices at Madurai, Ootacamund, Tiruchirappalli and Kanyakumari. A Tourist Information Counter is functioning at Madurai Railway Junction and during season, one functions at Kodaikanal. A proposal to open Tourist Information Counters at Tiruchirappalli Railway Junction and Rameswaram is under active consideration of the Government. There is also a proposal to open a Tourist Office at Madras. A Tourist Information-cum-Handicrafts Centre has been opened by the Government in 1972 at the Air India Building, Bombay, to cater to the needs of the foreign tourists arriving at Bombay. Opening of a similar centre at New Delhi is under active consideration.

The strategy for the development of Tourism in the State in the coming years has to be so designed as to promote Tamil Nadu as an important destination for tourist region, both in the domestic and international market. In this space age, jumbo jets and the new phenomenon of charter flights have revolutionised the tourist traffic pattern. By 1980, it is estimated that about one million foreign

tourists will be visiting India. On the basis of the present trend, Tamil Nadu should expect 3,00,000 of them. The development in the sphere of internal tourism must also be taken into account. The broad approach in planning for development of tourism in Tamil Nadu should therefore aim at creating and expanding tourist facilities with a view to accommodating the anticipated tourist traffic.

Youth Hostel

The Government of India have sanctioned Rs. 3.50 lakhs for the construction of a Youth Hostel in Tamil Nadu for which the State Government provided the required land at a cost of Rs. 1.5 lakhs in the Adyar area. The work on this project is in progress.

Tourist Bungalow at Rameswaram

The Government of India sanctioned the construction of a Tourist Bungalow at Rameswaram at a cost of Rs. 6.00 lakhs for which the State Government have sanctioned Rs. 2.00 lakhs for land and laying of approach road to the building along the sea front. The

foundation for the building was laid in December 1972 and the work is likely to be completed by December 1973.

The State Government accepted the offer of the Government of India for the establishment of two Hotels and two Camping sites on the condition of providing land and other amenities at its cost. Sanction for these projects is awaited from the Centre.

Madras is one of the major international airports of India. Yet, by a policy of the Government of India, International Airlines like PAN AMERICAN, ALITALIA, Japan Airlines, TWA, etc., are not permitted to operate their flights through Madras, in spite of the fact that Madras is ideally located as a gate way of India to tourists from South-East Asia and Australia. This greatly affects tourist traffic to Tamil Nadu. No direct destination charter flights has been permitted to land at Madras. The State Government is pressing the Centre to allow foreign Airlines to fly through Madras and to build a modern terminal building for Madras Airport.



The State Government have also taken up with the Government of India the question of expanding Madurai airport and to include it in their jet plane traffic route and extend Indian Airlines Corporation's Boeing service to Madurai for the convenience of foreign tourists and business men—a repeated request of Madurai Chamber of Commerce. The cases of Kanyakumari, Rameswaram, Tirunelveli and Salem for new airports are also being pursued with the Government of India.

Aerial Rope Way To Dodabetta

Ootacamund is one of the major

hill stations of India attracting a large number of foreign and domestic tourists every year. An aerial rope way between Ootacamund and Dodabetta, the highest peak in the South in the Nilgiris, will be a major attraction. It is estimated to cost about Rs. 30 lakhs involving foreign collaboration. It will be difficult for the State Government to implement this costly scheme. Government of India does not appear to be keen on this matter which is being pursued.

While necessary infrastructure is being created side by side, steps are being taken to develop existing tourist spots and to create new attractions in the State :—

Nilgiris Complete.—As a first step for the beautification of a Tourist Centre, the Department has taken up Nilgiris. As Ootacamund, the Queen of Hill Stations, receives the largest number of tourists, it is proposed to improve, desilt and beautify the Ootacamund Lake to make it more attractive and a sum of Rs. 5 lakhs has been spent on the project.

A leading firm of architects in Madras, Messrs Prynn Abbott and Davis, have been appointed to give a plan for the beautification of Ootacamund Lake. They have submitted a report which has given us broad pointers to plan the development of this resort in a scientific and systematic manner as a recreational centre. The report is under examination.

Wax Museum.—The Government has a proposal to establish Wax Museum in Madras. For this, we first sought the assistance of Madame Tussaud's Wax Museum in London. As it is now felt that collaboration with Madame Tussaud's may not materialise, it is proposed to approach a firm in Lebanon.

Lion Safari Park

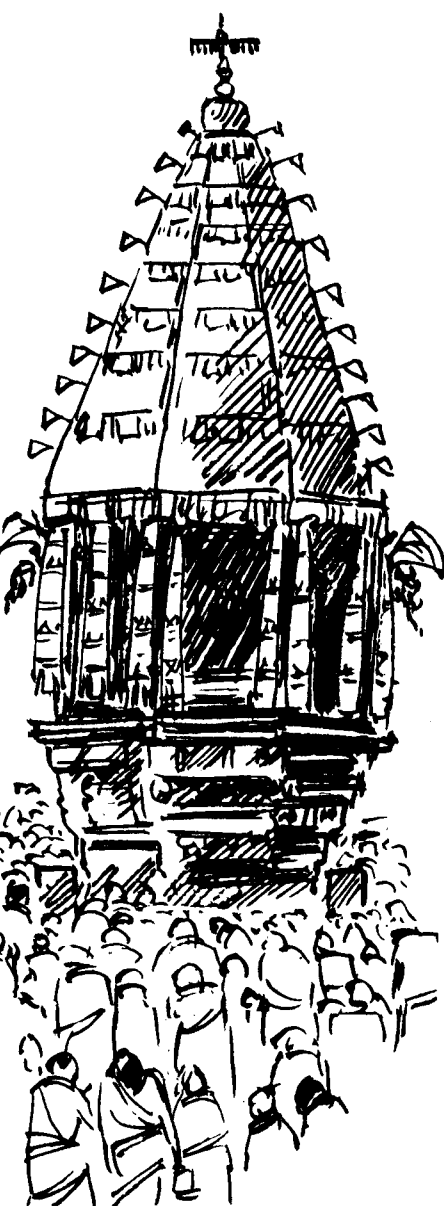
Setting up of a Lion Safari Park with the help of Government of India near Madras at Vandalur reserve forest is contemplated where lions will be introduced for the first time in Tamil Nadu for the benefit of tourists. The establishment of an amusement park at Madras is also under consideration.

The following schemes, though not implemented by the Department

of Tourism, are given here as they are tourism-oriented so that a complete picture of efforts for Tourism Development can be had.

Marina.—Rs. 3.5 lakhs has been sanctioned for beautifying Marina Beach. The Tourism Department will be closely associated with maintenance and beautification of Marina and Elliotts beaches. The Elliotts Beach area will be transferred to Tamil Nadu Tourism Development Corporation for development.

The Cooum river beautification scheme is almost complete. Pleasure boating using modern fibre glass boats has been recently introduced in Cooum. A boat house with snack bar and a swimming pool is also located at the mouth of Cooum (Public Works Department).



A grant water fountain similar to the one at Geneva, donated by the Mayor of Halle, East Germany to the Mayor of Madras has been erected in Cooum near the mouth.

Mudumalai.—A plan for the integrated development of Mudumalai-Bandipur-Wynad Wild Life Sanctuaries in co-operation with Kerala and Mysore, has been prepared and sent to Government of India (Agriculture).

Point Climere.—The State Government has also sanctioned Rs. 1.6 lakhs as a first step to develop Point Climere in Thanjavur where a bird sanctuary is located along with a deer sanctuary.

Snake Park.—A Snake Park has been developed in the Guindy Deer Park.

Beggar Rehabilitation.—Beggar nuisance is one of the main irritant factor which scares the foreign tourists. The beggar rehabilitation scheme introduced in Tamil Nadu will remove one of the major deterrent to the development of tourism in this State.

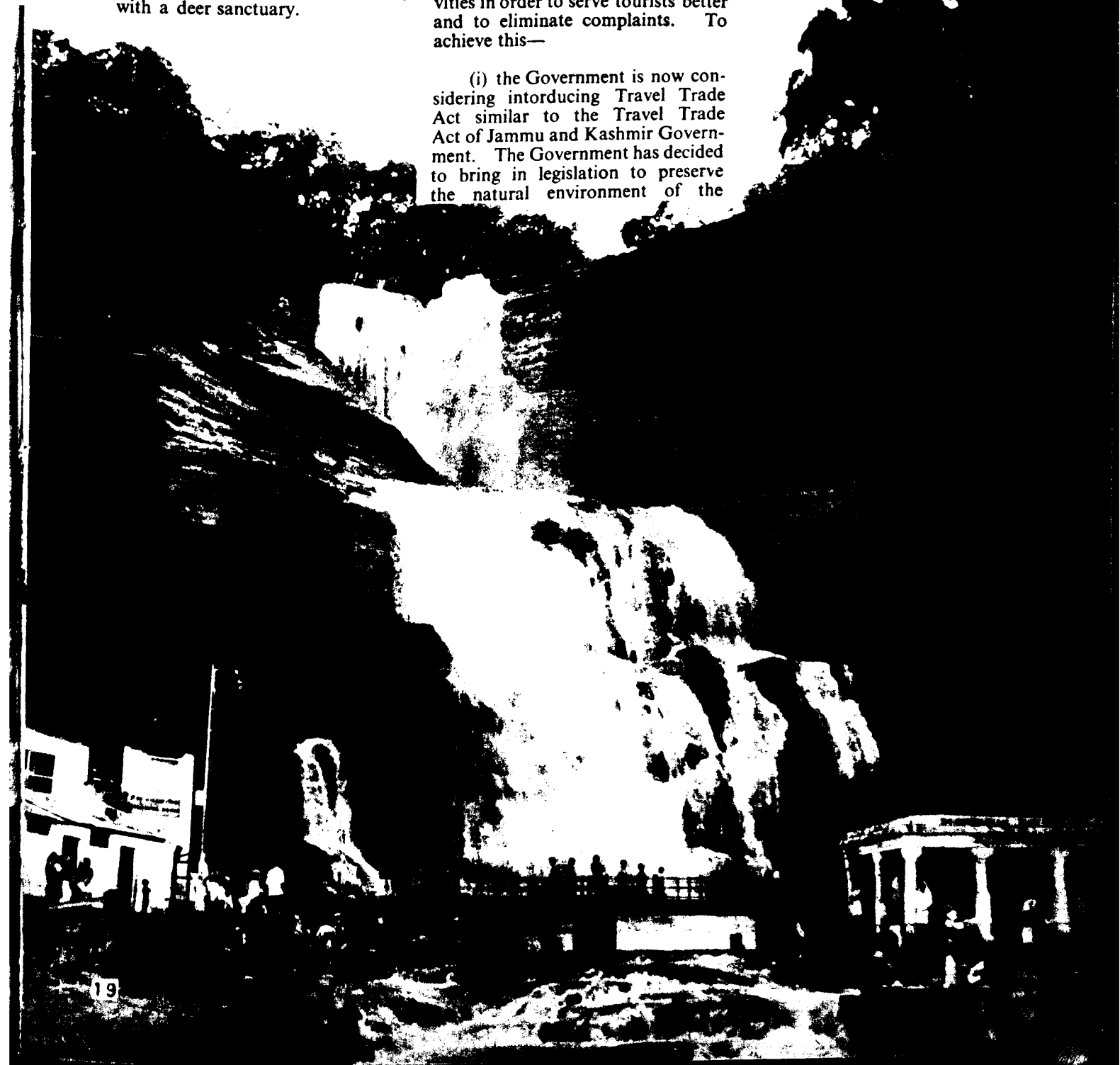
Legislation

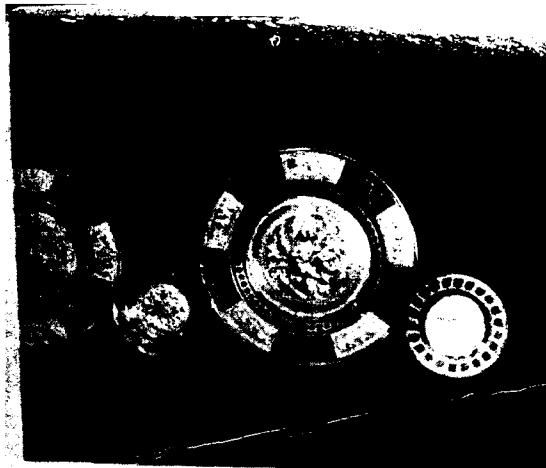
As the tourist traffic to Tamil Nadu increases steadily, it is considered that it is necessary to regulate and streamline tourist trade activities in order to serve tourists better and to eliminate complaints. To achieve this—

(i) the Government is now considering introducing Travel Trade Act similar to the Travel Trade Act of Jammu and Kashmir Government. The Government has decided to bring in legislation to preserve the natural environment of the

beach areas and tourist spots to prevent haphazard development and to avoid construction of incongruous buildings and structures. An Act has been drafted by the Department and is being examined by the Law Department.

With the present upward trend in tourist traffic, the private sector has to come forward in a big way to build up accommodation. The Department has initiated several proposals to encourage this activity :—





Assistance to Hotel Project

The Government issued a policy directive to the Tamil Nadu Industrial Investment Corporation to give loans for the construction of hotels of two star and above categories. So far, 9 projects have been cleared under this scheme.

This Government have suggested to the Government of India that it will be advisable if an amendment can be introduced in Parliament to the Industrial Development and Regulations Act, 1951 to include hotel industry among priority industries to enable the State Government to extend the incentives scheme to hotel industry also.



A proposal for supplying electricity at concessional rate to hotel industry, as in the case of other priority industries, is also under the active consideration of the Government. A decision can be taken only when the power situation in the State improves.

The Government have earmarked three sites for private entrepreneurs for construction of five star hotels at Adams Road—Government Estate, Greenways Road—Opposite to Chettinad Palace and Elliotts Beach.

A Bombay firm has submitted a proposal for the construction of a tower project including *inter alia*, a 5 Star Hotel. The economic feasibility report has been received with a request for allotment of a suitable site.

The Department of Tourism also undertakes scrutinising of economic feasibility studies for establishment of new hotel projects, advises the private entrepreneurs and recommends projects to the Tamil Nadu Industrial Investment Corporation.

Pongal Tourist Festival

With a view to attract more foreign tourists, the State is celebrating Pongal as Tourist Festival every year from 1971 with the active participation of Travel Trade. The Pongal Tourist Festival celebrated during 1973 at Madras and other Tourist centres has created a lot of interest among foreign tourists and travel agents. It is proposed to organise this festival on a grand scale

so that it can become an event of international importance attracting more and more foreign tourists.

A scheme for organising short duration cultural programme of one or one and half hour classical and folk dances thrice a week at Madras and once or twice a month during season, i.e., from November to March in Madurai on a subsidised basis in collaboration with leading hotels is being finalised for the benefit of tourists. A programme is expected to cost Rs. 1,250. The Government will subsidise 50 per cent of the loss, if any. The entrance fee will be Rs. 7 per individual. The scheme, which will be introduced at Madras and Madurai in the first instance, has been appreciated by the Central Government and recommended to other States for adoption.

The Department of Tourism has evolved a scheme for giving training to selected candidates who will work as tourist guides. Graduates alone will be eligible to apply for the course. The course will be conducted by the Government of India Tourist Office, Madras, on behalf of the State Department of Tourism. A batch of 35 candidates will be given training at a time and certificate will be issued to the successful candidates. Selected candidates will be paid a stipend of Rs. 200 a month for a period of three years including the period of training. Every tourist guide should work under the Director of Tourism for a period of three years. The scheme will be implemented during 1973-74.

In order to attract tourists, adequate publicity is a vital factor in these days of fierce competition in this field. The Government have



therefore taken the following immediate steps with a view to give wide publicity to the tourism features of the State :—

Film on Tourism.—Mr. and Mrs. Van Den Eynde of Belgium, experts in producing travel feature films, have produced a multivision presentation "From Kashmir to Kanyakumari" for the Air India, receiving world-wide appreciation. They have been commissioned again by the Government of India to produce a colour film "From Europe to India". The State Government has availed of their visit to India to retain them to produce a 16 mm. colour documentary film on tourist potential of the State for foreign publicity. The film is expected to be ready by August and will be a classic production on Tamil Nadu. The State Government have provided Rs. 41,000 for producing the documentary and for the cost of 10 copies.

The Government is also having a publicity programme to invite eminent Travel Agents and

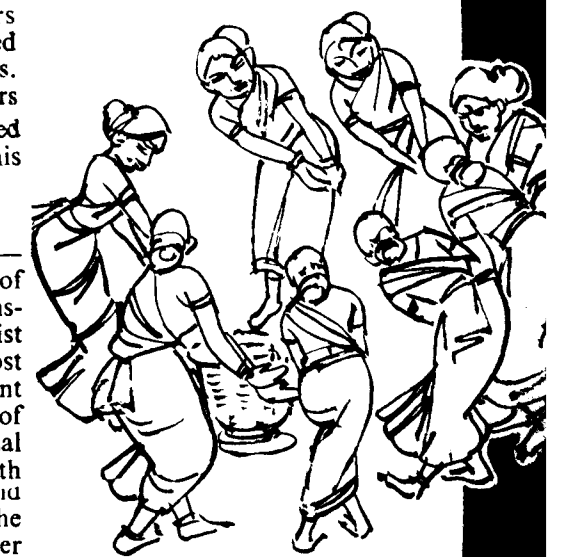
Travel Writers to visit Tamil Nadu so that the tourism potential of the State gets projected abroad. Though for the local hospitality we spend a nominal amount in rupees it secures valuable publicity in International Market without involving our foreign exchange. Such experts give a first hand report of the tourism potential of our land to foreigners through their lectures and articles. During 1972-73, Mr. and Mrs. Rossomme, Conferenciers from Belgium, who deliver illustrated talk on travel and Dr. and Mrs. William Archer of London, authors of several books, have been hosted by this Government under this programme.

Transparencies Photographs.—In order to build a good stock of lively photographs and colour transparencies for use in various tourist literature like folders, picture post cards, posters, etc., the Department has acquired a broad collection of colour transparencies. A proposal to set up a photo library with qualified personnel for taking and processing photographs to meet the needs of travel journals and other

agencies in the field of tourism is also under consideration.

The Department took steps for the production of the following inexpensive tourist brochures in 1971-72 (each 10,000 copies) for free distribution :—

(a) Madras-Mahabalipuram-Kancheepuram.



(b) Tiruchirappalli-Thanjavur-Madurai-Rameswaram.

(c) Hill Stations of Tamil Nadu.

The demand for these inserts from other States was so great that they have been exhausted and steps have been taken to reprint them.

(d) Tourist Guide Map folders on Tamil Nadu and Madras City (each 25,000 copies) have been produced in 1971-72 and they are being sold to tourists at a subsidised rate of 25 paise per copy.

(e) Seventeen multi-colour picture post cards on important places of tourist attraction have been printed in 1972-73 and distributed to the visitors to the Tamil Nadu Pavilion at the Asian Trade Fair and also to the tourists during Pongal Festival, 1973. A brochure captioned "Pongal in Tamil Nadu" 20,000 copies and two multi-colour posters each 10,000 copies were brought out during 1972-73 for the Pongal Tourist Festival, 1973 for distribution all over India and abroad.

(f) The work of collecting materials for comprehensive Tourist Directory on Tamil Nadu has been taken up and it is proposed to bring out the Directory shortly.

THE MANY SHAPES A KANCHI SAREE TAKES

Silk handloom fabrics catch the fancy of most visitors to Tamil Nadu. The silk comes in ravishing, but contrasting colours. The contrast comes from a special technique adopted on the weaving loom. The contrasting colour threads are passed individually through each other to make up the body of the cloth and its border. Hence hand-loom is the most favoured implement for weaving the famous silk sarees. Kanchipuram is one of the few centres in Tamil Nadu where these contrasting coloured sarees and stoles are made. At Fashion parades, however the homely silk saree is shown its adaptability for different kinds of wear suitable to tastes other than the South Indian.



Tamil nadu Tourism Development Corporation Launched



With a view to promoting Tourism on commercial lines the Government created a Public Sector Undertaking on 1st July 1971 with an authorised share capital of Rs. 50 lakhs.

The main objective of the Corporation is to start, operate and promote establishments, undertakings, enterprises of any description which, in the opinion of the Corporation, are likely to facilitate or accelerate the development of Tourism in Tamil Nadu. As accommodation and transport are the two major factors for tourism development, the Corporation will necessarily concentrate on their development.

The Corporation took over six Tourist Bungalows run by the Government at Tiruchirappalli, Madurai, Ootacamund, Kanyakumari, Tiruchendur and Cape Hotel at Kanyakumari.

At the time of the formation of the Corporation, these Tourist Bungalows in the course of one year and six months the Corporation has increased its bed strength to 540 beds.

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New Tourist Bungalow at Kodaikanal

It has been a felt need of the tourists for a long time to have a Tourist Bungalow at Kodaikanal on the pattern of Ootacamund.

The Tamil Nadu Tourism Development Corporation Limited therefore acquired a Tourist Bungalow Complex at Kodaikanal from the Y.M.C.A. at a cost of Rs. 4.5 lakhs. This bungalow was thrown open immediately for the use of the tourists during the summer season, 1972.

Tourist Cottages at Coonoor

The Corporation took over eight Tourist Cottages built by the Government at a cost of Rs. 2 lakhs.

These cottages were popular with family groups, as they have an attached Kitchenette during the summer of 1972.

The Corporation took over a new Tourist Bungalow at Yercaud built by the Government at a cost of Rs. 2 lakhs. It was inaugurated on 20th October 1972 by His Excellency, the Governor of Tamil Nadu.

NEW LOOK TO THE TOURISM BUNGALOWS

To run the Tourist Bungalows on a commercial basis as a matter of policy, the Corporation has placed catering technologists in-charge of the Tourist Bungalows. Catering has been introduced in all the Tourist Bungalows for the convenience of the boarders. The Corporation has also been giving a modern look to all the Tourist Bungalows by improving the decor and providing better facilities and modern amenities like Channel music, running hot water, soap, towel, bed coffee, etc. Foreign tourists now patronise our Tourist Bungalows in large numbers, besides the domestic tourists.

The Corporation has also acquired ten independent Tourist Cottages at the Golf Links at Ootacamund built by the Housing Board. These cottages have been offered to the tourists from April 1973.

RATIONALISATION OF TARIFF

Having given a new look, the Corporation has rationalised the tariff structure in all the Tourist Bungalows in view of the high cost of materials and service.

EXPANSION OF EXISTING UNITS

Encouraged by the growth of tourist traffic, the Corporation has initiated action to expand the existing accommodation at the following Tourist Bungalows :—

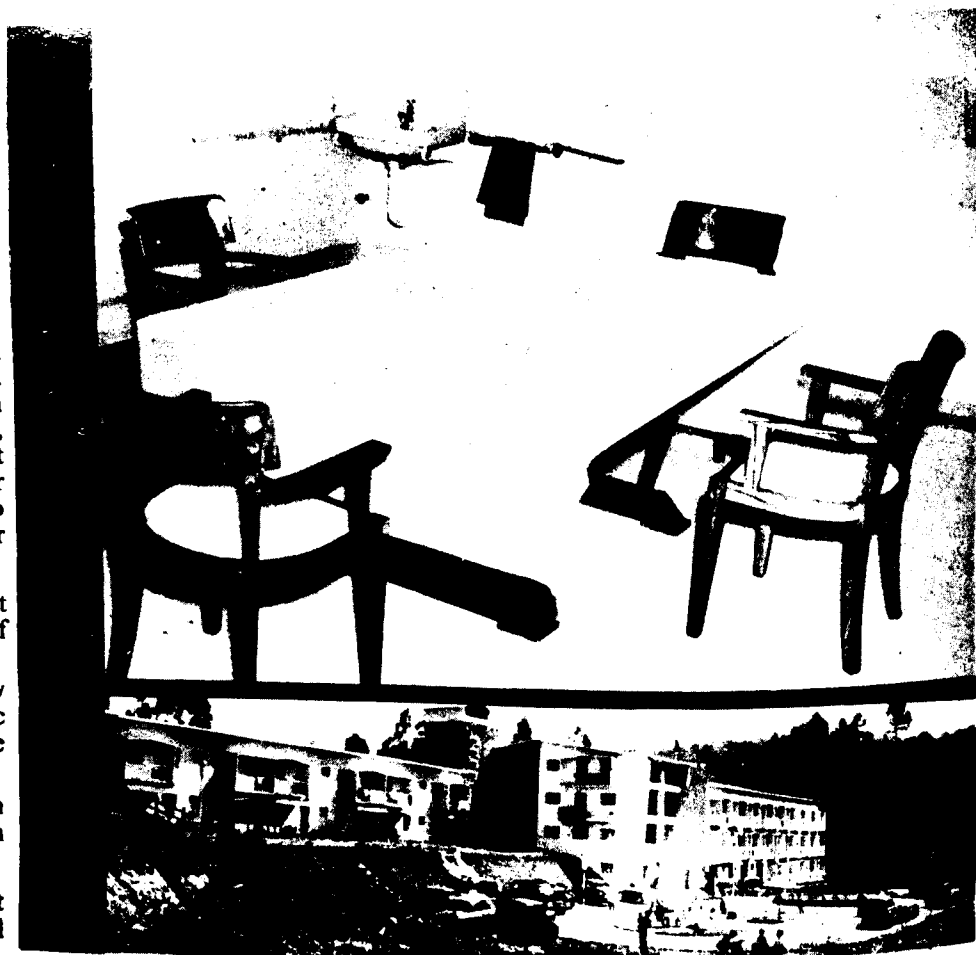
1. *Ooty*.—The Corporation has completed an additional block in the Tourist Bungalow, Ootacamund with 98 beds. This was thrown open to the tourists during April, 1973. The Tourist Bungalow at Ootacamund will have facilities for conferences and seminars and also dormitory type accommodation for large groups.

Additional block at Tourist Bungalow, Madurai at a cost of Rs. 2 lakhs is under construction.

New projects.—Keeping in view the growth forecast of tourist traffic the Corporation is taking up the following projects :—

Construction of a new Beach Resort Complex at Mamallapuram at a cost of Rs. 41 lakhs.

Construction of new Tourist Bungalow Complex at Hogenakkal at a cost of Rs. 9.5 lakhs. Besides, the Corporation proposes to construct a Tourist Bungalow Complex at all District Headquarters and identified Tourist Centres (where traffic is already established) like Chidambaram, Courtallam, Nagapattinam, Tuticorin, etc. Action has already been initiated to acquire suitable lands at these places in District Headquarters.



CONDUCTED TOURS

The Corporation has, to begin with, acquired two luxury coaches for operating conducted tours. A choice of the following two conducted tours is being offered to the tourists :—

Tour No. 1.—Madras-Kancheepuram-Tirukalikundram-Mamallapuram-Vedanthangal (during season)—Madras.

Tour No. 2.—City sight-seeing in and around Madras. Besides regular Package Tours are conducted on two day and seven day trips.

During the summer season of 1972, the Corporation organised special conducted tours at the Nilgiris.

The coaches are being given on private hire to the Travel Agencies and other hoteliers for the use of foreign and home tourists.

The Corporation has taken over the Lake at Ootacamund to exploit it commercially. Action has been initiated to modernise the Boating service with fibre glass boats, etc. The Corporation is also running a Cafeteria at the Boat House at Ootacamund.

Action has been initiated for the opening of a Souvenir Shop at Anna Square on Marina. It is proposed to sell Souvenirs, Handicrafts, etc., manufactured in Tamil Nadu.

The Corporation is actively promoting itself in all the tourism promotion activities with the Travel Trade.

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CAN
WHAT WE DO
ABOUT HOTEL
ACCOMMODATION?

More than anything a tourist basically requires a comfortable place to stay at a reasonable price. The type and quality of accommodation influences directly the period of stay of tourists. A clean toilet and a comfortable bed are essential for the tourist to relax and reflect on what he has seen and enjoyed during the day. There can be no growth of tourism unless accommodation at various levels, both for international and home tourists, is assured so that agencies that handle tourist trade can plan and organise with confidence visits of large groups from abroad and home. The changing trends in tourist traffic demand more number of middle class accommodation rather than high class and luxury type. A general tendency among tourists to travel wide and see more places of interest and spend more money on purchases than to pay high prices for top class hotels (as five and four starred hotels) is fast developing. Tourist desire to spend most of their time in visiting places and keeping themselves engaged in enjoying the rare opportunity of their visits and mostly they return to hotels only for their main requirements—accommodation and good food. Planning future requirements of accommodation is therefore to be proceeded with reasonable caution. The costs of construction are such that, if too much accommodation is built, units will operate at occupancy factors which will not furnish a good return on the investment. Conversely, inadequate accommodation will affect growth of group-tourism. Growth of traffic and expansion of accommodation are closely interrelated. Hence accommodation has to be built first to provide sure and sound base without which it is not possible to advertise and "sell" a place in a big way. A certain amount of risk has to be faced at initial stages and unless we plan boldly and embark on fairly large scale construction programmes, it would not be possible for tourism to develop in the near future on the desired lines and we would not be able to take full advantage of the world boom in tourism predicted in the late seventies.

The New Developments

There are various new developments in tourism that have added a new dimension to the sector and lend support to the above approach. Amongst these is the technological advancement in air travel with the introduction of Jumbo Jets making it possible to transport large groups at almost unbelievably low fares. This will bring hordes of travellers from all over the world to be visited places and to mingle with people at all levels. They will differ from the conventional type of tourists—aristocratic or sophisticated. Bulk of the people travelling by Jumbo jets would be low-spending tourists operating on rather tight budgets but would look for comfort but not necessarily the starred category. Another important development is at the home front. With the increase in the per capita income and the general level of literacy and with greater awareness and consciousness among the people of their national heritage the desire to travel and see places is becoming more and more pronounced. Domestic tourism will form the foundation and provide the basis on which a proper and comprehensive frame work of infrastructure to the tourism industry can be developed.

The available accommodation in the State is quite inadequate. Even the State capital of Tamil Nadu, Madras is not adequately equipped with required number and type of hotels to cater to both foreign and domestic tourists and visitors. Standard hotels are non-existent in most of the tourist centres of the State and this indirectly influences adversely the flow of tourist traffic

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Music by AIR Artistes.

CAFE TOPAZ

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KHEDDA BAR

Plush luxurious and with an atmosphere all its own.

KABAB-E-Q

The pool-side barbecue for delicious Roomalies and Kababs, open every evening from 7-00 p.m. to 11.00 p.m. except Tuesdays.

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to these centres. Top class hotels are essential to cater to the needs of important persons and foreigners of special category, and these have necessarily to be located in major cities such as Madras, Coimbatore, Madurai, Tiruchirappalli, Thanjavur, Salem and also few hill Stations such as Ootacamund and Kodaikanal but such high category hotels may not be economically feasible in smaller towns. But hotels to cater to the needs of middle class tourists are required in large numbers in all tourist destinations. Most of the foreigners of the present day who visit our country prefer to take to Indian way of living and taste Indian type of food, relishing the change from their routine.

There are a limited number of tourist bungalows, Tourist Homes, Rest Houses, Chatrams, Dharmasalas and dormitories located in some of the tourist centres but they are inadequate to meet the demands of increasing tourists. Cities like Madurai, Tiruchirappalli, Coimbatore, Salem and Thanjavur are busy with visitros all through the year.

September when the waterfalls flow is full and climate is attractive. Even among the important tourist stations there is no proper arrangement of adequate accommodation facility to meet the growing demand. Attractive hill resorts such as Sheveroy and Anamalais do not gain the deserved popularity and use, mainly because of lack of adequate hotel facilities for the tourists.

Often, the Travellers Bungalows maintained by the State Government Departments such as Public Works, Highways, Forest as also by the respective Local bodies, are not available for tourist occupation as mostly they are to serve as Inspection Bungalows with priority to Government Officials on inspection duty. The existing few Dharmasalas and Chatrams (endowed residential accommodation provided by Charitable Institutions or philanthropists) in some of the ancient pilgrim centres are not modern to satisfy the needs of even the present day home tourists and their maintenance also deserve improvements.

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In the case of metropolitan cities of Delhi, Bombay, Agra, Calcutta and Madras is likely to increase very fast shortly, the significant reason for such huge share of tourist traffic in these cities is primarily the nature and character of these cities.

These metropolitan cities are big business centres, venues of conferences and over and above are general centres of international transit. Normally tourists from all parts of the world visit these major cities on account of these cities offering attractions of tourists interests, commercial interests and international sports. Other tourist centres mostly have tourist rush only during the peak seasons—as for instance, all hill stations or scenic places attract tourists during summer seasons. Besides these major cities are also noted for their historical and cultural values, which again attract tourists.

More realistic

From considerations of cost, which has an impact on tourist, it is



Indian Tourist Centres.

Pilgrim places like Palni, Tiruchendur, Sankarankoil, Rameswaram, Mayuram, Kumbakonam, Srirangam, Tiruvannamalai, Tiruttani and Chidambaram are faced with large collection of pilgrims and tourists during festival occasions even though the festivals are seasonal. Hill resorts like Ootacamund and Kodaikanal have accommodation facilities during summer season; when there is heavy rush of people. Courtallam too gets crowded during the seasonal period of June to

On an analysis it is observed that Delhi tops the list of tourist centres in India; Bombay ranks the second; Agra occupies the third rank; Calcutta and Madras form the fourth and fifth respectively. The hotel accommodation in different tourist centres have been categorised into star system, on the basis of the location of the hotel amenities and services it offers to the tourists. The tourist traffic

necessary to provide cheaper hotel accommodation for the bulk of tourists who belong to those taking holiday tours. Over 50 per cent of the tourists visit India on tourism/holiday purpose and it will be more realistic to provide adequate hotel accommodation on reasonable charges to these tourists to be within their economical reach.

Due to infrastructure costs, it may not be possible to provide hotel accommodation on a scale as required economically in these

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places. The solution for such cases lies in a spatial distribution for all the tourist centres. This can be effected by clustering around a "centre city or town"—where adequate infrastructure exists—grouping of different spots has to be effected in such a manner that each centre is accessible from the "centre city or town" by means of adequate transport facilities.

The recently formed Tamil Nadu Tourism Development Corporation Limited, has, at its first phase, taken over the Tourist Bungalows at Ootacamund, Tiruchirappalli, Madurai, Kanyakumari and Tiruchendur and also the Cape Hotel at Kanyakumari. The Corporation is on the move to construct new tourist bungalows at Hogenakkal and Mahabalipuram and also to improve the existing tourist bungalows at Ootacamund and other places. It has opened a new tourist cottage complex in Kodaikanal and it has an ambitious programme of construction of Tourist Bungalows at all District Headquarters and important tourist centres viz Tirunelveli, Courtallam, Madurai, Tiruchirappalli, Nagapattinam, Chidambaram, Cuddalore, Kancheepuram, Mahabalipuram, Vellore, Salem, Dharmapuri, Hogenakkal and Coimbatore at an approximate cost of Rs. 131.50 lakhs. Cottages for tourists have been constructed in Ootacamund, Coonoor and Kodaikanal during last year and these are gaining popularity.

As recommended by the Working Group, the types of accommodation required can be categorised as follows :—

(a) suitable for high-spending foreign tourists and affluent home tourists. This will be in 3 to 5 star hotels.

(b) suitable for low budget foreign tourists and middle class home tourists. This will comprise one and two star hotels and also comfortable, neat unstarred units having all the modern amenities.

(c) suitable for mass traffic like groups of students, agriculturists, industrial workers (mainly domestic and to some extent foreign). This will be of the Dharmasala, Dormi-

tory and Youth hostel type charging a low tariff and providing just the bare minimum facilities.

It is very difficult to estimate the accommodation needs of the domestic traffic in tourism. Daily passenger arrivals by road and rail at Madras, Madurai, Coimbatore, Tiruchirappalli, Salem, Thanjavur, Rameswaram, Kanyakumari—the major pilgrim and tourist centres—may be taken as tentative indication of inter-state domestic traffic. It is estimated that 75,000

in the State. On further assuming that only 10 per cent will require overnight accommodation and other facilities in hotels and similar establishments, three million people will have to be provided with accommodation and other facilities.

For enabling accommodation for large groups of tourists, it should be made possible to utilise the existing Kalyanamantapams in major cities and towns for such tourists at nominal rates; these Kalyana-



persons arrive at Madras every day through various modes of transport. Considering the other places as a whole we may assume a figure of 75,000 arrival daily, this makes a total of 1.50 lakhs arrivals daily

mantapams are to be well equipped with sanitary arrangements, good and adequate water essentially. At interior tourist spots where no such large accommodation could be immediately made available tourist

camp facilities such as tents, and sanitary facilities can be provided.

The working group on Tourism has recommended as follows :—

It may therefore assume for the purpose of the assessment that the volume of tourist traffic requiring facilities for overnight stay in Tamil Nadu by 1984 would be not less than 2 million domestic and three lakhs foreign tourists.

The requirement of beds for this traffic could be worked out as follows :—

i.e. Dormitory and Hostel type of accommodation. The total financial outlay would therefore be —

	(RUPEES IN CRORES.)
Category I	17.5
Category II	7.5
Category III	50.0
	75.0

For the three lakhs foreign tourists, the requirement would be 10,000 in the starred category assuming an average stay of one week for each tourist. Of these, 5,000 will be in first category, i.e., 3 to 5 stars. The remaining 5,000 could be in the second category, i.e., 2 stars and below. No provision is made for them in the third category, i.e., Dormitory or Dharmasala type as these requirements, if any, can be met out of the accommodation planned for the domestic traffic under this category.

The Home Tourists

As regards, 3 million domestic tourists, the number of beds required could be put at roughly 50,000 assuming an average stay of one week. Of these 10,000 will be in the low-starred or unstarred category providing, however, all modern facilities at a reasonable tariff. The balance 40,000 will have to be in the third category, i.e. Dormitory, Dharmasala and Youth Hostel type, as the bulk of the domestic traffic would comprise the lower middle class, student groups and industrial workers. Some accommodation would be required in the three star and above categories but no separate provision need be made for this, as it would be taken care of under the corresponding provision for foreign tourists.

The financial implications of these could be worked out at an average cost of Rs. 35,000 per bed for three stars and above, Rs.15,000 for two stars and below and Rs. 5,000 for the third category.



TRAINING FOR HOTEL INDUSTRY



EXISTING HOTEL ACCOMMODATION

Serial number, name of the hotel and town.	Number of beds.	Serial number, name of the hotel and town.	Number of beds.
EXISTING HOTELS.			
Category A and above.			
1 Hotel Imperial, Madras	112	7 Hotel Aristo, Tiruchirappalli	35
2 Carlton Hotel, Kodaikanal	80	8 Tourist Hotel, Madras	32
3 Hotel Connemara, Madras	140	9 Hotel Arun, Madras	78
4 Hotel Dasaprakash, Madras	152	10 Hotel Madras International, Madras	48
5 Hotel Ashoka, Madras	176	11 Hotel Apollo, Madras	34
6 Hampton Hotel, Coonoor	65	12 Travellers' Lodge, Kancheepuram	4
7 Savoy Hotel, Nilgiris	70	13 Travellers' Lodge, Madurai	14
8 Woodlands Hotel, Madras	271	14 Travellers' Lodge, Tiruchirappalli	6
9 Pandyan Hotel, Madurai	114	15 Travellers' Lodge, Thanjavur	6
10 Hotel Savera, Madras	190	16 Hotel Dasaprakash, Ootacamund	200
11 Hotel Victoria, Madras	70	17 Everest Boarding and Lodging, Madras	140
12 Hotel Ganpat, Madras	6	18 Gupta's Ajanta Hotel, Madras	107
13 Hotel Palmgrove, Madras	128	19 Nellai Lodge, Tirunelveli	80
14 Hotel Mayfair, Madras	44	20 Hotel Guru, Coimbatore	101
15* Veeumsees Silver Sands, Mamallapuram. }	69	21 Tourist Home, Madras	49
16 Travellers' Lodge, Mamallapuram .. }	56	22 Udipi Home, Madras	110
Total	1,743	23 Hotel Hari Nivas, Madras	63
*Seaside resorts.			
Category B and above.			
1 Ashby Hotel, Tiruchirappalli	21	24 Geetha Hotel, Madras	65
2 Hotel Dwaraka, Salem	47	25 Hotel Alankar, Coimbatore	94
3 Hotel Oceanic, Madras	80	26 Hotel Garden, Madras	11
4 Queen's Hotel, Madras	54	27 Hotel Sri Durga, Madras	63
5 Ritz Hotel, Nilgiris	52	28 Hotel Swagath, Madras	71
6 Hotel Claridges, Madras	88	29 Hotel Visharam, Madras	38
Total	1,490	30 Lalitha's Lodge, Madras	30
		31 Hotel Ramprasad, Madras	56
		32 Hotel Aswathi, Madras	24
		33 Hotel Shreilekha, Madras	119
		Total	1,490

NEW PROJECTS (Planned/under construction).

Serial number, name of the hotel and town.	Number of beds.
(1) Category A.	(2)
1 Adyar Gate Hotel, Madras	250
2 Hotel Taj Coromandel, Madras	450
3 Hotel Air India, Madras	335
4 Hotel Oberoi, Madras	350
5 Hotel Atlantic, Madras	150
6 Hotel Select, Salem	76
7 B. D. V's. Hotel, Mamallapuram	20 (Since opened)
8 Hotel Sudarshan International, Madras	75
9 Hotel Eссор, Madras	500

NEW PROJECTS (Planned/under construction)—cont.

Serial number name of the hotel and town.	Number of beds.
(1)	(2)
10 Hotel Mullai, Madras	150
11 SAS Hotel, Madras	290
12 Hotel Ganpat, Madras	85
Total	2,731
Category B.	
1 Tamil Nadu Tourism Development Corporation Limited at various centres.	1,168
2 Youth Hostel, Madras	47
3 Tourist Bungalow, Rameshwaram	48
Total	1,263

<i>Existing.</i>				<i>New Projects.</i>				
				<i>Private</i>	<i>Public</i>	<i>Total.</i>		
				<i>Sector.</i>	<i>Sector.</i>			
				<i>Sector.</i>	<i>Sector.</i>	<i>Total.</i>		
Category A	..	..	1,687	56	1,743	2,731	..	2,731
Category B	..	..	1,460	418	1,878	..	1,263	1,263
Grand total	..	..	3,147	474	3,621	2,731	1,263	3,994

LOW COST BABY FOOD FROM COIMBATORE

A ready to serve infant weaning food mixture has been developed by Dr. Rajammal P. Devadas, Principal of Sri Avinashilingam Home Science College for Women, Coimbatore.

This low cost infant weaning food was developed out of indigenous vegetable food sources and its efficacy has been evaluated as a weaning food in improving the nutritional status of infants 6 months—3 years of age.

As a first step in this research, surveys were conducted to gather information on the prevailing weaning practices and locally used protein rich foods in Coimbatore district. Based on the information collected, six ready to serve

infant weaning foods were formulated utilising the cereals (millets): cholam, ragi, or maize, one pulse—greengram dhal or bengalgram dhal, groundnuts and jaggery. All the six food mixtures thus developed were found to be good in protein quality. Two hundred infants from two rural communities namely Perianaickenpalayam and Jothipuram of the Perianaickenpalayam Block were fed with maize greengram mixture by Miss. Officer. A group of 50 children from the same area with a comparable socio-economic background but did not receive the supplement were also selected as controls. Eighty gram of the infant weaning food mixture per day per child supplying 305 calories and 11.46 g. of protein at a cost 10 paise were

given to the selected children for a period of 12 months for 6 days in the week.

The nutritional status of the selected children was evaluated in terms of increments in heights, weights haemoglobin levels and clinical picture. The mean increase in the height of the children who received the mixture was 5.93 c.m. for the year as compared to the 2.63 c.m. registered by children in the control group. The mean increase in the weight of the children who received the food mixture was 2.15 kg. for the year whereas that of the control group was 1.19 kg. Thus it is evident that a low cost indigenous food mixture can help in the nutritional improvement of the children by supplying extra and protein.

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TOURISM AND HOTEL INDUSTRY

By

A. V. Kuppaswami, Principal, Institute of Catering Technology and Applied Nutrition.



The realisation of the importance of tourism and its profit making possibilities have dawned much earlier in the west than in countries like India. Many nations after the World War II have wiped out their trade deficits and over came their adverse foreign exchange position by developing tourism. The potentiality of tourism as an industry can be seen by the fact that countries like Switzerland and Spain owe their affluence to their revenue got by tourism.

The tourism industry is an export industry and it ranks above all other export industries and is unique by itself. It earns large sums of foreign exchange without actually exporting any material goods. It is an invisible form of export. This is the only export trade which brings returns without any sacrifice on the part of the exporting country. In this industry no heavy investment is needed.

Tourism can aptly be described as a group of industries rather than a single industry. This group includes aviation, shipping, other forms of transport, hotels, handicrafts, etc. The growth and development of these industries as well as a few other subsidiary industries are closely linked to tourism. If tourism flourishes in any country, it automatically means that all these allied industries are thriving well.

Of the major industries closely connected to tourism is the hotel industry. Our country got into the tourism map rather late and hence the development of hotel industries also has come rather late. Till very recently the progress of the hotel industry had been only in the private sector. But after the achievement of independence in 1947, with the increase in international traffic, the hotel industry had to increase its accommodation and facilities. Especially during the past one decade the progress made by the hotel industry is very remarkable. A good many big and luxurious hotels were constructed especially in the major cities like Bombay, Delhi, Calcutta and Madras.

In the next two or three years it is expected that Madras will have at least two 5-star hotels to cope with the demand of the tourist traffic, apart from the numerous hotels to cater to the middle income groups. The Tourism Development Corporation of India came into being and has under its control a chain of hotels and tourist homes. To supplement the need, the Tamil Nadu Tourism Development Corporation started tourist homes in most of the places of tourist interest and have also plans to construct a luxurious hotel under its control in a centrally located place in Madras.

To meet the demands of these luxury hotels, tourist homes, as also Airlines, and shipping Catering service, the Institute of Catering Technology at Madras, Bombay, Delhi and Calcutta are training candidates both for the managerial and supervisory cadre as well as for the different trade connected with the hotel industry such as Cookery, Bakery and Confectionery, Reception, Restaurant and Counter Service, Housekeeping, etc. The demand for the trained personnel in this industry has gone so much that the Institutes are not able to cope up with the same and it is

expected that with increased facilities these Institutes should be in a position to meet the demand in due course.

BETTER TYPES

FOR INDUSTRY

It is obvious that no industry can sustain its growth rate unless it can draw upon a reservoir of trained manpower capable of running the establishments successfully. It is significant that the training facilities available in our country have been expanding rapidly. Apart from the four major training institutes located in Delhi, Calcutta, Bombay and Madras, there are six craft institutes which train persons for skilled jobs such as cooks, waiters, etc. In addition, the big hotels have their own training establishments.

There is also a major change with regard to the type of people who enter the profession. In the past only a limited number of persons entered the industry because there was little prospect of making a permanent career, the opportunities for promotion being extremely limited. The establishment of a large number of new hotels has given a new entrant a steadily expanding opportunity with vast scope for improving his prospects, with the result that young persons are getting into it with the full confidence that they would be able to end their career with a substantial amount of salary comparable to what can be earned elsewhere. This opening up of the vista of opportunity has imparted greater stability with regard to career opportunities in the catering industry. The hotel industry at the moment is on the threshold of a phenomenal expansion, and if this rate of expansion continues for another three or four years, the industry would reach the requirements of the tourist traffic as estimated in official reports. *

HOTEL DĀSAPRAKĀSH

MADRAS - 600084
Grams : DASPRAKASH
Phone : 661111
Telex : 041/637

HOTEL DĀSAPRAKĀSH

MYSORE - 1
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Phone : 22821

HOTEL DĀSAPRAKĀSH

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HOTELS-HOUSEWIVES OF NATION

By
*R. RAMACHANDRAN

The Hotel Industry is to the Nation what a housewife is to a happy home. This is especially so in a country, which has launched a big scheme to promote tourism.

The analogy is quite apt to the Indian conditions. We have always been a nation of kind hosts. We have never turned away any visitor without entertaining him to the best of our ability and resources.

It has been our social tradition that the husband goes out for work and toils all day and whatever he brings home is pleasantly accepted by the wife and spent in such a way that maximum satisfaction is obtained. Guests can be entertained only with the unstinted co-operation of the housewife.

Receiving guests and sending them back with happy memories and the part played by the lady of the house in this regard have been extolled in many of our literature.

If hotels are the housewives of the nation, the travel agents are the husbands. They travel all over the world, often under trying circumstances, facing difficulties and working against heavy competition, in search of potential tourists. And when the tourists reach our country, the hotels have to play an important role in sustaining their enjoyment throughout their stay.

Of course there are other factors also for successful development of tourism. But the role of the hotel industry is a significant one.

Now tourism has been accepted as an important industry by all countries without exception. Even the materialistic-minded America and Japan have come to realise its economic aspects. This is one of the most human enterprises undertaken singly and in the mass, recognised as the world's greatest industry with the biggest turnover in money in the history of civilised society. From arrival to departure, a tourist gives business to carriers, hoteliers, shop-keepers, jewellers and many others.



Dr. Clement of the Department of Commerce of the U.S., while referring to the tourist areas of the Pacific and the Far East, recently pointed out that every 1,000 dollars invested by a tourist, the break-up was as follows :—

250 for accommodation
320 for food and drink
250 for shopping
100 for entertainment
50 for local transport, and
30 for miscellaneous items.

This shows that the Lion's share is taken by the hotel industry in the earnings of tourism. And so

the responsibility of hotels is all the more greater in fulfilling the great expectations created in the minds of the tourists by Travel Agents. In a *strange land* the hotels must serve as a home for the tourists away from home. The tourist gets the first impression of the host country from the way he is received and treated in the hotel he has chosen to stay. He wanders about all day to see as much as available in as short a time as possible and when he returns to his place of stay for rest, almost exhausted, he expects a refreshing bath, sumptuous food (to which he is accustomed and also to varieties and specialities which may not be available in his own country) and a clean and comfortable bed.

Accent on cheer and cleanliness.

All the tourists may not be after luxuries, but every one of them will insist on maximum comforts at minimum costs, good food and courteous service and cleanliness. If these are not available, the tourist will think of packing off for some other country even on the very first day of his arrival.

So the stress need not be on starred hotels only. Travellers' Lodges and tourist homes, modestly



35* Managing Director, Asian Travels (I) Private Limited. Director, Tamil Nadu Tourism Development Corporation. Chairman, Travel Agents Association of India, Southern Region.

priced, neatly kept and offering service with a smile are more important and the attention must be focussed on these aspects while sanctioning schemes for building new hotels.

It is learnt, I wish it is wrong, that landing points of various international airlines in India are linked with the landing points given to Air India in their respective countries. In the wider inte-

There should be concentrated regional action wherever it is needed instead of duplicating efforts.

The Second need is for top and middle management to understand the "Philosophy of pleasure

Silversands is used by major tour operators of Europe.



Can Air India help the South ?

The hotels which we think very big in South Indian towns are perhaps of four and less starred categories only.

The reason for this pitiable situation is perhaps because only a fraction—about 10 per cent—of the tourists coming to India are attracted towards South in spite of the fact that this region is full of places of tourist importance—beauty spots and centres of archeological and religious significance, more than the rest of India. This gold mine is left not properly exploited for reasons only known to people at the helm of affairs. Of course, of late, there seems to be some activity in this direction, but not of the magnitude the situation demands.

One of the known reasons for this low development is the lack of proper air connections. More international airlines must touch Madras and other Southern Cities, if the country is to take full advantage of the tourist potential in this part of the country.

rests of the country's economy, Air India should evince greater interest getting more international flights touching the South until such time we become strong in our economy. Indian Airlines also should improve their services so as to instill confidence in the foreign tourists that they can keep up their schedule and don't get stranded. Standby aircrafts are important for this region to avoid frequent cancellation of flights, causing avoidable annoyance to tourists in a hurry.

When these improvements are made, the flow of tourists to the South is bound to increase, leading to the necessity of starting more hotels.

The Asian decon :

The question will then arise what type of hotels we are going to build. It has been suggested that they should be modelled on Asian traditions—in architecture, in set-up, in decoration, etc. but with modern sanitary conditions and cleanliness, according to international standards. This will avoid comparison with Star classifications that exist in the various parts of the world.

The whole problem of promotion of tourism can be summed up in the words of Mr. F. Marvin Plake, Executive Director, Pacific Area Travel Association (PATA) :

The first and foremost is the need for "meaningful" co-operation.

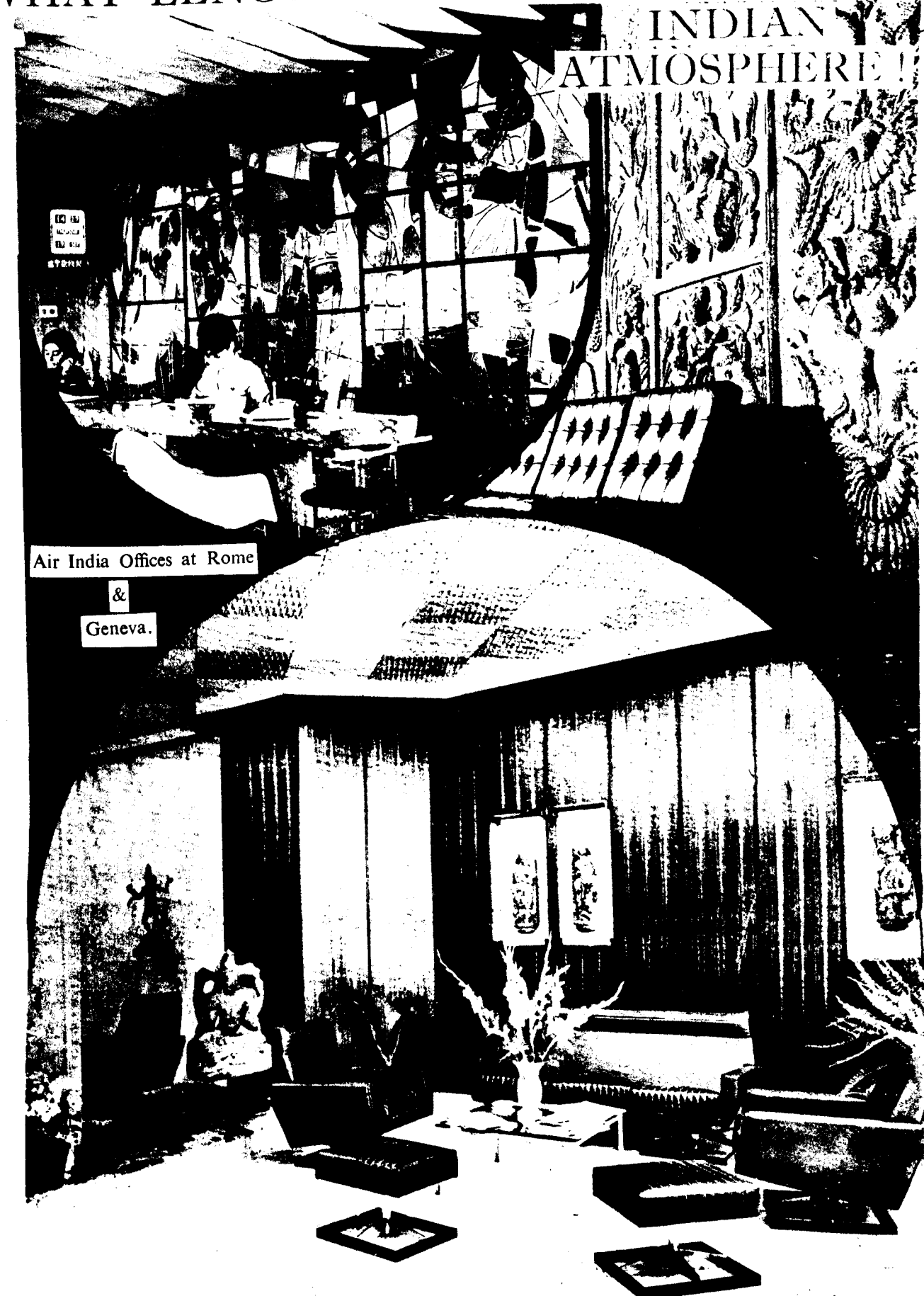
travel". "The tourist simply is not willing to sacrifice his life-style to sleep in a lumpy bed with stained sheets."

The third requirement is properly trained workers. It is an obvious and vital requirement in which Government can do much. The hotels and other travel organisations should also get moving on effective and continuous staff training programmes.

Fourth and last, there is an urgent need for standardisation on regional basis. "There should be standardised procedures governing, for instance, cancellation charges, the use of credit cards and commission and discounts to airline and travel agency employees." Such a scheme would help hotels as well as the tourists.

We hope that the Twelfth All-India Hotel and Restaurant Convention, to be held at Madras, will suggest solutions for all the problems.

WHAT LENGTHS THEY GO TO GIVE THE INDIAN ATMOSPHERE!



Air India Offices at Rome

&
Geneva.

HOW MANY LICENCES BEFORE ONE CAN RUN A HOTEL?

By

C. M. Sambandamurthi, MHCI (Lond.) AMRSH (Lond.), Instructor/Hotel Reception and Law.

In Ancient days, travel from one place to another was done mostly by troops to wage war and by the Merchants to sell their Merchandise and by Pilgrims. Maharajahs and affluent landlords built wayside shelters, i.e., four pillars with a roofing and a nearby well for drinking water for the travellers. Even today, these can be seen while going on the Highways in most parts of India. The next stage of accommodation was the regular shelters with walls on two or three sides and a nearby well for drinking water. Then came the Dharmasalas and Chathrams, giving free accommodation for travellers. In the early part of the 19th Century Locomotives, were introduced and travel increased and the need for traveller Lodges was keenly felt and introduced. Still later, the ships and ocean liners, brought travellers from far and wide and thus the world closer. Then hotels came into existence. In the Modern Era, in the Mid Thirties, Planes came in for travel, cutting down the distance and time and more and more hotels sprang up. Today we have a number of Posh Five Star Hotels of International Standards in India. Travel by cars and Buses has registered a very rapid growth in recent days. This has necessitated construction of Hotels on the Highways, to cater to the needs of travellers by providing Accommodation and food service to them. Hotels also have provision of Petrol Bunk Facilities and also toilet shop. As the Hotels with Boarding and Lodging facilities came up, the Government introduced certain Licences to be taken out, to keep up the standards of the Hotels and to protect health hazards. The licences required to start a hotel, depending on the sizes and standard of the Hotel and the area, are as hereunder.—

1. The Municipal Licence for an eating House or Hotel.

2. Licence for Radio (Commercial).

3. Licence for Loudspeakers (Amplifiers).

4. Licence for storage of Matches and Cigars (Only beyond a certain limit).

5. Licence for extension of Hotel working up to mid-night.

6. Licence for keeping a place for public entertainment and amusement, including Cabaret.

7. Licence for butchering.

8. Licence for billiards.

9. Licence for storing of butter over 7 lbs.

10. Licence for Baking.

11. Licence for Aerated Water manufacturing.

12. Licence for a bar or permit room.

13. Licence for sale of foreign liquors in retail.

14. Registration of Establishment under shops and Establishments Act.

15. Licence for direct import of Foreign goods for use only.

16. Coal, Sugar, Food grains, Flour, Milk Powder are also rationed from time to time and a permit is necessary.

17. Licence for money exchange.

In addition to the above, to regulate the conditions of work in hotels and catering establishments, the Madras Catering Establishments Act, 1958, and the Madras Catering Establishments Rules 1959, were enacted by the State Legislature of the Government of Tamil Nadu and similar acts are in force in the different States of India conforming to the Central Government Factories Act of 1948, and also the payment of Wages Act, 1936.

Licences required to be taken for running a Lodging House in Tamil Nadu.

1. Police no objection Certificate.

2. Licence under Madras Catering Establishments Act (From the Labour Inspector of the Division).

3. Municipal Licence for running a Lodging House under Public Health Act. (For this a sanctioned plan, with room capacity, size, etc., should also be submitted.)

4. Municipal Licence for running of a Restaurant with meals.

5. Licence under Food Adulteration Act (obtainable from the Corporation).

6. Police Licence for running a Lodging House.

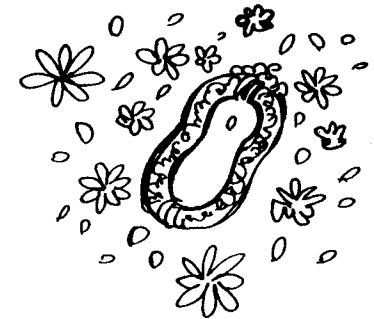
Subsequent years—

Before 31st January Municipal Licence (renewal) for running a Lodging House and Restaurant (two Licences separately should be taken) duly remitting the amount into the Corporation. After remitting the amount, before 31st March, application should be made to the Commissioner of Police, for renewal of the Lodging House Licence.

Licence should also be renewed under the Madras Catering Establishment Act, every year.

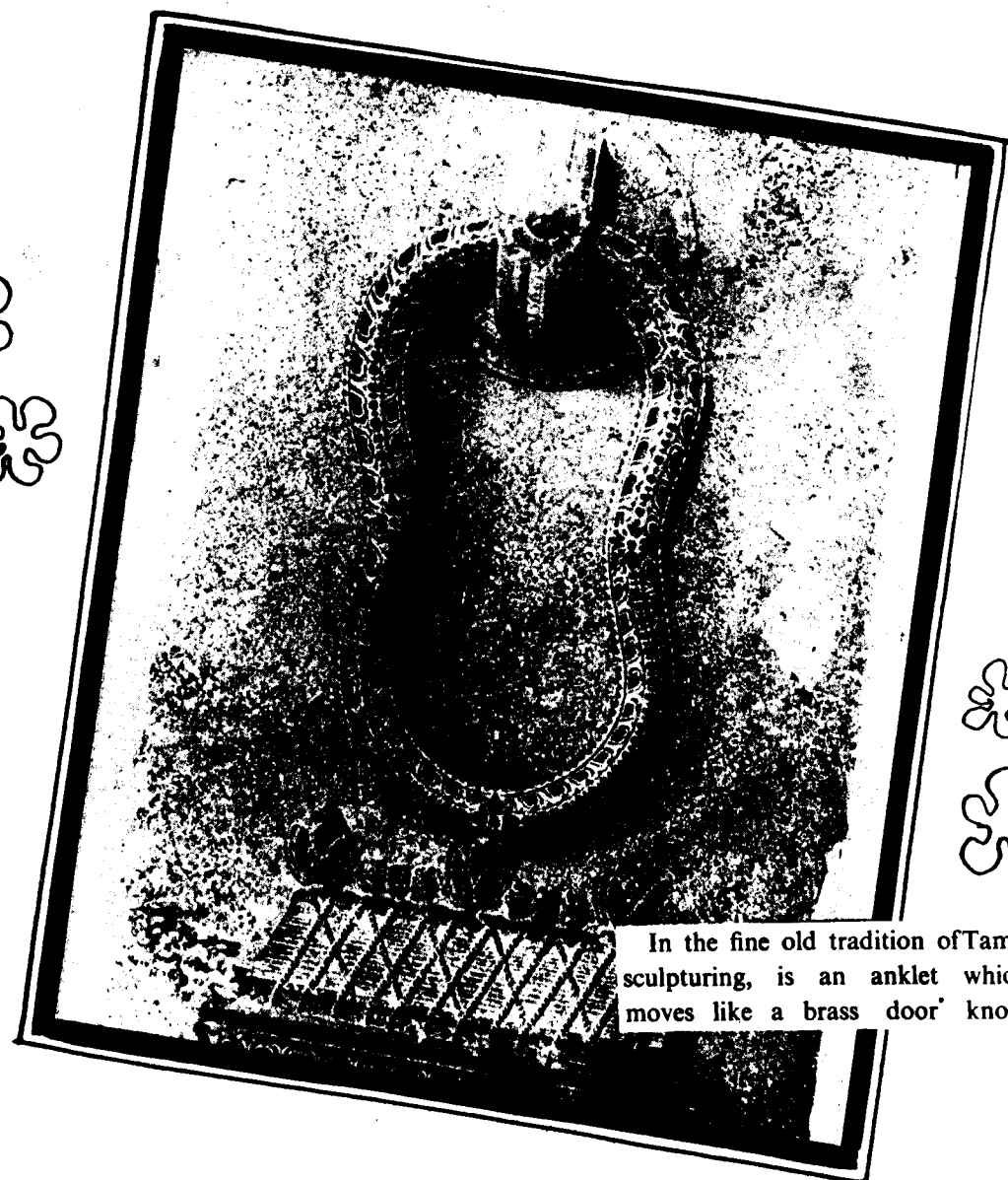


PUHAR IS REAL



Till now only to archaeologists and historians, Phuar was real; alike, the scholars of Tamil literature were positive that the Chola kings of Tamil Nadu had a flourishing trade with countries of east

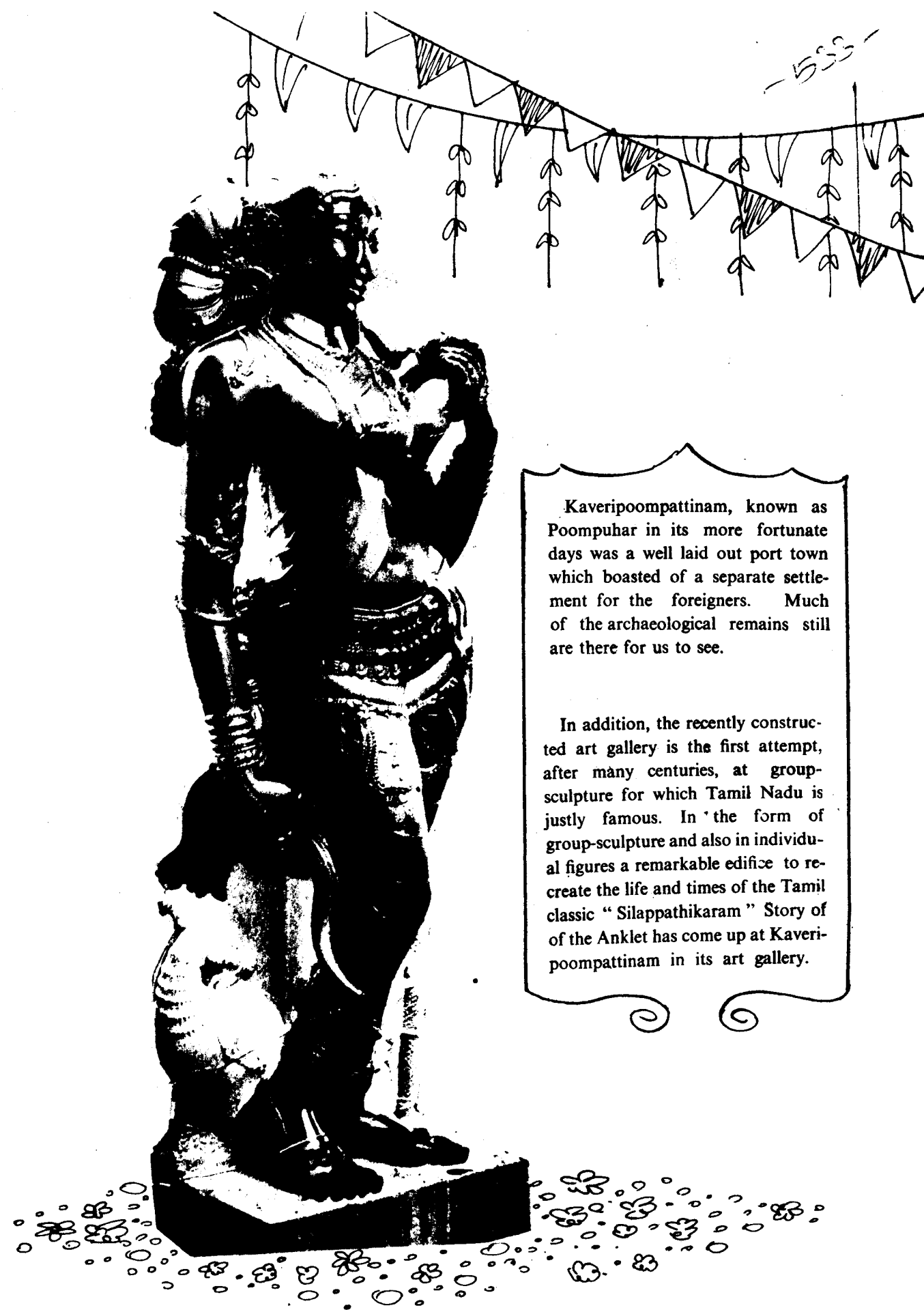




In the fine old tradition of Tamil sculpturing, is an anklet which moves like a brass door knob.

and west centred round the port town of Puhar. Also many literary pieces sacred to Buddhism, refer to Puhar and the Vihara constructed there. Only by the beginning of this century did archaeological excavations point to the actual location of the lost city, the world's market town of Puhar.

Layer upon layer of this lost town has been laid bare at Kaveripoompattinam the coastal town of Tanjore District, 24 km. either way from Sivakali or Mayuram so that the place which finds mention in Ptolemy's Geography and Pliny's Travels can be seen by travellers and tourists alike today.

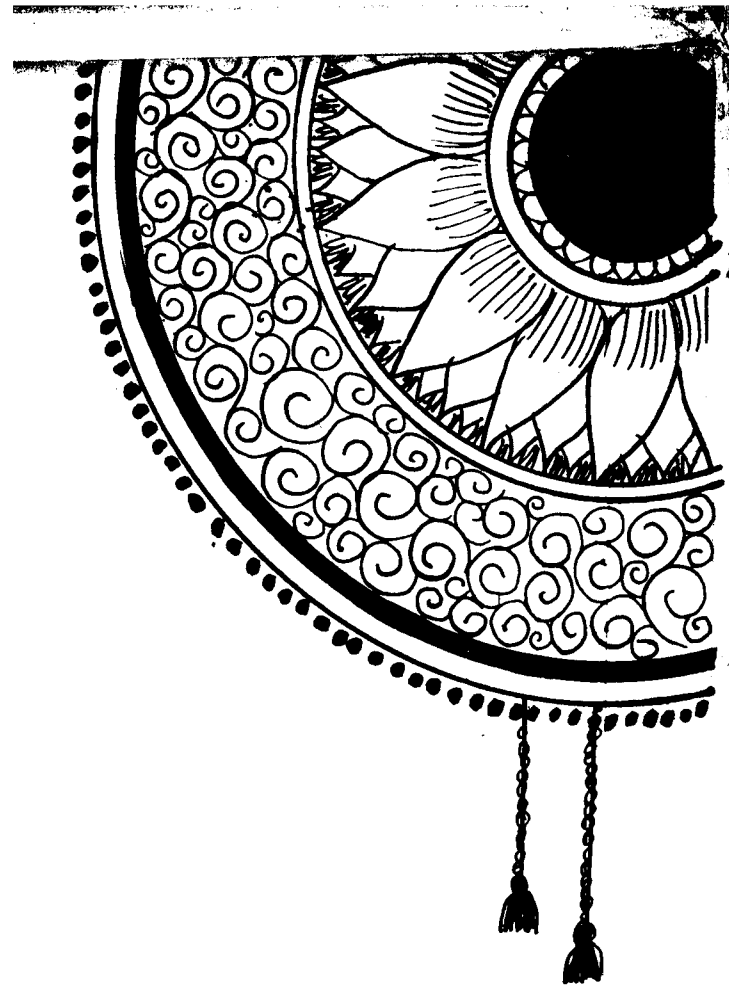


Kaveripoompattinam, known as Poompuhar in its more fortunate days was a well laid out port town which boasted of a separate settlement for the foreigners. Much of the archaeological remains still are there for us to see.

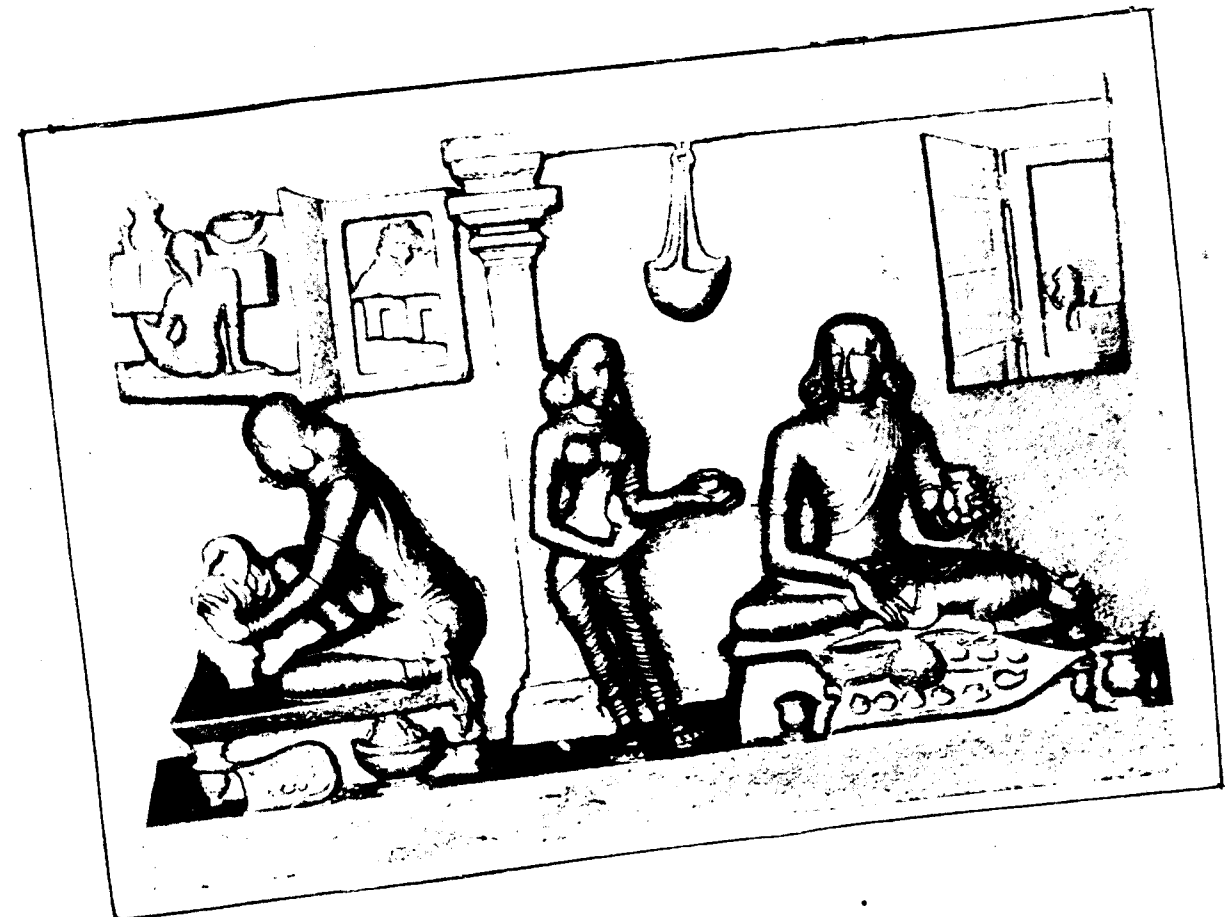
In addition, the recently constructed art gallery is the first attempt, after many centuries, at group-sculpture for which Tamil Nadu is justly famous. In the form of group-sculpture and also in individual figures a remarkable edifice to recreate the life and times of the Tamil classic "Silappathikaram" Story of the Anklet has come up at Kaveripoompattinam in its art gallery.

In the fine old tradition of Tamil sculpturing, is an anklet which moves like a brass door knob. In line with the best of the ancient sculptures, the whole art gallery excels both in grandiose conception of giants and the minute chiselling of the jewellers. In about 49 panels the story of the Anklet (Silapathikaram) is told. The large dimension sculptures are those of Kovalan with his consort Kannaki and that of Madhavi (the dansense).

Thus Kaveripoompattinam now has acquired the stature of a monument with the added attraction of a beach. Thus one can imbibe Tamil Culture while availing the benefits of a beach resort.



PUBLIC ANNOUNCEMENT OF KANNAGIS MARRIAGE



Solicitude Hall Mark of South Indian Dinner Service

The photo depicts Kannagi serving food to Kovalan in one of the panels at Poompuhar art gallery. Served in the traditional South Indian way, on plantain leaf, with the diner sitting on a slightly raised wooden plank, the sculpture captures a poignant scene in Silappadikaram.

The following will be the order of service of the various items in such a dinner. On the top portion of the leaf, from (left to right): Pachadi (salads), pickles, 'Kosumalli' of two kinds, vegetable 'foogath' and 'Koottu' are served; appalam being served from time to time. For the first course, rice, dhal and ghee are served, followed by sambhar and rasam, which are poured on rice in adequate quantity. After, rasam, sweet payasam is served followed by the last course, curd rice.

Such a service naturally calls for personal attention at every stage, as befitting the lofty ideals of hospitality enjoined in Thirukkural. Such a service has necessarily to be with attentive solicitude, which the sculpture narrates in minute detail.

The Cover Page of this issue depict the inauguration of Poompuhar Art Gallery.

—Abridged from an article written for Tamil Arasu, by Thirumathi Uma Natarajan of Institute of Catering Technology, Adyar, Madras.

ARE YOU A "DO IT YOURSELF" ADDICT IN TRAVEL ALSO?

TIPS FROM A SUPERAGENT

BY SHERIDAN H. GARTH, CHRISTIAN SCIENCE MONITOR

Anyone who is thinking of taking a trip—even far in the future—should understand clearly the function of a travel agent, and how he can profit by using one. Once understood, the services of an agent can be employed intelligently, economically and expertly.

Under his "one roof" the agent represents airlines, cruise lines, hotel owners, tour operators, car-rental companies and other organizations. He thus can provide valuable guidance and necessary information, make the required reservations over any combination of routes and provide the services that an individual needs for his particular trip.

Inquiries about travel are thus spared the trouble of going from one airline office to another, from one hotel representative to another, seeking the service which is available all the time at a travel agency.

A travel agent gives you descriptive folders, supplies information on places and routes, answers your questions, makes recommendations on the type of trip that would be suitable for you. He then makes the reservations with the transportation and other companies, issues you precise tickets and vouchers, tells you in detail how to be prepared for your departure, and offers any other ancillary operations you may request of him.

No charge for consulting.

There is no charge for discussing travel ideas with any agent, or for asking him information regarding a resort or a type of trip you would like to arrange. You have no obligation in your dealings until the agent asks you for a deposit to hold a particular reservation for you. And even if you pay the deposit, you can get your money refunded if you should have to cancel your travel plans. Of course, this is subject to any exception stated specifically to you by the

agent. When paying your deposit, you should certainly ask your agent for a clear answer on this point.

Now, you might think: Why not ask two travel agents to work for you and then choose the one you trust the most?

The answer to that is that it is unfair to any agent who works for you without charge by looking up facts and information, to have you patronize a rival agency. The situation is even worse if you ask a second agent to make a second reservation while the first is working on it. This confuses both, and in some cases the request is thrown out by the hotel, cruise line, or airline when it is discovered that two agents are conflicting over the same client.

Make inquiries at as many agencies as you want, but when the time comes to decide on your trip and make reservations for it, you should choose one of the agents and stay with him.

It is indeed true that a travel agency does more for its clients without charge than almost any other business. To enumerate:

- Your agents will:
- Answer your travel questions:
- Give you information on suitable travel offerings;
- Act as a counselor with the best advice he can and
- Make reservations for the trip you select.

If you then pay a deposit to hold these reservations and make your trip eventually, he issues all the tickets and gives you detailed instructions on obtaining passports, visas, customs, regulations, limousines to the airport, baggage weights, etc., as well as other useful information on packing and preparing for your trip. Because a travel agent performs so many services advertised as free, that is no reason to overtax

his time or ask for counsel and services without expecting to buy something.

If you ask him to work out an individual travel plan, or to make special inquiries, or to enter a series of reservations at various hotels and over connecting routes, then he will quote you a rate for these services which included the cost of his time in performing this duty.

However, if you ask him to reserve you a place on a tour, or a cruise or a package vacation, or for an air flight, then you will pay no fee and get his services gratis. The agency receives its commission from the airline, ship line, or tour operator whose services he obtains for you.

Can you save the commission?

Some travellers may ask if it would not be just as easy to go directly to an airline office or a cruise line's headquarters, thereby "saving the commission". This is not so at all. Fares are published officially by air line and steamship line agreements. If you stand in line at an airline office, the rate for your tickets is the same as if you brought it at the travel agency, and with the difference that the travel agent represents all companies and can book you over any line that is best adapted to your plans. And as for steamship lines or even tour operators, it is sometimes difficult to locate those organizations who rely almost 100 per cent on travel agents to sell their wares.

Regarding the type of service you receive from your travel agency, there is no doubt that more and more agents will ask you to browse for your trip from among racks of folders and thus they extend you no counselling.

Feel free to leave such an office without asking anything more or paying any money, unless you know exactly what tour or what flight you want, and the agent has only to do your bidding.

However, if you feel uncertain about a country to visit, the proper season to go, the most appropriate way to travel and the choice of hotels to accept or whether you can do something less expensively and get the same enjoyment, then go to another agency that will give you counselling from experts who can offer you first hand advice from their own vast experience and from information in their files. This counselling costs you nothing, presuming you allow this agency to make your reservations and issue your tickets when you have made your decision.

Unfair criticism

Much criticism has fallen unfairly on travel agents because of news headlines about travellers stranded overseas due to dishonest organisers. The defaulters are usually tour operators who materialise temporarily and then disappear after payments are collected. Individuals, who deal directly with these tour operators to obtain a greatly reduced air fare without any contract or guarantee, are the only ones victimised by such events.

Because of this growing concern over reliability, various cities and States have been urged to set up plans for licensing retail travel agencies (At present anyone can set themselves up as a travel agent). However, there is as yet no agreement about how to establish a fare rule for the licensing procedure and on what grounds.

Another important thought in the minds of many is how one pays his travel agent when it's getting close to trip departure time. The deposit paid to the agent is evidence of good faith and assurance that you are seriously intending to take the trip agreed upon. The deposit "clitches" your reservations and assures you of space on the cruise ship, airflight, in the hotel room, or on the tour of your choice. The deposit is usually 10 per cent for an air ticket, a cruise or a tour, or 25 per cent for a more intricate, higher-priced trip.

Then when your departure date get closer, say about six weeks in advance, your agent sends you his bill for the balance of the cost. Up to that time you can cancel your plans at any time and the agent will refund your deposit in full. The exception is when the agent has done much special extra work to assemble the pieces of your

trip together for your individual benefit. He probably would refund your deposit less any costs for his time and for his cable charges. Thus the traveller should always ask his agent, when paying his initial deposit, whether he will indeed receive all of his deposit back in case of cancellation.

When you receive the final bill for your trip, payment should be made in the form of cash or cheque. Credit cards cannot be used invariably in payment to travel agents except to cover the cost of air tickets involved. Collection procedures from a credit card company are too slow and the cost of a trip usually too large for an agent to be willing to wait for payment.

The next question, which might arise, is what an agent does if you cancel the trip after the final payment has been made and request your money be refunded. The cancellation will still be honoured if your agent is skilled and well trusted by the transportation and hotel companies.

Operators of some expensive tours, if faced with such a last-minute cancellation, are entitled to withhold some of the final payment to compensate them for their loss of revenue. If there is some expectation that events will cause a last-minute cancellation, be sure to clear this eventual point with your agent in good time when making your final payment or even before that.

Now as the result of all these steps, most travellers go off on their trips and have a wonderful time. But how about the few cases when things go wrong—such as a hotel not honouring a reservation, or an airline mixing up your seating or some emergency such as a strike or bad weather intervening? None of these is the fault of your travel agent. If your ticket or vouchers is correct for an air seat or hotel room, you can always cable your agent at home and ask his help in getting the airlines and hotel offices to do something for you. But in almost every case, you will have to lean on the airline involved or try out a local travel agent to find a solution for your hotel imbroglio or to help arrange alternate transportation or lodging. When you return home your own agent will investigate all transactions that occurred and refund you for any services that were not provided as promised.

The largest travel agencies maintain offices in many parts of the world, and these offices will work freely to make you alternate arrangements and get you back on schedule. They may have to charge you for extra services to do this, but some of this is refundable when you report home.

A new development in the travel fields is the expansion into tour operations by many airlines, which splash large advertisements in the papers offering "tours" at enticingly low prices to the most exotic places in Europe.

Such tours have been classed as "throw aways" in agent's parlance. They consist of reduced round-trip fares to Europe, plus a minimum of "land arrangements" to qualify for use of these lower rates. The restrictions are that only certain dates of departure can be chosen, and that service overseas consists of a modest hotel (some-times in a remote location) also a rented car or rail travel and a transfer at the beginning and end of the trip.

Many agents are reluctant to sell these "throw away packages" since they have no acquaintance with the European operators and because so many features, especially meals, are not included in the price. However, they will sell them if requested, in their capacity as agents of the airlines, but they can give very little recommendation of one over the other.

Low-cost "packages" like all other commodities, have to be judged on how much is paid for them. If their fare is very low, one's expectations should also be low. If one's expectations are for a higher standard of comfort and service, then other types of offerings should be considered.

To sum up the whole subject, a reputable thorough, skilled, understanding travel agent is worth his weight in gold. He gives good counsel, handles all the nitty-gritty details and the voluminous paper work of arranging your trip from among many, plus issuing your tickets. He does almost everything short of putting you right on your plane or ship himself.

After all, agents want you to come back happy. They can't move their office away. They're there, and when you return home they want you to come in and tell them what a grand time you had and that you will use them again and refer your friends to them too.

TOURISM NEEDS TRAINED GUIDES

With the formation of Tamil Nadu Tourism Development Corporation in May 1971, the department of Tourism looks after general, administrative and promotional activities such as allotment of tourist taxis, hotel classification and approval of plan schemes, publicity, etc., while the Tamil Nadu Tourism Development Corporation has taken over the tourist bungalows and has improved the existing amenities and also is planning expansion of accommodation and facilities wherever necessary. It also runs tourist coaches to Kancheepuram, Mamallapuram and sight seeing trips in Madras. A new innovation popular with home tourists are its Package Tours of three and seven day duration with a trained guide.

Training Scheme

There are numerous places of tourist importance including historical, monumental, cultural, archaeological and art interests. Tourists, while visiting such places, have the urge to know the previous history of the place and any important event or events connected with the place. This urge could be satisfactorily met by educated and specially trained tourist guides capable of explaining the importance of the place in languages familiarly known to the various tourists. To-day there is no systematically trained guides employed by the State Government or the Tourism Corporation who could do full justice as guides referred to above. Hence a special scheme for training suitable persons (with minimum general qualifications—a Bachelor's Degree in Arts with additional knowledge of 2 or 3 languages in addition to mother tongue) has to be included in the Perspective Plan. It is important to see that knowledge in additional languages such as French, German, Russian, Arabic, Malay, Singalis, Spanish, Italian, Chinese, Japanese and also Indian languages such as Hindi, Telugu, Canaris, Bengali, etc., are included in the training course so as to enable each trained candidate to know atleast 2 other foreign languages, in addition to

English and 2 other Indian languages in addition to Tamil.

The tourist guide has not only to be knowledgeable enough to point out and explain things to the tourist but also maintain such excellent relationship with the tourist in creating interests for this purpose. He should be well equipped with knowledge of history, architecture, local topography, travel facilities, accommodation, entertainment, food, shopping and culture. He should also be tactful, friendly and helpful. He should be a person of mature judgment, well dressed and trained to deal with foreign visitors also. A course of Tourism has been designed in the University of Delhi for the B.A. degree under its programme of vacation-oriented studies. A college in Bombay has also been assisted in introducing a one-year certificate course in tourism and travel agency. A scheme for instituting fellowships for doctoral thesis in the field of tourism at the Delhi School of Economics has also been prepared. It seems there is proposal to extend the scheme to other Universities, later. Madras University may be moved for instituting a special course of study for tourist guides.

Training opportunities are also reported to have been secured abroad through international organisations. The Government of India imparts training as Tourist Guides through their various offices. The course extends to 8 to 10 weeks duration and is basically designed to give a good grounding in the subjects in which the tourist will evince interest during his sojourn in India. Lectures on the various subjects are delivered by eminent experts and practical demonstrations are also conducted during the course. On completion of training, students have to appear for a written test which consists of two papers and a viva-voce examination.

The Government of India's Department of Tourism deals with the report of lectures on all aspects of Indian history, various religions, archaeology with special reference to the temples in South India, Indian gastronomy, planning of itineraries, etc.

An integrated development of tourist spots, pilgrim centres, archaeological and historical monuments and introducing package tour programmes with trained guides will be a popular means to satisfy tourist.

Tourists are becoming conscious of money values spent on tourism! The desires is to visit and cover as many tourist spots during a single trip. Bearing this aspect in tourism development, package tours are to be arranged in a convenient manner and such integrated tourist spots and areas have to be developed adequately with all necessary infrastructure. Priorities are to be given to the following "Packages"—

1. Madras — Kancheepuram—Vedanthangul — Thirukalikundram, Covelong and Mahabalipuram.

2. Coimbatore — Pollachi — Valparai — Anamalai — Munar — Periyar—Kodaikanal and Madurai (along Western ghats).

3. Tiruchirappalli — Thanjavur Kumbakonam—Mayuram — Sirkali —Kaveripattinam—Nagapattinam—Vedaranyam—Kodikarai and Pichavaram forests.

4. Tiruchirappalli — Thiruvanaikaval—Srirangam — Samayapuram —Pulianchola and Gangaikonda Cholapuram.

5. Madras — Mahabalipuram — Cuddalore — Kaveripattinam — Nagapattinam—Vedaranyam—Point Calimere — Tondi—Rameswaram—Tuticorin—Tiruchendur and Kanyakumari (along sea coast).

6. Madurai—Alagarkoil — Tiruparankundram—Dingidul—Palni.

7. Tuticorin — Tiruchendur—Tirunelveli — Papanasam and Courtallam.

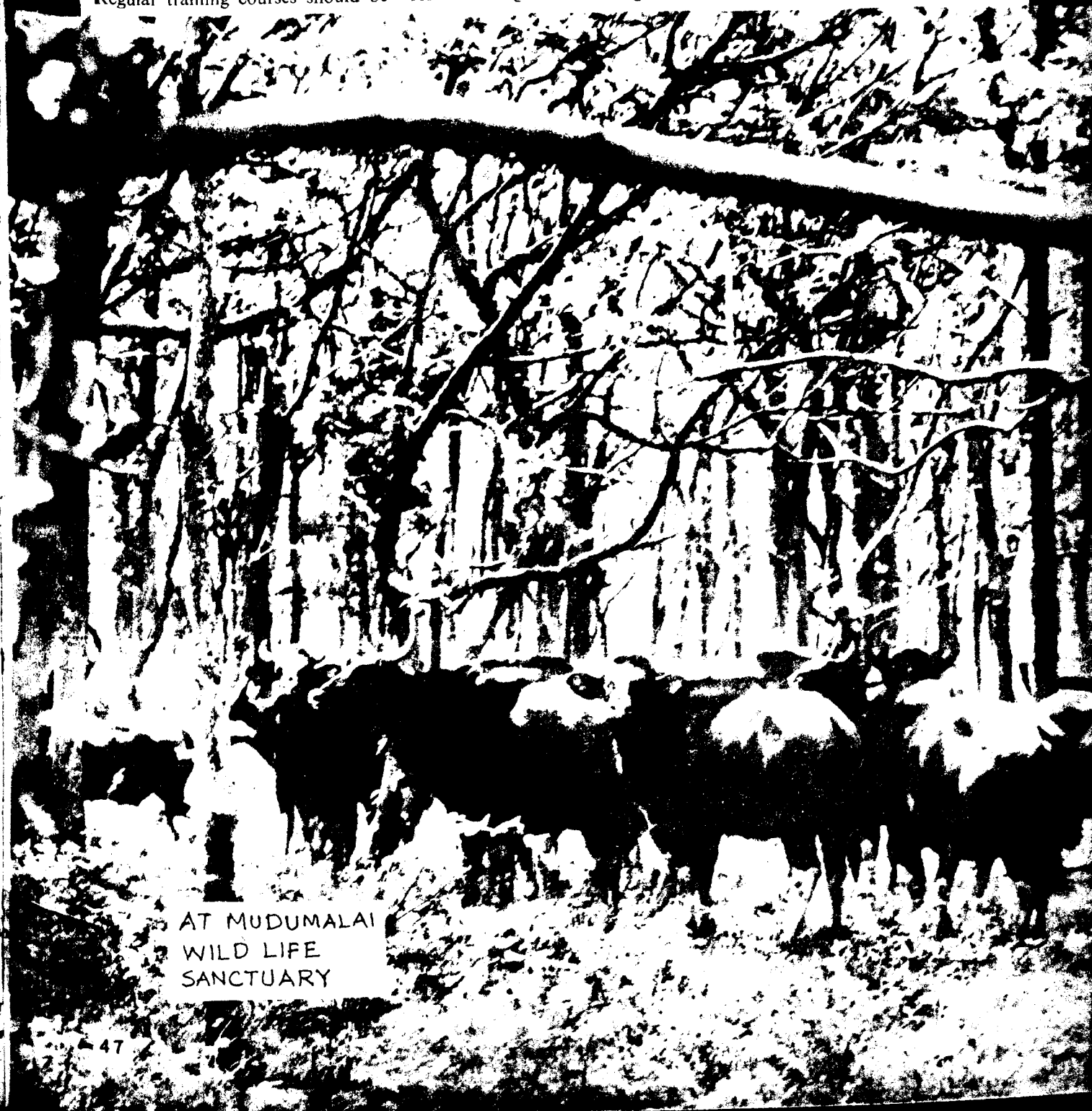
Tourists, quite naturally, are eager to know the history, important events and such other details related to the tourists place of visit. Also, the important aspect of the particular tourist place will have to be conveyed to the tourist to make him more interested in

visit. Better and useful service could be rendered in this direction by employing suitably trained tourist guides at all important tourist centres. Such guides can also be of much use in accompanying tourists on travel during package tours, to make tourists happy and feel more interested in Tamil Nadu. Absence of such organised and properly trained guides gives scope for unauthorised persons acting as guides and often conveying legendary tales to the visitor. This situation should be changed soon. Regular training courses should be

commenced for persons recruited; their minimum qualification should be an Art degree of a University, quite fluent in languages, Tamil, English and at least one more Indian and another foreign language. It is the language in conversation that makes tourists feel happy and homely and hence the trainees should be able to converse and explain the importance of the place to the tourists in a number of languages to enable the respective visitors to understand. As such, facilities should be made available for coaching both foreign and

Indian languages. Russian, French, German, Malay, Arabic and Singalese Hindi, Telugu, etc. Organised training facilities for tourist guides, and lectures as also for those officials connected with Travel Trade and Industry, Health Staff, bus drivers, conductors and taxi drivers have to be provided at State level to facilitate securing required number of trained guides. A sound knowledge of cultural heritage has to be imparted to the trainees.

(Task Force on Tourism, State Planning Commission.)





TOURISM-SUBJECT FOR DEGREE AND TRAINING

Tourism has now been recognised as a very important agency in providing employment directly in the tourism ancillaries like accommodation facilities, restaurants, transport operators, transportation companies, travel agents, guides, etc., as well as indirectly in the field of handicrafts, building trade and other types of industries ancillary to the creation of tourism complex. Particularly, in providing services for the different types of market, the domestic and the international, the low budget, the medium budget and the high budget, it is necessary to use utmost ingenuity, imagination and dynamism. But all this and the creation of a satisfactory infrastructure would be meaningful only if people associated and employed in the tourism field are able to tackle their assignments with professionalism. This would be possible only with the concerted efforts of all agencies to provide adequate training for potential workers as well as on-the-job training to employees.

The Tourism Department has been very conscious of the need to impart such training and at the moments, proposals are under way for the creation of high level institution for training in tourism studies. Even other Universities are also realising the need for introducing tourism for a serious subject of study. The Delhi University has introduced a course on Tourism for the B.A. Degree candidates from the Academic session 1972-73. Aurangabad University has also instituted Tourism Studies in its course. The Polytechnic attached to the Sofia College in Bombay has been given assistance in offering one year certificate course in tourism and travel agencies and in addition to full assistance in designation of course and assistance in running some of them, a scheme for institution of

Fellowship for Doctoral thesis in the Delhi University has also been formulated. Seminars covering various facts of tourism have been conducted by the Department for the benefit of its own officials as well as members of the travel industry. Advantage has also been taken of various fellowships offered for training in tourism. The Department is in very close association with the Regional Institutes of Catering Technology and Applied Nutrition as well as craft institutes.

Language Courses

As far as Department's direct involvement is concerned, several language courses have been held so far for the officials of the Department and guides who have had the benefit of training in French, German and now Japanese. Our main involvement has been in organising guide training courses as well as refresher courses for guides at various centres through the field officers. These courses, which are conducted for a period of 8 to 10 weeks, are for young graduates with a special interest in Indian History and Tradition.

An array of experts on varied subjects like Indian History, Geography, Philosophy, Sociology, Fine Arts, Archaeology, etc., have been lined up and their services utilised for lecturing to the guides on their special subjects.

At the end of the course guides have a practical examination as well as two written papers of University Standard. Successful candidates are given special identity cards and allowed to take assignments on a fixed rate as free lancers. It has been found that good guides have no dearth of assignments and do make a very lucrative livelihood out of what they consider a very interesting hobby. Special efforts are made to recruit young people

familiar with Indian customs and traditions so that they can interpret India intelligently to the visitor from abroad. Candidates with knowledge of foreign languages are particularly in demand.

The importance of guides to tourism cannot be overstressed regardless of the kind of tour organised, whether it be for low budget or high budget. Every one in tourism is aware that no sightseeing tour can be complete unless it is conducted by a qualified guide. While it is true that a small percentage of tourists do read up exhaustively on the country they plan to visit and prefer to go around sightseeing with a standard guide book, the majority have invariably found the services of a guide an absolute necessity. The guide meets the tourist at the time of his arrival and is with him till his departure from the city and in some cases accompanies the group or individual throughout his tour in the country. Therefore, it is quite natural that a special kind of personality should be sought for a guide. The questions asked by tourists range from the very simple and mundane like climatic conditions in the area, or the possibility of shopping for special goods to very specific and intricate questions like political situation, or India's Foreign Policy or the concept of God in Hinduism and India's attempts in the field of population control or industrialisation. In fact, very often seemingly simple questions can stump any of us and it requires, for a guide to be successful, a background of interest from flora and fauna to philosophy and economics. Our courses are, therefore, designed to give this basic introductory background so that a guide can afterwards go deeply into some of the subjects and specialise.

THE HANDICRAFTS OF TAMIL NADU

The Tamil Nadu Handicrafts Developments Corporation, a Government owned public limited company was formed and registered under the Indian Companies Act on 26th July 1973 and the certificate of commencement of Business obtained on 31st July 1973. The Corporation has commenced business on 1st August 1973.

The authorised share capital of the Company is Rs. 50 lakhs. It has taken over from the Industries Department nine Government Emporia running at different places in Tamil Nadu and will soon take over the Emporia run by the Tamil Nadu Handicrafts Co-operative Marketing Society. The Corporation will operate 14 emporia all over the State and one at Delhi. It has planned to open more emporia in Bombay, Calcutta and other important centres.

The Corporation which will be engaged only in the marketing of Handicrafts for the time being, will gradually take over the production units now run by the Industries Department, and control the complete range of activities from the procurement of raw materials to the marketing of their products. The Corporation will also undertake exports of handicrafts in a big way.

All the units of the emporia will be named as "POOMPUHAR" as Poompuhar marks the revival of stone sculpture after 12 centuries of dormancy.

Stone Sculpture :

Stone Carving as a basic art blended with the Hindu Civilisation. This Craft is mainly concentrated in Mahabalipuram of Chingleput district, Modaiyur and Thiruvannamalai of North Arcot district and in Myladi of Kanyakumari district. The superb expression of the magnificent sculptures in rhythmic form found in the Temples of Tamil Nadu have been a perennial theme for the study of art connoisseurs. Monolithic



Bronze Icons :

Bronze Icons are produced by *cire perdue* process (Lost wax process) and this craft is mainly concentrated in Swamimalai in Thanjavur district. There are also a few artisans of this craft in Madras, Madurai, Tirunelveli, Erode, Kancheepuram and Salem. The serene expression, the dynamic symmetry of the posture, the original yet artistic anatomy and the grace of gesture projected with high skill in all minute details witnessed in the Nataraja and other Icons show the iconographic talents of the artisans of Swamimalai.

Ball Metal Lamps :

Perfect in their form and flawless in their technique those lamps are traditionally known as Kuthuvilakkus and are mostly used for religious and suspicious occasions. The new type of lamp recently developed, known as Thonda Kuthuvilakku (self-filling lamp) is an ideal substitute for candles used in dinners, a new trend in the use of these traditional items in modern environments. This craft is mainly concentrated in Nachiarkoil of Thanjavur district, Kancheepuram of Chingleput district and in Vaigai-kulam of Tirunelveli district.

Wood Carvings :

The splendid specimens of wood carvings with their chiselled excellence are striking and convincing examples of the characteristic skills in delicate carvings. The craftsmen engaged in this craft are mainly, concentrated in Nagercoil of Kanyakumari district, Madurai, Virudhunagar and Karaikudi of Ramanathapuram district, Papanasam and Mayuram of Thanjavur district, Salem, Madras and in Thirumazhisai of Chingleput district. This traditional craft rises to the amazing magnitude form small rice figures (one c.m.) to gigantic sandal wood Rathe Temple car, temple chariots, which in the intricacy and precision of its arabesques and carvings capture the attention and simulate the imagination of the onlooker.

Musical pillar stones with 16 slender pillars made of resonant stone, which adorn the temples of Madurai and Suchindram Temples are unique sculptural works of Tamil Nadu which no foreigner would miss to see. Similar Musical Pillars could be manufactured at the Sculpture Training Centre, Mahabalipuram against firm orders and the cost would be Rs. one lakh at site.

Art Plates :

The Art plates, popularly known as Thanjavur Art Plate made of brass with motifs drawn from the Hindu Mythology, encrusted in Silver and Copper against an artistic and ornamental background are of traditional art, unique in Tamil Nadu, particularly in Thanjavur. They are a valuable choice of the art connoisseurs all over the world.



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MADRAS-600002

The temple cars are masterpieces of the traditional wood carving work now on revival at Nagercoil. They are massive in girth and great height, consisting of several tiers of panelling with figurine carving and cornice work, set in with a number of offsets and projects.

Ceramics :

The Ceramic Artware are produced by continuously evolving new designs and new colour schemes in keeping with the latest trend and taste in the International market. The efforts of infusing new designs and ideas and the judicious application and mixing of colours have enabled the production of a wide variety of pieces in pleasing shades. This craft is mainly concentrated in Madras and Vridhachalam. The College of Arts and Crafts, Madras has contributed a lot in evolving new designs and colour schemes.

Pith Crafts :

Pith is the stem of a kind of water plant growing in the river banks and the basic material for this fine craft. Miniature models of temples, mosques, churches and imposing buildings and monuments are made out of pith. Left to its natural whiteness they resemble the models made of marble. Flowers resembling natural ones are also made. This craft is mainly concentrated in Thanjavur, Kumbakonam, Thiruthuraiipoondi of Thanjavur district, Tiruchirappalli and Madurai.

Sunhemp Carpets and Druggets :

The carpets and druggets woven with sunhemp fibre with traditional floral motifs and modern designs are available in a variety of fine blended natural and dyed shades. These carpets and druggets, ideal as floor spread for drawing rooms, halls, and lounges are also coming in sizes for use in cars. This craft is mainly concentrated in Gopalsamudram and Ayikudi of Tirunelveli district. Weaving of utility with beauty in every product is still inborn in the artisans of this area.



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A. L. C. KRISHNASWAMY, M.C.,
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Mat Weaving :

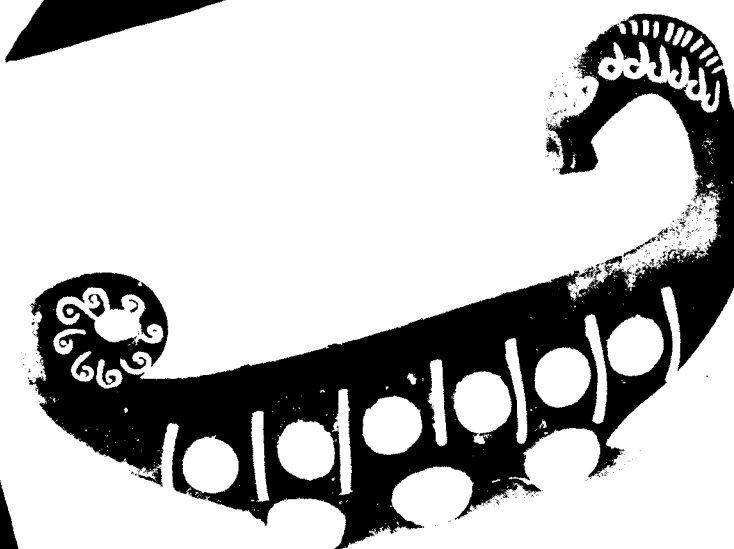
This craft is spread over the entire part of Tamil Nadu as a part time occupation in some places and full time crafts in some places. In Thanjavur, Tiruchirappalli and Tirunelveli districts, this craft is practiced as full time craft. In most of the places like Sirkali, Unniyur, Veeravanallur and Pattamadai it reaches high technical skill. From a mere Cottage Industry, this craft has developed into folk art and at Pattamadai, it has reached a level of matchless distinction in decorative art.

Paper Machie :

This craft is mainly concentrated in Madras, Madurai, Cuddalore and Thanjavur. The artistic expression and the grace of gesture projected in all minute details witnessed in the Bronze Icons, may also be seen in the Papier machie products. Apart from products of high artistic value, small dancing dolls and wall hangings are also produced.

Kalamkari :

An extension of fresco tradition, these colourful hand woven fabrics of vigorous designs the traditional artistic expressions applied to the changing times from decorative art to utility items, are the choice of the art minded people. Generally the theme for this craft is taken from the Hindu Mythology. This craft is mainly concentrated in Seeka-naikenpet of Thanjavur district, Thabovanam of South Arcot district and in Madras.



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Applique Work :

The products like Thombai, Vasamalai, Umbrella used in religious occasion are produced in eye catching colour cloths with patch work of birds, animals and floral designs as motifs. These pieces are widely welcomed as decorative pieces. This craft is being practiced in Lalgudi of Tiruchirappalli district and Kumbakonam of Thanjavur district.

Batik Works :

Batik Art pieces, both in abstract art and traditional Art are widely welcomed as Decorative pieces and as draperies. This craft is practiced in Madras and Cholamandal Artists Colony (beyond Tiruvanniyur).

Mr. Philip, Chairman, Southern Handicrafts Exporters Association, gives the following Comments :—
“Are these made by Indians? Unbelievable, how beautiful, how talented your people are?” ex-

claimed a tourist looking at our arts and crafts display. This is a typical remark by foreigners who visit our country. They admit the crafts-manship is almost dead in their lands and if at all anyone made anything artistic by hand, you can guess the price will be something fabulous.

There is a tremendous lot of talent in our people and we can do anything by our hands, given ideas and raw materials. It is most heartening to see that our own countrymen are beginning to appreciate this and encouraging our artists and craftsmen.

By the efforts of the State Governments, public and private emporia and boutiques, our craftsmen and artists are coming forward rapidly, and the foreign tourist can buy quality goods at right prices, in all cities.

It is estimated that Rs. 300 crores worth of the handicrafts are produced and sold in the country, every year of which nearly Rs. 100 crores are in exports. The market is large and the prospects unlimited, but one must be on guard to preserve the purity and standard of workmanship and finish and not be tempted to make easy money but turning out shoddy work, only then will our handicrafts have bright future.

Every tourist and foreign visitor likes to take with them something typical of the country and representing our culture, and therefore our handicrafts, are truly ambassadors and this fact must not be overlooked by either the maker or the seller.



HOW THE HOTEL INDUSTRY CAN ATTRACT TOURISTS

By
K. S. UDVADIA
(General Manager, Hotel Imperial, Madras-8).

Tourism can be best promoted in the spirit of team-work and collaboration between officials and non-official agencies, through public and private sectors coming together in an exclusive council. Through this, we can obtain advice of various segments of travel industry formally and informally and true representation could be given to travel industry on the council.

The most important problem, which confronts us, is that the tourist facilities are not keeping pace with the growth in the tourist traffic in large cities and even the basic facilities have to be developed around tourist centres in the interior of the country.

In recent years, foreign tourists visiting this country are so large that the problem of accommodating them all at a time in good hotels poses the biggest problem. The Government should come to the aid of private sector by giving all possible help towards advances of money for transport, for renovation of hotel buildings and buy up-to-date modern machinery for hotels and Catering Establishments. The Government should allow the private sector to play its role as effectively as possible and only when private enterprise fails or lags behind, then there is no option for the Government, but to take over the initial operation facilities.

The travel agents and hotel industry should not be content with the physical arrangements for the tourists, but they should act as guides and philosophers to enable them to see all the aspects of our country in right perspective and return with balanced view of things. By these means, the hotel industry will be conscious of an educative influence on the minds and hearts of their guests. I would like to deal specially on tourist and holiday publicity which covers two important functions, that of providing information and persuading the public who constitute the market for any product or service. There is a common ground to persuade the

people to travel away from home and to spend their money in the travel services. There is a peculiar complication which lies in the fact that the traveller does not look forward to mere accommodation or transport. But he requires service, because he has been persuaded to make a journey for a particular purpose, for sight-seeing, for business, for education and to see friends and relatives. It is for that reason that the co-operative work is most important. It is very rarely that any business can do without publicity of some kind.

In all the cases of information aspect of publicity, clients must be told where the hotel is and how they can get there. In this case, brochures and sign-posts, information notices and local guide-books, or obvious examples of the methods available to attract the clientele. The most important is that the local residents in town can come forward to give their valuable suggestion, coverage of local press through feelings, for example, obtaining mention of personalities visiting the hotels and events taking place in the hotels and the national press. Regarding the management, they have to make a thorough study of the market (i.e. their clientele). It is rare that the management may not know the tastes of various types of people. Travellers are having their own whims and fancies of food. A study of market and study of what hotel has to offer is a prelude to the planning of publicity operation. The hotel should know what it has to sell, at which times of a year accommodation is not fully used, whether it wishes to develop a restaurant business, banquetting business, a Conference or trade. The hotel industry must bear in mind in order to please its clientele with presenting them with literatures, post cards, X'mas cards, calendar, and they should be persuaded to come more often again with their friends and relatives.

Publicity is an essential factor in marketing and unless you present your hotel in right perspective, it

will be very difficult to get appreciation from them.

GOOD PUBLICITY AT LOW COSTS

The two most important sources of business for the hotel industry are undoubtedly by way of recommendation and various form of direct advertising. Unless and until you give the visitors and provide them with good service with charm and courtesy, the visitors will not hesitate to suggest the hotel to their friends and business associates. The proprietor of the hotel should come forward to spend just a little effort in keeping the name of his establishment before the public eye in the most effective and attractive manner. His continued effort may also repay him in terms of cash actually saved on publicity materials. I would personally stress my sincere opinion on pictorial advertising which is a powerful selling-media in my personal experience a great success as I found. What we should do is actually this that the picture post cards on your own hotel with good background covering particularly the interior and exterior of views which will no doubt attract the tourist to a great extent. For this, the cost of printing cards may not be so expensive and this will be of great publicity value. Benefits derived by tourist-travellers lead the way to international friendship and world-peace. Where tourist visits a country, they talk with the people there, see how they live, and become acquainted with them. Genuine and true friendship developed by mutual contact and long discussions on social customs, manners, habits, etc. makes an indelible impression on our visitors and on return, he is able to explain by his experience what he has seen to his own people in a true way. Their true friendship and mutual love is there for ever on the minds of the tourist and his reminiscences and impressions will lead definitely to world peace for ever.

SAFEGUARDING THE AIR

by
Prof. G. Sidorenko

Director, Institute of General and Municipal Hygiene.

George F. Kennan, the celebrated American columnist and diplomat, in one of his articles had suggested that a group of countries might set up something like a club for nature protection. The idea seemed fantastic to him then but there is no fantasy in the idea now.

There are various forms of the joint efforts of States in nature protection. For example, there is already a club existing of representatives of all COMECON member-countries of Europe. It organises and channels all the activities of the co-ordinating centres established in the U.S.S.R., Czechoslovakia, the G.D.R., Hungary and Poland. Among the problems being tackled are "Hygiene Aspects of Environmental Protection", "Protection of the Atmosphere from Pollution by Harmful Substance", "Disposal and Utilisation of Domestic and Industrial Waste", etc. The problem of protection of water resources is also being solved jointly.

These problems are being tackled by over 100 various research institutes. A centre set up with the facilities of our Institute, has been given to solve the first problem, i.e., the problem of environmental hygiene.

The task of the centre is to summarize and analyse the working programmes of research works in the member-states, to submit proposals on new research projects and to prevent parallelism. It also provides reciprocal consultations for specialists and organises exchanges of know-how.

Joint Research

As far back as 1963, COMECON adopted a decision to organise joint research to protect the atmosphere

from pollution. Before this decision, the activities of the scholars from the socialist countries were dissociated. Questions were solved on the basis of individual experience. There were no experimental facilities in many of these countries and sanitary legislation was just beginning to be evolved.

From my point of view, the main results of the first period of our co-operation was that we could organize at the Hygiene Institutes of the member-states, laboratories and experimental facilities to prepare specialists (by the way, many of them covered a training course at our institute) and to standardize research methods. Last but not least, in the course of that co-operation there appeared some new trends in the study of the biological effect of atmospheric pollutions.

Beginning of a New "Chemical" Era

A person living in the second half of the 20th century comes across every day, both in production and at home, an ever growing number of chemical and physical factors whose influence on the organism is either not known at all or insufficiently known.

The pollution of the air, water, and ground and consequently of food by chemical substances has reached such a level in advanced countries that scholars are now talking of the end of the "bacteriological" era (that was how the past century and the first decades of this century were called) and of the beginning of a new, "chemical" era.

There are various ways of fighting pollution in different countries. Whereas in the Western countries

it is a question of stabilizing the level of pollution, in the COMECON countries this is a case of a constant reduction of this level. The scope of the problems of clearing the environment are stupendous and they can be solved only under a system of planned economy.

Here are only a few characteristic illustrations. There are about 20 new towns springing up in the U.S.S.R. every year. Their construction is necessarily done in keeping with hygiene recommendations. What does this mean? The city territory is broken into functional zones—residential, production, service and transport. Besides, a sanitary protective zone stretches between the production and residential areas. More and more enterprises are being fitted with clearing units. The free planning of neighbourhoods helps to air them better, to have a more efficient insulation of flats and to reduce noises. The same are the principles underlying town-building policies in other socialist countries.

Campaign for Human Health

The Campaign for clean air is campaign for human health. Here, the COMECON scientists jointly solve this problem. In the course of the co-operation, great attention is paid to the study of possible allergenic, embryotropic, cancerogenic and genetic influences of substances on man. On the basis of the research made, hygiene recommendations were compiled along with the quotas for maximal permissible content of harmful substances. This is particularly important because the hygiene quotas underlie all the practical activities of the sanitary bodies and are the initial data for the planning of industrial and housing construction.

However, the problem of ecology is many-faceted. It includes the questions of protection of soil and water bodies, noise abatement, etc. Take, for instance, the water basins which are common for several countries. In this case, one can do little single-handed. That is precisely why Comecon countries with coast-lines on the Black and the Baltic Seas, as well as the near-Danube countries, have joined their efforts to protect these water resources. A number of measures has been evolved to prevent their pollution.

SPACE PROGRAMME IN INDIA

In order to promote a rapid development of activities connected with the Space Science, Space Technology and Space Applications, the Government of India set up a Space Commission on June 1, 1972, an organisation free from all non-essential restrictions or needlessly into strict rules, to have responsibility in the entire field of Science and Technology of Outer Space and their Applications. The Space Commission with full executive and financial powers, modelled on the lines of the Atomic Energy Commission, is headed by Professor S. Dhawan, Director, Indian Institute of Science, Bangalore.

The objectives of the Space Programmes, according to the Profile for the Decade 1970-80 on Atomic Energy and Space Research, are to develop indigenous competence for designing and building sophisticated hardware involved in space technology including rockets and satellites for scientific research and practical applications of the use of these systems for providing point-to-point communication and a national television built-up through a direct broadcast synchronous satellite and the applications of satellites for meteorology and for remote sensing of earth resources.

The Space programme can be divided subjectwise into three broad areas of Space Sciences, Space Technology and Space Applications.

SPACE SCIENCES

Space sciences include research programmes in acronomy, X-ray and gamma ray acronoma, plasma physics, cosmic rays, studies of lunar material, meteorites, etc. Research under the broad spectrum

of Space Sciences is mainly carried out at the Physical Research Laboratory, Ahmedabad and at the Vikram Space Centre, Trivandrum.

Space Technology covers all aspects of work related to the development of rockets, satellites, propellants, scientific payloads and ground and space instrumentation.

The Space Science and Technology Centre (S.S.T.C.) at Trivandrum set up in 1965, is the main research and development laboratory. At present, work is in progress in the Centre for the development of a satellite launch vehicle. Studies are also under way for developing synchronous satellite launch capability. The Vikram Sarabhai Space Centre includes the Space Science and Technology Centre, the Thumba Equatorial Rocket Launching Station, the Rocket Propellant Plant, the Rocket Fabrication Facility and the Propellant Fuel Complex.

The United Nations sponsored Thumba Equatorial Rocket Launching Station (T.E.R.L.S.), which became operational in 1963, offers unique facilities to conduct research in ionospheric physics, geomagnetism, cosmic rays, astrophysics and solar physics.

Speaking at Thumba on February 2, 1968, Thirumati Gandhi observed that Thumba Rocket Centre was a milestone on the road of progress that India has made during post-independence period. She further said, "This station is a very tiny part of the vast programmes of space exploration which have already carried rockets to the Moon and to Venus".

More than 100 rockets have been launched from the Thumba Equatorial

Rocket Launching Station (T.E.R.L.S.) till now. The rockets launched included those under collaborative experiments with various countries, experiments exclusively for Indian scientists, and flight tests of rockets under development.

SATELLITE LAUNCH VEHICLE

The Satellite Launch Vehicle Project has been undertaken for the indigenous development of a satellite launch capability for placing a scientific satellite of 40 kilogram in a 400 kilometre near circular orbit around the earth. A team has been constituted to analyse, study and report on an optimum approach to the development of a multistage launch vehicle, capable of placing a satellite of about 800 kilogram weight in synchronous equatorial orbit. Work relating to the detailed mission analysis, vehicle requirements, technological options and optimum choice is in progress.

The Space Applications Centre (S.A.C.) is responsible for various aspects of space application work. Effort is being concentrated on two primary areas, viz. (i) satellite communications and (ii) remote sensing and meteorology.

City for Sale :

The *Casper Star Tribune* (Wyoming, U.S.A.) recently carried an advertisement on the sale of a town True, Lamont—as it is called—is a teeny-weeny town. The 1970 census put its population at 100. It's located on either side of a highway and makes a living by catering to travellers. It has two filling stations, a hotel, two stores, a bar, a cafe, and a few dwellings. They all belong to one Bobby King who complains that Lamont no longer brings him any profit. And so he has decided to sell it for £150,000. He has had three offers and while the bargaining goes on, the townfolk are wondering what the future has in store for them.

A FACTORY THAT HELPS IN URBAN SANITATION

By
N. GULYAEV,

Head of the Urban Sanitation Sector of the Academy of Municipal Economy.

Garbage heaps are growing with threatening speed all over the world. The London "Observer" reports that in the 1920s, the average American family threw out 2.7 lbs. of solid waste a day. In 1970, the figure was 5.3 lbs., and by 1980 it may go as high as 8 lbs. Every year, Americans throw away over 50,000 million tin cans, over 30,000 million glass bottles and jars and over 4,000,000 tons of plastic packaging material.

In short, dumping is by far not the best and, I would say, now an obsolete approach to the problem of waste. But what, in that case, is to be done with it? Specialists have proposed a solution: build refuse burning and refuse processing factories. Burning refuse is hygienic but quite expensive too. It is much more profitable to process garbage and convert it into some useable material like fertiliser.

Garbage Turned Compost

The refuse problem exists in our country too. With the growth of both industry and the cities, the amount of refuse inevitably increases. The residents of Moscow, for example, produce 6 to 7 million cubic metres of refuse annually, which has to be taken 30 to 40 kilometres beyond the city limits to be dumped. And in a number of big European cities, garbage has to be taken much further, as in Berlin, for instance, where it is shipped by rail to a distance of over 100 kilometres from the city.

Transportation of refuse is, of course, an expensive proposition. But this is not the worst problem. It is becoming increasingly difficult to find suitable places for dumping and the problem of rendering waste material harmless is becoming more acute. Even though the garbage may be carefully buried a dump becomes a large area of useless land, and at the same time a potential source of infection, a favourable environment for harmful microflora.

Two years ago, a new kind of factory began operating in Leninograd. It was an experimental plant for the mechanised processing of community refuse designed at the Giprokommunistroi Institute, according to specifications worked out by the Urban Sanitation Sector of the Academy of Municipal Economy.

In this plant, garbage is placed into a feed bin, from where it travels by conveyor to a crusher. On the way, magnetic separators remove metal from the garbage. The crushed refuse then moves to the plant's main "shop"—the biothermal drums. These are closed revolving pipes, four metres in diameter and 60 metres long. Air is blown into the drums and conditions are created that stimulate an active biothermal process, converting the garbage into a compost under the influence of thermophilic bacteria.

Composting takes three days. The resulting compost is a high-

grade organic fertiliser containing large amounts of carbon, phosphorus, nitrogen, potassium and calcium for use in suburban agriculture.

Another garbage processing plant of French design with Soviet improvements was built recently in Moscow. One of Europe's largest plants for handling community refuse, it is designed to process 200,000 tons of garbage a year. This plant also makes compost, but that part of the refuse that is unsuitable for this purpose (large pieces of cardboard, wood, synthetics) is burned. The resulting heat is used to produce steam for nearby manufacturing plants and the residual dross can be used in road-building for filling in swamps, etc. This is actually two plants in one—a garbage processing and garbage burning installation. It has been estimated that six or seven such plants in Moscow could supply all the fertiliser needed for the greenery in and around Moscow and also for the market-gardening State farms around Moscow.

In Moscow, as in other Soviet cities, about one-third of the city's area is given over to greenery. Supplying fertiliser through garbage processing solves two problems at once: it rids the cities of refuse and improves their atmosphere with greenery.

In the near future, Moscow will have several such installations and garbage processing plants of various types will be built also in Tashkent.

Riga, Kharkov, Minsk, Tbilisi and other cities.

Against Garbage Domination

It would seem, then, that the solution to the problem has been found: convert garbage into a compost. However, scientists working on the problem of purifying the environment continue their research. But still there is the problem of the "waste in the waste", that is that part of industrial waste that is simply burned. An ever greater proportion of this kind of waste is made of synthetic materials, some of which gives off noxious fumes when burned. A better way of processing this kind of material must be found. Scientists are now trying to grow a kind of bacteria that would eat synthetics. It would be beneficial to find a way of increasing the "appetite" of the microbes that are used in processing organic waste in order to speed up the process of bio-thermal garbage processing. Biologists at our Academy are presently working on raising such microflora.

It is possible that new uses will be found for processed refuse in the future. As far back as the 1930s, Soviet scientist A. Gorin proposed a scheme for producing industrial alcohol from organic waste. This method is now practised in our country and in the United States. Patents for the production of building tile made of compressed refuse have been taken out in Japan and the Soviet Union. Experiments are being conducted on processing waste material into fuel oils and American experts even contemplate deriving valuable metals from garbage heaps.

The refuse problem is so urgent that even the nuclear physicists have been working on it. They hope to create a nuclear furnace that will be able to break down refuse into its component elements which will then be suitable for refuse. It is hard to say which approach will save man from "garbage domination" in the future. But many techniques already exist that are able to help solve this important problem.



the living past

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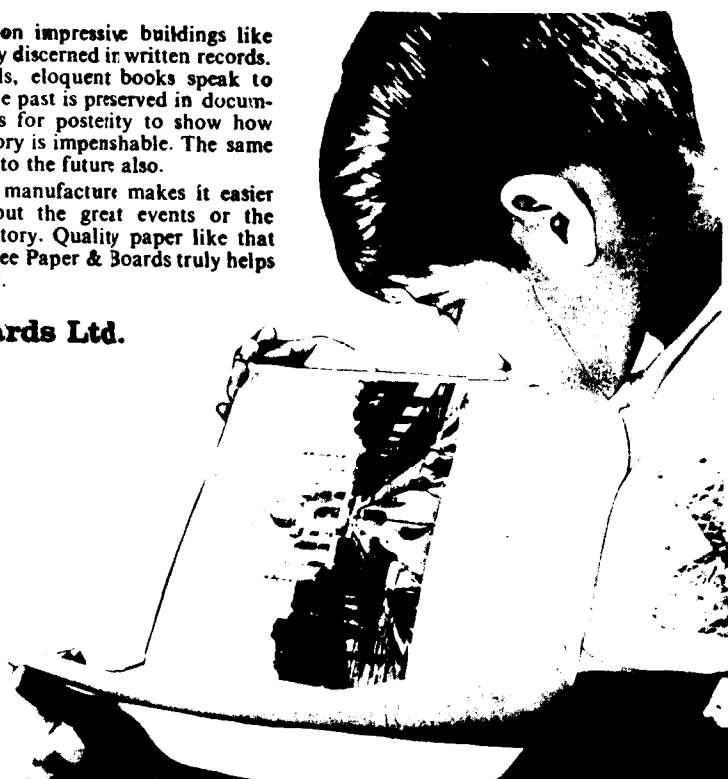
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Theft of Cultural Property

by

M. N. Deshpande

Director-General, Archaeological Survey of India.

Rich Cultural Heritage

India has a long and hoary antiquity. On her soil flourished one of the most ancient civilisations of the world. Ancient monuments illustrative of her glorious history and culture and other works of art constitute visual landmarks of the high attainments and genius of our ancestors.

We are justly proud of this great heritage. In fact, there is a growing awareness in the world that the cultural heritage belonging to any people whatsoever constitutes a common cultural heritage of all mankind and preservation of this cultural heritage is a common responsibility of all peoples of the world. It is no wonder, therefore, that the monumental and artistic heritage of the country is cherished by the sons of the soil as their special responsibility.

Appreciation of the cultural heritage has given new dimensions to tourism beyond the confines of one's country. In modern times, tourism is being conceived as a global industry. While this development is indeed welcome, there is an attendant factor which has been causing concern to those interested in the preservation of cultural heritage.

In the recent past, we notice that all the world over there is a craze for possession of pieces of art. This craze has so completely overtaken the so-called cultured and elite in the affluent countries that this has set at naught all norms of behaviour. Theft and smuggling of art objects has become a world-wide phenomenon.

India has a rich artistic tradition and objects exemplifying it like sculptures in stone, metal or wood, paintings and manuscripts and a variety of other objects are strewn over the length and breadth of the country. This has attracted the attention of art-lovers and art-dealers and denudation of the country's cultural heritage by theft and smuggling has reached alarming proportions.

This is in sad contrast to the efforts of others dedicated to the cause of protection of cultural heritage of mankind. On the one hand, damage to cultural property even during armed conflicts is considered an act of vandalism leading to impoverishment of world-culture. World opinion is sought to be aroused against this danger through UNESCO Convention (1954) for the protection of cultural property in the event of armed conflict. The 1970 Convention deals with the means of prohibiting and preventing the illicit import, export and transfer of ownership of cultural property, pillage, theft and smuggling of cultural property which go on unabated.

Not a day or a week passes without a news item about the theft or damage to cultural property. Museums are burgled, priceless images under worship are stolen or replaced and sometimes, statues adorning temple walls are detached by chiselling and stolen away. A new and lucrative trade in antiques has developed. This trade knows no ethics and is flourishing in an underworld of its own.

The theft of the bronze Vishnu image from the Chamba temple which was fortunately recovered in Bombay or the smuggling of the unique Chola period Nataraja from Sivapuram to U.S.A. may be cited to illustrate the ramifications of this trade not only from one part of the country to the other but also from one country to the other.

Need For Vigilance

What are we to do in such a situation? Do we expect the Government to tackle this menace or do we consider that we as citizens, have also a role to play in this national task? We are aware that the Government of India has passed the Antiquities and Art Treasures Act, 1972 to regulate the export of antiquities and art treasures, to provide for the prevention of smuggling of and fraudulent dealings in antiquities and this Act will soon replace the Antiquities (Export Control) Act, 1947.

The new Act envisages licencing of dealers in antiquities so as to regulate the trade and control illicit export in antiquities and to see that acquisition of antiquities by fraudulent means is put to an end to. It also aims at registration of antiquities in the possession of private persons and institutions. The Act also provides for compulsory acquisition of antiquities for preservation in public museums and for severe penalties for offences in contravention of the provisions of the Act.

The Government has taken other positive steps in many directions.



All loose sculptures in and around the protected monuments, which cannot be adequately safeguarded in site, are being collected and stored in sculpture-sheds where they could be better looked after. The Watch and Ward staff at monuments and museums has been augmented and police-guards are being posted at vulnerable museums and monuments.

Responsibility of the Citizens

However, everybody knows that laws and penalties help but a little in prevention of crime. The legal sanctions and the stringent penalties

for infringement of the provisions of the Act will be of no avail if the people themselves are callous and unaware of their responsibility.

If this country has to survive and make its mark in the world of tomorrow, it must be conscious of its extraordinary cultural, spiritual and ideological heritage and foster values which have been tested over centuries. This cumulative heritage however, takes concrete shape in the form of monuments and works of art.

An image is not merely a work of art but something more than that.

An art object is mirror of art, religion, philosophy and cults and culture of a country. It will be a great folly to consider that this rich cultural heritage can be preserved merely by enactments or armed guards.

It is the common will and determination of the people that can save cultural heritage of the country for it symbolises the very soul of a country. To save the soul of a nation, we must put in determination and dedicated efforts. By allowing theft of cultural property, the present generation will be neglecting

moral duty of safeguarding the cultural heritage which has been handed out to it by its forefathers.

I say all this with a definite purpose. Can we have nation-wide movements for saving our artistic heritage? If we are convinced that such a movement alone will effectively save our cultural heritage, we must start action in all earnestness.

Each village and each town is proud of its antiquity. This may be manifested by monuments, perhaps a temple, a mosque, a church or a secular building either a place or a tank. Besides, there must be numerous art objects attached to these monuments or lying in the precincts of these villages or towns.

Should it not be the duty of the villager or the town dweller to protect this heritage from the lust of the antique dealer? It is impossible for any thief to hack a sculpture from a monument or a temple without some active support or connivance by the local residents.

Can we not envisage emergence of local association for the protection of cultural property? The support of the entire population should be enlisted in this noble task. Such village or town associations should function under the general guidance of district associations for the prevention of loot and vandalism of our cultural property.

In the next Five-Year Plan is envisaged the establishment of Nehru Yuvak Kendras at each district level to foster and promote all-round cultural and other related nation building activities. Such centres can play a vital role in safeguarding the

cultural property of the region. These centres can initiate positive action in the form of collection of loose sculptures from unprotected monuments and ruins and help in the formation of museums at each district centre. If such a movement gains momentum, the task of the

police to enforce the Act will be easy. This will greatly diminish theft of cultural property and police will easily get information about anti-social elements operating in each area. I hope this consciousness among the people can be created by historians, archaeologists, museum directors and by other leaders of the community interested in the preservation of our cultural heritage. This can become a mass movement not only for the purpose of prevention of thefts but can also become a dynamic instrument for informal education in the field of cultural heritage.

RESPECT FOR CULTURAL HERITAGE

We must teach our students respect for our cultural heritage. We should be able to enlist the support of the teachers at all levels. At each university, college and higher secondary school where history and cultural subjects are taught, History Association must be established and the interest of the students aroused.

These associations must foster the study and collection of coins, and other works of arts and crafts to make history education more interesting and meaningful. Educational trips to monuments must be organised with great imagination so that students visiting monuments would understand the significance of the monuments and act as projectors of monuments. Students, who would be thus educated, would not think of disfiguring our monuments by scribbling their names or remove a piece therefrom as a souvenir.

Thus it will be seen that in this great venture, every citizen has a role to play and I feel that if we can quicken intelligent interest of the students and the general population in the great task of preserving our cultural heritage. We shall have achieved a good deal. Legal measures can protect cultural property to a limited extent but if the entire nation is involved in this task, the problem will be solved in no time.

Our Sculptures Should Be Retrieved.

I might add a few words about the question of retrieving our sculptures

and other works of art now in foreign countries, some of which are blatantly exhibited in some museums of the country. While Government of our country will certainly take all possible measures at international level to retrieve these objects on the strength of appropriate laws, the cultured population in foreign country to whatever nationality it may belong, should wage a publicity campaign against museum officials and private collectors. Indian nationals in foreign countries must take a lead in mobilising public opinion against the activities of art-collectors and dealers and create a climate for the return of these pieces to the country of origin.

There is yet another threat to our cultural heritage to which I want to attract the attention of the readers. In a developing country like ours, there are so many new schemes formulated for bringing about economic prosperity. New roads, canals, dams and industries are fast coming up.

While all this is very necessary, attention must be paid to the proper protection of our monuments and sites. We should not allow our monuments to be damaged or engulfed in the maze of new buildings. We must ensure their proper environment. Where there are over-riding necessities and compulsions for location of a particular dam or an industry at a given place, we must take all possible steps for safeguarding our national monuments. This may necessitate prior excavation or shifting of monuments as we did in respect of Nagarjunkonda. Here when it was felt imperative that the dam must swallow the ancient Buddhist establishment of Nagarjunkonda the site was excavated and imported, remains transferred and transplanted at a suitable place.

It will thus be seen that every situation can be tackled if there is a will and understanding. I take this opportunity to appeal to our administrators and business executives to bear the message of the monuments in mind and help, save our cultural heritage.

(Courtesy: All-India Radio)

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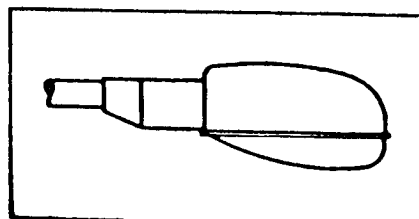
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THE PERCUSSION

MUSICAL INSTRUMENTS

IN THE GOVERNMENT MUSEUM, MADRAS

By N. Devasahayam

India is noted for dance, music and musical instruments. Out of the commonly accepted types of musical instruments, namely, the stringed, wind and percussion, the last mentioned has the earliest origin. Percussion instruments contribute rhythm and rhythm is man's oldest impulse. Primitive man expressed his emotions in rhythmic forms which resulted in dance and music. In the beginning the primitive man's hands and feet themselves served as musical instruments. Then rattles made out of nut-shells, seeds and stones strung together, began to appear. This thought continued and resulted in producing sound from the hollowed-out materials which culminated in drums and its varieties.

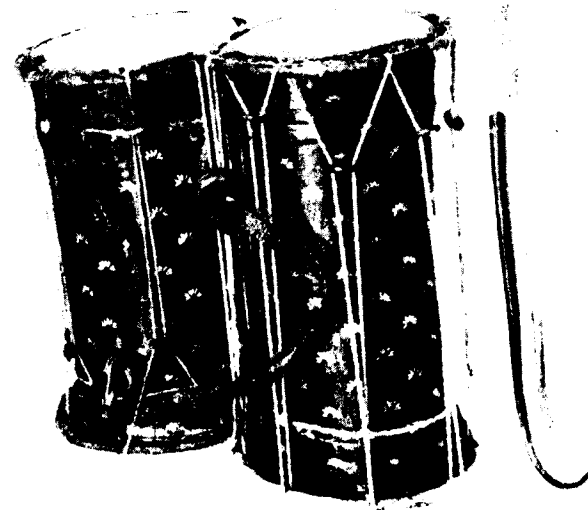
Sanskrit literature contains reference to musical instruments beginning from 3rd century B.C. While depicting the life of Buddha, our early artists have sculptured various types of musical instruments like the veena, the flute, drums, etc., in Bharhut, Sanchi, Gandhara, Amaravathi and Nagarjunakonda (1st century to 7th century A.D.). There were passing references about the varieties of drums like cylindrical, twin and triple types in the sculptures of the Gupta period.



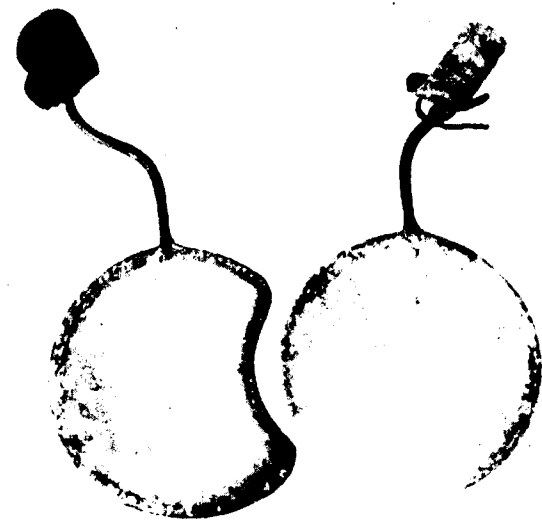
TABLA



DOLAK



PAMBAI



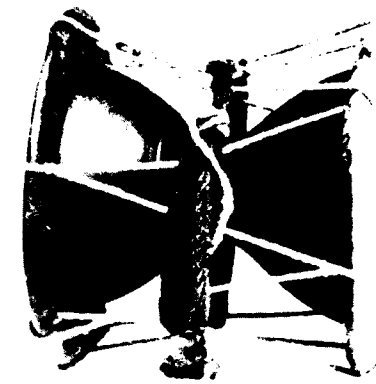
SURIYAPIRAI
&
CHANDRAPIRAI

The Madras Government Museum has got a rich collection of about 125 South Indian musical instruments classified under the heads, the autophone, aerophone, membranophone and chordophone and about 50 enlarged photographs of the musical instruments depicted in various Indian sculptures. From among this collection, about 25 concert and temple drums are displayed in the Musical Instruments' galleries of this Museum, chief among them are as follows :

Mridangam is the most ancient percussion instrument. In shape it is cylindrical, hollowed out of a block of wood and both openings are covered with skin. The instrument is played with two hands, wrists and finger tips. It is commonly used in South Indian music parties, Kathakalashapams and Bhajanas.

Belgian Glass Drum is another interesting exhibit resembling the mridangam in all respects except that the shell is made up of glass instead of wood. The instrument, placed in the lap of a seated individual is played with both hands.

Dolak is a simpler drum found all over India and is slightly smaller in length than that of the mridangam. Here the two heads are plain and the instrument is played with the hand and a stick and is used throughout India in folk music, dance, festivals and ceremonies.



UDUKAI

Tabla and Baya is nothing but a modified mridangam in the sense that the Tabla's head corresponds to the right head of the mridangam and the Baya's head to the left of the mridangam. This instrument is used in Theatrical music and in the Hindustani music parties of North and South India.

Damaram is a pair of conical drums of the same size and is taken on a bullock during temple processions. It is played with two sticks, one curved and the other straight.

Tavil or the periamelam, a prominent exhibit in the gallery, is also a cylindrical shell hollowed out of a solid block of wood. It is used in the nageswaram band and the right head is played by the right hand, wrist, and fingers and the left head is struck with a stick in the left hand.

Kanjira—is an ancient percussion instrument. It consists of a circular wooden frame of about 10" in diameter and 2½" broad. On one side it is covered by a sheet of thick skin. The frame is provided with three or four pieces of metal or coins for

making a jingling sound when the instrument is shaken. It is held in the left hand and the palm and fingers of the right hand are used to strike the skin. It is commonly used in concerts and Bhajana parties.

Tambattam—Consists of a round frame of wood about six inches wide and about 3 feet in diameter covered on one side with skin. It is held in the left hand and played with the fingers of the right hand. A stick is also used held by the fingers of the left hand. It is used in festivals and in funerals.



KANJIRA

Suriyapirai and Chandrapirai are in shape of the moon and are tied on the foreheads of two persons and played with a stick. These are used in Mariamman temples.

Udukkai or Udukku is the hour-glass shaped small drum laced with twine. It is made of brass, wood or clay and is held in the left hand and played upon by the fingers of the right hand. It is used by the street singers and fortune tellers in Tamil Nadu.

Davandai is just like udukkai but slightly bigger in size and is played with a stick and is used in Mariamman temples.

Damarukam or Damaru is a small drum like an hour-glass of the same shape as the Udukkai but having knot at the end of a string wound round the middle. It is held in the right hand and rolled from side to side. Nataraja is represented with this instrument in one of his four hands. It is used for accompanying devotional and ritualistic folk music and is associated with magic shows, spells and other primitive rites of the common man.

Timila is a double-faced drum in the shape of an hour-glass and is suspended vertically near the waist and played on one side by the hand. It is used in the processions of temple deities in Kerala.

Idakka has got an hour-glass shaped resonator and is just like Udukkai in other respects. It is slung over the left shoulder and the right side is beaten with a stick held in the hand. It is an important accompaniment to the Kathakali dance drama of Kerala.

Pambai consists of two cylindrical drums, each about one foot in length being one over the other and tied together. The outer surface is coloured and painted with flowers. It is hung in front of the body and tied to the waist. It is played while standing with two sticks. It is used as an accompaniment to folk dramas and ballads in South India.



BELGIAN GLASS DRUM

Indramoo or *Boomadu Vadyam* is a hollow cylindrical drum measuring about 7" in length with two striking faces covered with skin. The instrument is used by street mendicants.

Panchamukha Vadyam is the most interesting exhibit and it is developed from the ancient pot drum. It is a huge five-faced temple drum mounted on a special stand or kept in position on a four-wheeled carriage. It has five faces as striking faces and they are named after the five faces of Siva-Sadyojatam, Isanam, Tatpurusham, Aghoram and Vamadevam. The sound produced by each face is different but the general quality of the sound is very similar to that produced by the mridangam. This instrument is played with both hands and is referred to as *Kudapanchamukha Vadyam* by Arunagirinathar. It is used in temple music and is found in the temples of Tiruvarur and Thiruvannikkaval.

Nagara is one of the oldest percussion temple drums in existence and is exhibited prominently in the gallery. This is a large hemi-spherical kettle covered with hide. The

shell is of copper, brass or iron. It is used in religious worship in most of the temples and religious institutions in India. The instrument is placed on a two-wheeled carriage or on a decorated elephant and the player beats the drum with two curved sticks.

The Musical Instruments Gallery of the Madras Museum is one of the best and most well maintained galleries, but there is still much to be done. Schemes and plans are ahead to have a series of built-in cases with concealed fluorescent lightings, to accommodate all the musical instruments by modern display techniques. Attempts are being made to record the music of some selected musical instruments exhibited in the gallery, in tape, which can be played as and when the visiting children insist on knowing the actual music produced by each instrument. There is a provision for the physically handicapped children to touch and feel some musical instruments that are in the reserve collection of the Museum. For the benefit of the visiting public and the students of musicology, the Museum has brought out a descriptive catalogue of the Musical

Instruments in the collection by Prof. P. Sambamoorthy, and it is being reprinted to meet the increasing demands. It is also being planned to have, along with the exhibit and its descriptive label, the photograph of that exhibit showing how the instrument is being played. Newly acquired musical instruments are being exhibited in the temporary or special exhibition as a routine educational programme of this Museum.

As a special item of educational service, the Museum had arranged a demonstration of about 25 rare and ancient musical instruments exhibited in the Museum by Thiru M. R. Balakrishna Naidu on 18th January 1973 in the Museum Theatre. Prof. Sambamoorthy and Thiru M. Ananthanarayanan, I.C.S., who were the chief guests on that occasion, felicitated Thiru Balakrishna Naidu, who played on the *Panchamukha Vadyam* in the form of a dancing *Ardhasthiswara*.

MUSICAL INSTRUMENTS IN SCULPTURES

By
V. Domodaran, Research Artisan of Ancient and Modern Music Instruments).

In India, the art of Music and musical instruments seem to have reached perfections even earlier than Indus Valley Civilisation. This is evident from the findings in the Indus Valley excavations of the 7 holed-flutes the different kinds of highly developed drums (one of them resembling the present day *Miruthangam*), types of stringed instruments artistic dancing poses, etc. Similarly, the development of musical instruments must have gone on for centuries before it reached this refinement.

The study of the history of Indian Musical Instrument has a great cultural value. South India is justly famous for her mighty achievements in the realm of music. The earliest example of Raga Sanchara in notation is found in the Kudimiya-malai inscription (7th Cen. A.D.) in Pudukottai. This is the first instance of Visual notation in Indian Music. Splendid specimens of musical iconography and dance iconography are enshrined in the

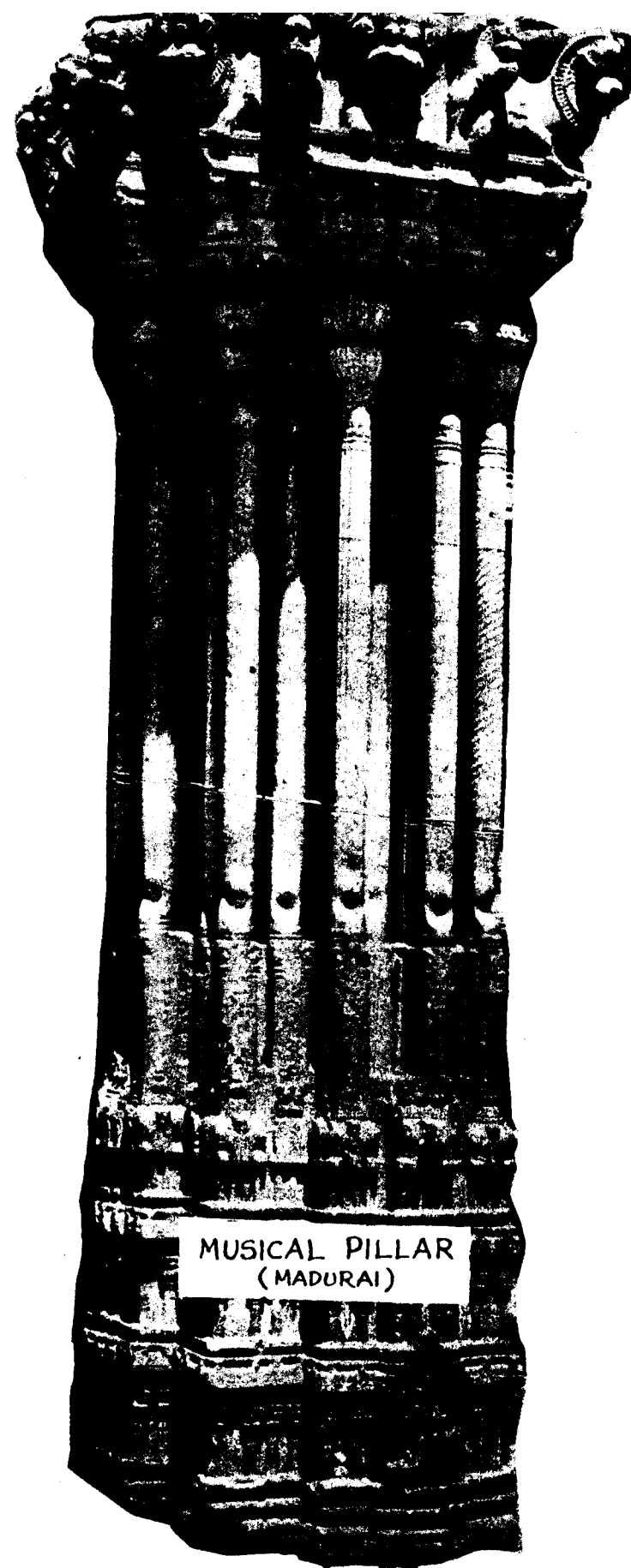
temples of South India. In the temple of Tirukkodikaval in Thanjavur district a scene depicting a victorious army being greeted by a band Musicians, dances and Kollattam performances is depicted.

The series of sculptures depicting music parties gives us details relating to the number that constituted a concert party, their position, sitting or standing the accompaniment used, the number of strings in the



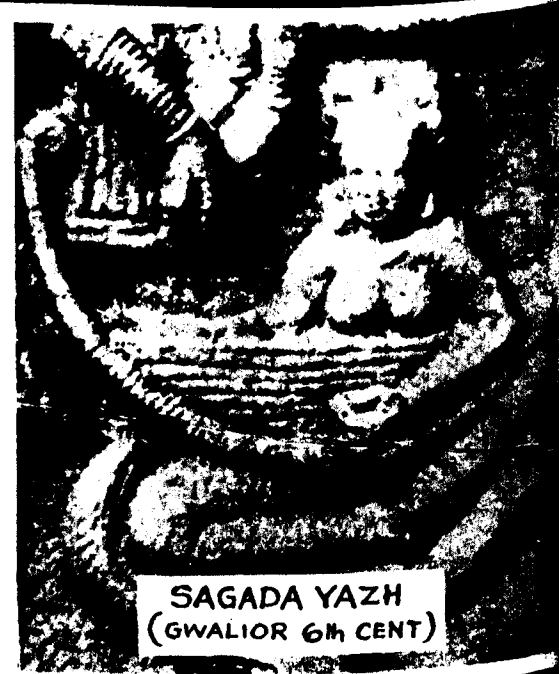
PANCHAGI
(A STRINGED INSTRUMENT)





**MUSICAL PILLAR
(MADURAI)**

in which the instruments were held and played and many other factors relating to the instrumentation. The Vina having frets for only half of the finger board is depicted in the temples at Halebid and Belur in Mysore State. These sculptures depict one of the stages in the evolution of the Vina and hence is of historical interest. The earliest sculpture with frets for full finger board is seen in the temple of Pattisvaram near Kumbakonam. The sculpture of a lady playing a bowed instrument in the temple at Thirumagudalu in Mysore State (10th cen. A.D.) is alike of very much interest. This is the earliest sculpture depicting a bowed instrument. Curiously enough,



**SAGADA YAZH
(GWALIOR 6th CENT)**

after a great deal of sophistication abroad, it has come back to our concert platform as the violon. Some aver that it is a much better accompaniment to our type of melody.

A figure performing on the Pancha Mughha Vadyam (Five-face percussion Drum) is sculptured in the base of the northern part of the stone chariot in the Nataraj temple at Chidambaram.

In the absence of auditory records of the music of the ancient times, the sculptures of musical instruments throw a flood of light on



**NAGA VEENA
(BELUR)**



the sophistication achieved in the field of music.

The great Tamil story poem "Silapathikaram" by Urtti Adigal, a work of dramatics and music prevailing in the Southern part of India during the 4th and 5th Century B.C.

Instrumental Music

Instruments are divided into three

groups mainly : 1. Wind instruments 2. Stringed Instruments and 3. Percussion Instruments.

A further classification namely :

1. Folk; 2. Tribal; 3. Temple; 4. Concert and 5. accompaniment is also often made to distinguish the 500 different musical instruments known so far in India. We find several sculptures depicting wind instruments. There are specimens of sculptures playing Bhavalai, Sanghu, Kombu and Konakombu (Shaped Horns).

There is sculpture in Konark



**NAGULA VEENA
(HALEBID)**



ADITHAMPURA
(THIRUMAYAM)

depicting playing with Ekkaalam. In Belur, Halebid, Somanathpur and Sanchi we find sculptures depicting several kinds of flutes as mentioned in ancient literature.

The Dravidian Yazh

Similarly, among stringed instrument Yazh or harp is an ancient instrument which is considered Dravidian in concept. In Amara-vathi and Goli 3rd Cen. there are sculptures depicting different kinds of Yazh. In Tirumayam, Pudukkottai State 8th Cen. we find a rare specimen of Magara Yazh, Narada playing on Magara Yazh and a Rishi playing an Adi Tambura. This is a rare specimen of Yazh.

In Sanchi an unusual Sagoda Yazh with 14 strings capable of different speaking lengths is depicted. This would enable tuning for two kinds of Ragas simultaneously. The Yazh was the principal accompaniment to vocal music in ancient times.

The Yazh was tuned to the fundamental scale. When other scales had to be played, the tunic note was shifted to the particular string of the Yazh and played.

Similarly the evolution of Veena from Nakula Veena, Veda Veena, Naga Veena, Kinari Veena, Mahati Veena, Bhunga Veena Vibranjim Panchagi, are also found on several sculptures in Madurai, Kumbakonam, Belur, Halebid, Pudukottai, Pattadak, Somanathapur, Pattisvaram, Mahabalipuram, etc., which is of historical value. These sculptures provided valuable materials for studies.

In Silappadigaram, it is stated that during Arangetram of the famous dancer Madavi, 35 percussion instruments were used, most of these instruments are to be found in sculptures and ancient literatures.

NAGAVEENA
(KAILASANATHA TEMPLE
KANCHIPURAM)

T. I. I. C.

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The Corporation also offers FOREIGN EXCHANGE CREDITS by way of loan to small and medium scale Industries for import of machinery and, in special cases, for meeting the cost of technical know-how and engineering fees. In such cases, the procedure for issue of import licences has been simplified.

THE TAMILNADU INDUSTRIAL INVESTMENT CORPORATION LTD.

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567-

TRADITIONAL FOLK DANCES AND MUSIC OF TAMIL NADU

Tamilnadu is endowed with a great cultural heritage with rare types of stylised forms of indigenous dances and music which have preserved their pristine purity and grace through several centuries. The Soul of India lies in its villages and the Soul of her Art lies in her ancient Folk Forms of Art. The process of evolution of these Folk Forms owes itself to the vocation of the people. The village folk in Tamil Nadu are mainly engaged in agriculture which involves much physical labour and strain. The various phases of agriculture have their seasons. As the arts of the village folk are inter-twined with their vocation, their forms of art also changes along with the phases of agriculture.

Thus the calm and serene folk music, which predominates from the time of ploughing the fields, gives place to folk dances performed in ecstasy after the harvest.

Folk Music—In the villages, music rings alongside with the work of the people. Tunes spring from their toil. Flow of music synchronises with the sowing of seeds. Music at the plough! Music at the fields! Music at the Canal Bunds! Music while rearing the crops! Music while harvesting the produce! Music while thrashing the grains! Thus the whole village life reverberates with music.

One of the popular forms of folk music is *Villuppattu*. Six to eight singers use a long bow-like instrument with tinkling of bells attached to the thick string of the bow. A mud pot gently beaten in the mouth by a leather piece and an *Udukku* are also used. The themes centre round the meritorious deeds of Gods and Goddesses, heroes and heroines. *Katta Bomman* is another favourite theme. The leader of the group will narrate the song stage by stage and the rest will punctuate it by repetition.

Kaichilambu—*Kaichilambu* is a sort of folk *Katha Kalakshepam* to the tune of music and musically

sounding *silambus*. Group dancing also is done to the tune of this music.

There are other kinds of popular folk music like *Harvest Songs*, etc.

Folk Dances—Folk dances can be grouped under three major heads for convenient study: (1) Dances by Professional troupes; (2) Community Dances among all sections of people during social and religious festivities; and (3) tribal dances of the hills and forests.

Dances By Professional Troupes.

Among the folk dances of professional troupes, *Karagam*, *Kavadi*, *Puravi Attam* or *Dummy Horse Dance*, *Therukoothu* (Folk Play) and *Bommallattam* (Puppetry) are the most prevalent popular varieties.

Karagam—*Karagam* or dancing with a decorated pot of vessel on the head to the accompaniment of *Nagaswaram* Music is a Folk Art popular in Tamilnadu. It is danced mostly for propitiating *Mariamman* and other village deities to get rains and to ward off epidemics.

Kavadi—The *Kavadi* is a well known type of folk dance. Most of the devotees of Lord *Muruga* take to it as a devotional offering to the Almighty. The *Kavadi* is an arched wood and cloth work. The short wooden base rod held on the neck of the dancer is swung by him round and round according to his dance movements. Some professional experts display amazing feats of skill in it by balancing and moving the *Kavadi* all over the body and in various poses without the support of the hands. The dance is performed according to the varied tunes of the popular tune called '*Kavadi Chindu*'. The orchestra is *Naiyandi Melam* consisting of two *Nagaswarams*, two *Thavils*, *Pambai* and *Thamuku*.

Naiyandi Melam is an orchestra of instruments as described above. By itself it can give a concert and it is used as accompaniment also in *Karagam*, *Kavadi*, *Dummy Horse Dance* and other Folk Dances. The peculiarity of it is that the instrumentalists too dance while playing their instruments.

Puravi Attam or Dummy Horse Dance—In the *Puravi Attam* the

dummy horse is made with bamboo framework covered over with thick paper or cardboard. It is so lavishly decorated as to resemble a well-bred palace-horse or war horse. Through a hole at the back of the horse, the dancer stands, with the upper portion of his body above the waist being visible and with his legs fitted up with short wooden stils. In this mode, he appears as if riding on the horse and he dances to the tune of the folk orchestra referred to above.

Bommallattam (Puppetry)—In the *Bommallattam*, the characters of a drama are represented by decorated dolls and their movements are manipulated by black strings held by experienced craftsmen standing behind a short screen. Scenes from puranic dramas like *Harischandra*, *Rukmangada*, etc., are generally depicted. The music is not only of a high order approaching the classical mode but also very appealing. The acting of the dolls appear almost human and they are made to dance *Bharatha Natya* items too like *Alarippu*, *Jathiswaram* and *Thillana*. The puppets are sizeable and the music is refined.

Peacock Dance—The dancer wears the mask of a peacock and also its feathers and dances to the tune of music, imitative of the movement and gait of the peacock. This dance is generally performed as an interlude in *Karagam* and *Kavadi* dances.

Folk Drama—The folk plays of Tamilnadu, popularly known as '*Therukoothu*' are generally about Puranic themes and they are presented with music, dance and dialogues. The Dancer-Actor wears antique and sometimes comic costumes. Good *Therukoothu* troupe may be said to be mobile educational institutions, for they try to inculcate in the minds of the masses a deep love of God, good conduct, social virtues and a capacity to distinguish the good from the bad. Popular *Therukoothu* troupes are prevalent in the various Districts of Tamilnadu like *Tanjore*, *Madurai*, *Ramanathapuram*, *Tirunelveli*, *North Arcot*, *South Arcot*, etc. These folk plays are performed generally during occasions of Temple Festivals.





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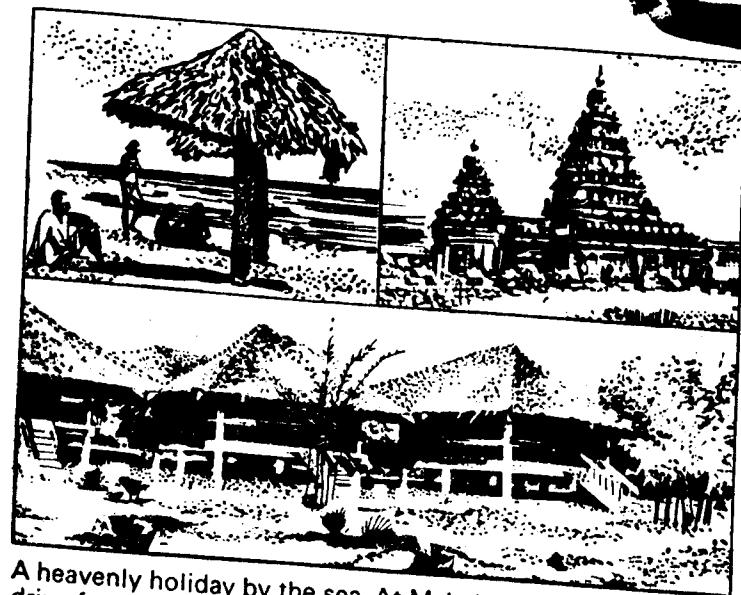
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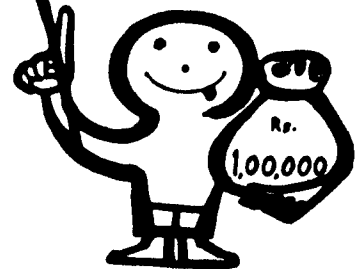
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GANDHI IS FOR EVER

Tamil Nadu and the Tamils can take pride in having helped in the moulding of the image of a shy young barrister into a Mahatma and also in the fashioning of his matchless weapon, Satyagraha.

Firstly, it was the Tamils in South Africa who discerned a true leader in Gandhi and gave the cause he expoused, such unstinted loyalty and brave, unflinching martyrdom that the leader of men in Gandhi was born.

Thus Gandhi returned to India with a philosophy of his own and a new technique of social and political agitation. During his tour of Tamil Nadu to muster opinion against the Rowlatt Act, he repeatedly cited the examples of his South African Tamil colleagues—Nagappan, Narayanaswamy and Valliammal.

While Gandhi was Rajaji's guest in Madras City they discussed plans for the great 1919 Satyagraha. Gandhi told Rajaji early the next

morning that the idea came to him the previous night in a dream, that they should call upon the country to carry out a general hartal and observe the day as one of fast and prayer.

Accordingly, it was from Madras that a call to the Nation went to observe fast, to pray and to suspend all business on April 6, 1919, instead of on March 30 which was fixed previously. That call from Madras galvanized the whole country. Again it was in Madurai in Tamil Nadu that Gandhi spurned his superfluous clothings and adopted the famous 2-piece suit of dhoti and upper cloth, the simple dress by which Gandhi is familiar throughout the world.

Surprisingly enough, Gandhiji himself admitted that he was possessed more of the traits of the Tamilian than that of any other people in India. No wonder Tamil Nadu remembers Gandhi for ever not merely on this birth day, the 2nd October.

WHAT TAMIL NADU AIMS TO DO IN FIFTH FIVE-YEAR PLAN

In the approach to the Fifth Plan, the Union Planning Commission has aimed at achieving certain levels of development under various sectors, in order to ensure the fulfilment of some of the minimum needs of the common man atleast by the end of the Fifth Plan in all the States. The objectives of this programme are—

(a) to provide an all-weather link road to every habitation with population of 1,500 and above;

(b) to launch a massive programme of rural water-supply;

(c) to have 100 per cent enrolment in the age-group 6 to 11 and atleast 60 per cent enrolment in the age-group 11 to 14;

(d) to cover atleast 40 per cent of rural population by providing electric supply;

(e) to have a Primary Health Centre for every Panchayat Union, with sub-centres for every 10,000 of population and

(f) to provide house-sites to the landless workers after legalising the occupation of house-sites by the tenants, and to improve the conditions in the slums in the Urban Centres having a population of eight lakhs and above.

Rs. 148 Crores for Minimum-needs Programme

The Union Planning Commission suggested, after discussion with State Government officials, that a programme of Rs. 148.31 crores will be called for to achieve the objectives outlined under the minimum-needs programme and that this outlay should be spent in the following manner. The amount indicated by Government of India are grossly inadequate to reach the targets laid down by us for the Fifth Plan. The provision now made are indicated at the next page:

Emphasis is being laid in the minimum-needs programme of Fifth Five-Year Plan on development of

rural sector of the State, so that the continued migration to the overcrowded urban centres is discouraged and controlled. This is also important from the point of view of removal of rural poverty. Employment opportunities and improvement of living conditions in the rural areas are conditions precedent to any reduction of levels of poverty in the country. It is from this point of view that the State has provided much larger sums in the Fifth Five-Year Plan than have been indicated by the Government of India. Our programme includes, in particular, Rs. 15 crores for link roads in Panchayat Unions, connecting habitations with a population lower than 1,500 and Rs. 15 crores for construction of elementary school buildings. A sum of Rs. 15 crores has also been set apart for bringing up to standards minor irrigation sources in the rural areas. We hope that as a result of these outlays proposed, adequate employment opportunities will emerge for the rural poor and at the same time the productive resources of the State will be improved.

Rs. 25 Crores for Slum Improvement

Though the Government of India have considered only slum improvement as part of minimum-needs programme, this Government has all along been of the view that a programme of slum clearance will be the only solution to the problem of crowded urban slums; we have made a provision of Rs. 25 crores for this item to carry out works mainly in Madras City and other major towns like Madurai and Coimbatore. Out of about 24,500 Harijan Colonies in the rural areas, during the Fourth Plan period, we have given electric supply to 23,450 Colonies. During the Fifth Plan

period the balance will also be electrified. We are proposing an integrated child care and nutrition programme at a cost of about Rs. 57 crores covering nutritional feeding and nutritional education. We have made a provision of Rs. 9 crores towards sites for landless agricultural labourers.

AGRICULTURE.

There has been a marked increase in production in the agricultural sector during the four Five-Year Plans in Tamil Nadu. The increase in production was to a considerable extent due to the extension of agriculture to new areas in the fifties. During the sixties, the increase in production was accomplished largely by stepping up agricultural productivity. Between 1951-52 and 1960-61 the foodgrains production rose from 36.07 to 53.96 lakh tonnes. The area under foodgrains cultivation also rose from 44.19 lakh hectares to 51.01 lakh hectares. The foodgrains production rose from 53.96 lakh tonnes in 1960-61 to 70.34 lakh tonnes in 1970-71 and is expected to reach 74 lakh tonnes by 1973-74. The Fourth Plan target of 79 lakh tonnes of foodgrains could not be achieved mainly due to shortfall in fertiliser supplies which are vital for the success of the high yielding varieties programme. Only 2.3 lakh tonnes of nitrogen are likely to be available as against 3.15 lakh tonnes needed in 1973-74.

Increased Productivity

During the Fifth Plan period, emphasis will be laid on increase of productivity by ensuring supply of good seeds and other necessary inputs like fertilisers, pesticides, etc., in time. It is proposed to step up foodgrain production from the expected level of 74 lakh tonnes by the end of Fourth Plan to 90.50 lakh tonnes by the end of Fifth Plan. The following table indicates the

targeted production in Fifth Plan period :—

	1973-74 production in lakh tonnes.	Fifth Plan.
Rice ..	57.00	67.00
Millets ..	15.00	20.00
Pulses ..	2.00	3.50
Total food- grains.	74.00	90.50
Sugarcane.	11.00	14.00
Cotton (lint).	0.72	0.90
Oil Seeds ..	11.50	15.16

Emphasis will be laid on production of quality seeds by the Agricultural Department itself and necessary facilities for growing seeds will be created in the State Seed Farms. The aim is to produce enough seeds

EMPHASIS ON MINIMUM- NEEDS PROGRAMME IN FIFTH FIVE-YEAR PLAN

	Amount indicated by Government of India.	Amount provided in Draft Fifth Plan.
	(RS. IN CRORES)	
Elementary Education ..	19.63	†34.69
Nutrition (including mid-day meals schemes and CARE component).	57.14	57.14
Rural Water-supply ..	25.00	40.00
Rural roads ..	10.00	40.00
		*15.00
Health ..	17.54	21.69
House-sites for landless workers	9.00	9.00
Environmental improvement to slums	10.00	10.00
Rural electrification ..	Nil.	50.00
Slum clearance ..		25.00
	148.31	302.52

* Provision for link roads for habitations with population less than 1,500.
† Includes a provision of Rs. 15 crores for elementary school buildings in rural areas.

to cover 5 per cent of the total area under Paddy and Millets and 10 per cent of the total area with improved seeds regarding pulses. It is also proposed to establish large elite coconut seed farms. 1.2 to 2 per cent of the normal area under groundnut will be covered by improved seeds every year. Emphasis is also being laid on setting up two more seed processing units in addition to the four units which would be in position by the end of Fourth Plan. It is proposed to step up short-term and medium-term co-operative credit lendings to Rs. 105 crores and long-term lendings to Rs. 34 crores by the end of the Fifth Plan.

All efforts in extension work and credit facilities will bear fruit only if adequate quantities of fertilisers are made available by the Central Government. Experience during the current Plan has indicated the vital role played by fertilisers, shortage of which has contributed to shortfall in production. The massive programme of agricultural production proposed during the Fifth Plan needs additional fertiliser as indicated below :—

	N	P	K
	(LAKH TONNES)		
1974-75	3.25	1.00	1.00
1975-76	3.50	1.25	1.25
1976-77	3.75	1.50	1.50
1977-78	4.25	1.70	1.70
1978-79	5.00	2.00	2.00

High yielding varieties also require an adequate supply of pesticides. While there is greater participation of non-Government agencies in distributing fertilisers and pesticides, the attendant need to continuously check the quality of these vital inputs should not be ignored. It is proposed to have a rigid quality control of pesticides and chemicals sold through trade channels. An organisation is being set up to test a large number of samples. A programme of ground-spraying by local entrepreneurs is also planned during the Fifth Plan. This will provide adequate employment opportunities and involve local talent in launching organised pest control campaigns. Mobile repair units will be set up in each district; a large number of

MARKED INCREASE IN AGRICULTURAL PRODUCTION

mechanics and maistries will also be trained in maintaining the plant protection equipments. It is proposed to start an agricultural machinery Training Centre in a central place in the State. This will be used to give training to staff as well as farmers in Tamil Nadu. In addition to the existing 6 workshops, it is proposed to set up 3 more workshops for maintenance of agricultural machinery.

Modernisation of Irrigation Systems

Most of the irrigation system in Tamil Nadu are very old and have been developed during the past many centuries. Many of them are anicuts with open head channels with inadequate facilities for controlling the flow of water into the branch channels. Modernisation of these irrigation systems including the provision of controlling devices at the head works and at all the main sluices was taken up in the Fourth Plan period. Substantial work has been done under the Periar System and the Tambarabarani System during the Fourth Plan. It is proposed to take up the remaining portion of the Vaigai and the Tambarabarani Systems and also take up modernising all the other irrigation systems. For these programmes a provision of Rs. 63.34 crores has been made under the Fifth Plan period.

Under Minor Irrigation, it is proposed to sink 10,000 filter-points, 12,500 private tube-wells, 4,000 bores in existing open wells and to deepen 10,000 open wells through the use of departmental machinery. This will be supplemented by efforts of Agro-Industries Corporation and other private agencies.

Taping of Ground Water Potentiality

It is well known that Tamil Nadu has been for many year tapping major portion of the surface water potential and has been now left with no major river to tap. However, there are still a large number of small sources widely scattered throughout the State, which, if harnessed, will bring benefits both as sources of irrigation and for prevention of floods. Medium irri-

gation schemes have been proposed for construction during the Fifth Plan period for which a provision of Rs. 2 crores has been made. In addition, a provision of Rs. 30 crores has been made for taking up works under special minor irrigation programmes for construction of new tanks and improving the existing tanks.

Many of the 27,000 tanks coming under the control of Panchayat Unions require standardisation and in some cases major repairs. A large number of them, which are in ex-Zamin tracts suffered, continued neglect in the earlier years. A provision of Rs. 15 crores has been made during the Fifth Plan period for their improvement.

The State has reached a stage where utilisation of ground water potential has to be carefully planned and regulated. Unless a detailed and a scientific survey is made, this will not be possible. A provision of nearly Rs. 8.14 crores has been made for having an intensified ground water survey covering the whole State. This will enable us to frame definite policies for utilisation of ground water. Adequate provisions have been made for purchasing suitable machinery for the Agriculture Department and the Agro-Industries Corporation for assisting individual ryots to tap ground water using boring equipment.

Development of Power

The need for development of power requires no emphasis; more so in Tamil Nadu, which does not have much of mineral wealth based on which industries can be started and where power happens to be the main basis for further industrial development. In addition, Tamil Nadu, with very little of surface water potential to be tapped, has to be depend for its improvement of irrigation on power development only. The fact that there are a number of electric pumpsets and that a substantial percentage of the total energy consumed goes towards agricultural pumpsets emphasises the role of electricity in agricultural development. All this points to the need to take adequate steps to develop generation capacity to meet

the full requirements of the State, both to sustain and improve the present levels of industrial as well as agricultural production. Based on our experience, we have calculated that we have to provide for a growth of 12.5 per cent per annum both in respect of peak demand needs and in the total energy consumed.

The Plan provides for Rs. 446 crores for power; out of this, Rs. 331 crores is on generation. The State Government has put up plans to tap even small schemes of hydel potential available within the State. Besides, it has taken up schemes like Kadam-pari pumped storage, Koniar pumped storage and Velar pumped storage which will help to meet the peak load demand. It is well-known that except for small Hydro-Electric Schemes and the Kondah Hydro-Electric System, the Major Hydel Schemes like Mettur and Periar Schemes are all linked up with irrigation despatches and have, therefore, limitations in becoming firm generators of power. Our only hope lies in the creation of additional thermal generation capacity. Clearance for the Tuticorin and Mettur Thermal Scheme is therefore urgently sought for. It take about 5 years from the date of starting work for Thermal Generation Scheme to be completed. Our efforts in the Fifth Plan will give us benefits mostly only in the Sixth Plan period. Therefore, we have to plan our generation programmes in the Fifth Plan keeping in view the demand targets of the Sixth Plan. The proposed outlay will give only an additional 825 M.W. of installed capacity in the Fifth Plan period and 1,990 M.W. capacity in the Sixth Plan period. This will still leave a gap of 1,364 M.W. at the end of the Fifth Plan.

In addition to the increase in the generation capacity planned by the State, a massive effort has been proposed for reduction of line loss by way of installing shunt capacitors and improve the transmission and distribution net work. In addition, it is proposed to monitor the line loss in each one of the sub-systems individually and try to rectify defects found in them. A provision of Rs. 90 crores has been earmarked for this purpose.

MODERNISATION OF IRRIGATION FACILITIES

Exploitation of Fuel Resources

In the present state of crisis in the fuel economy of the country, it is obvious that all available fuel resources should be fully exploited. Care is also to be taken to minimise the strain on transport of fuel resources from point to point. It is from this point of view that further development and exploitation of the Neyveli mines become very important. It takes 7 to 10 years for an open cast mine of this kind to be fully developed. The power crisis in the State points to the need for action to develop an additional pit site thermal station of 1,000 M.W. capacity at Neyveli. Even if we start today, power will be generated only at the beginning of the Sixth Plan. Keeping all these factors in view, the State Government feels that action should immediately be taken to initiate work on the second mine cut at Neyveli and a thermal station of 1,000 M.W. capacity. Kalpakkam Atomic Energy Plant should be expanded to the extent of 470 M.W. of additional generation capacity. Any delay would worsen the power situation in the State for years to come.

Rapid Industrialisation

Tamil Nadu has more than 30 per cent of its population living in urban centres. The per capita availability of cultivable land being only 0.2 hectares, there is always a compelling need for the rural population to migrate to urban areas in search of other avocations. Tamil Nadu has to depend more and more on rapid industrialisation and development of secondary and tertiary sectors to improve its overall economy. With this in view, we have done our best during the Fourth Plan to take part in direct industrial investment through the Tamil Nadu Industrial Development Corporation which has set up a Cement Plant at Rajapalayam and a continuous Casting Plant at Arkonam. It is in the process of setting up a Nylon Plant. In addition, TIDCO is also promoting industrial growth in the joint sector by sponsoring

certain ventures in collaboration with private entrepreneurs. Preliminary work is under way in the case of a tyre plant, certain chemical plants and a pharmaceutical project. A massive fertiliser project promoted in the joint sector by TIDCO is nearing completion at Tuticorin and will go into production during the early years of the Fifth Plan. Among the new projects, planned are a SPONGE Iron Plant attached to the continuous Casting Plant at Arkonam, a machine tools plant, expansion of the Cement and continuous Casting Plants, besides expansion of the SPIC fertiliser plant. A provision of Rs. 40 crores has been made towards the various new schemes to be undertaken by the TIDCO. There are certain gaps in the facilities provided for entrepreneurs interested in starting medium and large scale industries. We have therefore set up the State Industries Promotion Corporation with a view to giving a package of incentives, including under-writing of equity and provision of term loans for new companies. SIPCOT is also developing an industrial complex at Ranipet located at about 100 Kms. away from Madras. For the development activities to be undertaken by SIPCOT, a provision of Rs. 15 crores has been made.

We have set up a Textile Corporation entrusted with the task of reviving the sick mills in the State. It is noteworthy that out of 12 mills taken over so far by the Textile Corporation, 7 units have reached the break-even point.

Tamil Nadu is located in a strategically advantageous position for the establishment of defence industries. It has also adequate skilled and well-trained labour. It has a base for ancillary industries which can serve well the needs of modern and sophisticated defence industry. Government of Tamil Nadu have been pleading with the Government of India for the regional dispersal of defence industries. We hope and trust that in the coming Plan, a deliberate decision will be taken to locate more such units in the State.

It has been reported that the pace of activity on Salem Steel Plant is being slowed down. Tamil Nadu hopes and trusts that this will not be the case. Expeditious completion of Salem Steel Plant should be ensured by adequate provisions being made in the Fifth Five-Year Plan.

It is proposed to set up immediately three sugar factories in the co-operative sector and to take steps to instal and develop another 8 units. Towards this, a provision of Rs. 10.50 crores has been made in the Fifth Plan period. We are also planning to modernise the textile mills taken over by us in order to make them more economic. For this, a provision of Rs. 5 crores has been made.

Under the Small-scale Sector, during the Fourth Plan, the State Government promoted the Small Industries Development Corporation. SIDCO renders assistance to small-scale entrepreneurs by way of supply of machinery and workshops on hire purchase, supply of raw materials and other technical assistance in setting up industries. A provision of Rs. 6.45 crores has been made for the Small Industries Development Corporation during the Fifth Plan.

Position of Handloom Industry

Special mention must be made regarding the position occupied by the handloom industry in the State. About 5 lakhs of weavers depend on handlooms in this State. In respect of handlooms in the Co-operative Sector, the State Government is giving all the support it can, by way of organising and strengthening the Co-operative structure, improving the managerial talents available to the central co-operative apex organisation, by making arrangement for timely supply of yarn at fair price through the Co-operative Spinning Mills and by granting incentives by way of rebate on the cloth sold by the handloom industry. Provision has been made

Rs. 446 CRORES FOR POWER GENERATION

RAPID INDUSTRIALISATION IS AIMED AT

in the Fifth Plan to expand Spinning mills at a cost of Rs. 2.12 crores. The State Government has made a provision of Rs. 17.88 crores for assisting the Handloom industry. All these will not be effective unless the Centre comes forward and recognises the need to sustain this employment-oriented industry by reserving certain items for exclusive manufacture by handlooms and also makes suitable arrangements for supply of essential raw materials without any hitch. The State Government hopes that at least at this stage, the Centre will come forward to protect and sustain this labour intensive industry, which is capable of providing gainful employment to the educated as well as uneducated, and which is carried on in a widely dispersed manner, avoiding all the attendant problems of urbanised industrialisation.

During the Fourth Plan period, the State Government started work on the development of Sericulture in various places, which have been found suitable for this purpose. For its further development, a provision of Rs. 1.28 crores has been made under the Fifth Plan. In addition, we have set up the Handicraft Development Corporation to take charge of the marketing of traditional handicrafts of Tamil Nadu, which incidentally have a very high export potential.

Plea for an Industrial Refinery

While the State has done its best and plans to continue its efforts vigorously, the Centre must come forward to make investment in the industries in the State in a big way. Tamil Nadu has been pleading for a long time for an industrial refinery located at Tuticorin. The southern extremity of the country is not served by a refinery. Tuticorin, with its fast developing chemical industry base, needs adequate supply of naphtha. Tamil Nadu Industrial Development Corporation has already submitted a detailed project to the Government of India for the installation of a Refinery at Tuticorin which will concentrate on

petroleum fractions useful to petrochemical industries. The Project Report which has been submitted also incorporates an arrangement for the import of necessary crude. This proposal has been sent as early as 1971. Tamil Nadu requests that early action be taken on this.

The Fifth Plan provides Rs. 101 crores towards road development of which about Rs. 55 crores goes toward fulfilling one of the objectives of minimum needs programme viz., providing all-weather linkroads for all habitations of 1,500 and above. This will cover both villages and clusters of villages with population of more than 1,500. The overall roads programme will enable laying 2,700 Kms. of new roads and improving 6,300 Kms. of existing roads.

A New Minor Port in Ennore

The Fifth Plan also aims at the creation of a new minor port at Ennore in Tamil Nadu at a cost of Rs. 1.31 crores. This port will connect Ennore estuary with the Buckingham canal and is expected to flush the Buckingham canal periodically. It will help in implementing the programme of improving Buckingham Canal as a water way for which a provision of Rs. 4 crores has been made. In addition, the Government is providing additional facilities at Nagapattinam and Cuddalore ports.

The coal demands of the Thermal Stations at Ennore and Basin Bridge and also the one proposed at Tuticorin will have to be ultimately met by sea-borne coal. Unless the State Government has got ships of its own and can properly programme the schedule of delivery of coal, it will not be possible for us to ensure uninterrupted generation at these power stations. The State Government has therefore proposed to set up a shipping Corporation for which a provision of Rs. 2 crores is made as seed capital.

The Sethusamudram project is of vital importance from the defence point of view. It will also shorten the shipping distance from the west to the east coast of India. It will

provide tremendous employment opportunities. As years go by, costs increase. Tamil Nadu hopes that early action will be initiated on this project also in the coming plan.

While the State Government is making endeavours to improve the system of roads, any dispersed industrial development, to the south of Madras, can take place successfully only after the conversion of the meter-gauge system into broad-gauge. Government of India has declared its policy to have only broad-gauge, ultimately throughout the country. The State Government would therefore urge that Madras-Tiruchirappalli-Tuticorin line be converted into broad-gauge. It is necessary to take immediate steps to construct a broad-gauge line between Karur and Dindigul. Only this will enable a continuous broad-gauge link from Delhi to Kanyakumari.

The shortage of fertilisers in the country has led to consequential shortfalls in food production. Tamil Nadu has therefore been pleading for a new fertiliser factory to be established to serve Thanjavur delta. If approval is given now, it will be possible to establish a plan during the Fifth Five-Year Plan.

Pride of place to Education

Education has been given pride of place in the allocation of resources by the State Government during the Fourth Plan period. We expect to reach 90 per cent of enrolment in the age-group 6 to 11 and 53 per cent in 11 to 14 by the end of the Fourth Plan period, and 96 per cent in age-group 6 to 11, 64 per cent in age-group 11 to 14 during the Fifth Plan. In addition a massive programme of providing science equipment and laboratory facilities for all high schools at a cost of Rs. 10.4 crores is proposed in the Fifth Plan. While taking steps to strengthen the set-up for imparting formal education in the conventional manner, the State Government also proposes to launch a new scheme for providing out-of-school education both in the elementary and in the higher elementary stages. It is also proposed to

PRIDE OF PLACE GIVEN TO EDUCATION

have full-time craft instructors in all the schools, enabling the students to learn useful crafts, which will help them to appreciate the value of manual labour. The State Government has also proposed to set up an Institute for research and training, which will take care of research in curricula, training of teachers, etc.

The State Government has proposed to improve and make the Engineering College at Guindy as an advanced centre for post-graduate learning. With this institution as nucleus, it is proposed to establish a Technological University bringing under its control all other Engineering Colleges also. It is proposed to establish an institute of management at Madras. A total provision of Rs. 12.45 crores has been made for technical education, in the Fifth Plan.

Special emphasis is being laid in the Fifth Plan on schemes to promote and preserve traditional crafts and arts in Tamil Nadu for which a provision of Rs. 3 crores has been made.

More Medical Facilities

During the Fifth Plan, it is proposed to implement the programme of having 30 beds for every four PHCs, integrating it with the scheme of upgrading existing Government hospitals in such a way that medical facilities are evenly spread-out throughout the State. Though considerable progress has been achieved in providing medical facilities in various important centres in Tamil Nadu, there are still many areas in the State which do not have sufficient medical institutions to treat cases of special nature. The Fifth Plan aims to set up a widespread network of specialities by creating in every district headquarters hospital specialities such as Blood Banks, Ophthalmology, Orthopaedics, Paediatrics, E.N.T., and dermatology. Similarly all taluk headquarters hospitals will be provided, with specialities including Blood Banks, E.N.T., Ophthalmology and dental clinics. In order to sustain a programme of high quality and diversity, steps are being taken to train sufficient number of post-graduates in various

specialities listed above. The Plan also provides Rs. 1.58 crores for the development of indigenous system of medicine which includes improvement to the pharmacies at Madras and at Tirunelveli, setting up of herbal farms under the control of Director of Indigenous Medicine, and the opening of Siddha Wings in 100 Government Hospitals.

The Arignar Anna Cancer Hospital at Kancheepuram will be developed into a regional centre for cancer research and treatment. The Plan also provides for upgrading Madras Medical College into a post-graduate Medical Institution as part of the Centrally-sponsored scheme for higher education in medicine.

It is well-known that Tamil Nadu has been playing a leading role in the Family Planning Programme. Thanks to the sustained efforts of the Third and Fourth Plan period, the birth rate has come down to 31 per thousand. Continued efforts would be made to bring down the birth rate further in the Fifth Plan period.

During the Fifth Plan period, programmes initiated earlier to eradicate malaria and small-pox and other diseases will be continued. In addition, it is proposed to give special emphasis to the identification and cure of leprosy cases. A special programme has also been drawn to have a massive school medical inspection with necessary follow up measures.

It has been increasingly recognised that one of the factors motivating couples to adopt Family Planning methods, is ensuring the survival of their children, which depends on provision of adequate nutrition in the crucial ages 0-5, and also propagating nutritional standards and information. Having this in mind a programme of nutritional education-cum-feeding has been formulated. This will be implemented through the child care centres, nutritional rehabilitation centres and the Primary Health Centres.

Massive Efforts for Providing Water-Supply

Massive efforts have been made during the current Plan period for providing water-supply both to urban and rural areas. This tempo will be kept up during the Fifth Plan period also. In addition, the

work on the Veeranam Project which will give 40 m.g.d. of water to Madras will also get completed. The preliminary work for the Veeranam Second line is expected to be started in the early years of the Fifth Plan. The existing net work of water-supply and drainage in the city of Madras will need further improvements. In addition, drainage schemes in some of the major municipal towns will be taken up during Fifth Plan. A total provision of Rs. 125 crores for water-supply and sanitation has been made.

Housing Facilities

A total provision of Rs. 62.70 crores has been made towards creation of Housing facilities throughout the State during the Fifth Plan of which Rs. 25 crores is towards clearance of slums in Madras and in major urban centres. In addition, a provision of Rs. 11 crores has been set apart towards giving house-sites to the landless labourers and for creating an organisation for implementing rural housing programmes. A new scheme of construction of low cost, durable houses at a cost of about Rs. 10,000 each will be launched during the Fifth Five-Year Plan period. Under this scheme, persons with fixed incomes will be given houses on hire-purchase in various urban centres including small towns. The Central Apex House Mortgage Society will also be suitably strengthened by additional share capital of Rs. 1.5 crores so that its activity can be enlarged both in coverage and volume.

A total expenditure of Rs. 34.20 crores was spent by the State Government towards the welfare of scheduled castes and scheduled tribes during the Fourth Plan period; of this Rs. 8.43 crores formed part of the State Plans. During the Fifth Plan period it is proposed to spend Rs. 40.09 crores as non-plan expenditure and Rs. 11.20 crores as plan expenditure, totalling up to Rs. 51.29 crores. Thus the constitutional responsibility of uplifting Scheduled Castes and Scheduled Tribes is given great importance. The State Government has been taking care to improve the lot of other sections of the society who have been kept backward for centuries. This policy of taking up

PLEA FOR SETTING UP OF AN INDUSTRIAL REFINERY

DEVELOPMENT OF MADRAS CITY

the welfare of Backward Classes in addition to Scheduled Castes and Scheduled Tribes has been consistently followed by Tamil Nadu Government throughout the 23 years of planned economic development. The Government proposes to continue this policy during Fifth Plan. During the Fifth Plan period on all backward classes the total expenditure of Rs. 91.56 crores of which Rs. 23.99 crores will form part of the plan will be spent against the total expenditure of Rs. 53.68 crores

spent during the Fourth Plan period.

Development of Madras City

It is well recognised that Madras is not only the metropolis of Tamil Nadu but also the leading city for the southern region. With the facilities of free immigration available to all the Indians, Madras City

has developed into a multi-lingual city, with a large number of persons from Kerala, Andhra Pradesh and Mysore. It is, therefore, the responsibility of the Centre to come to the help of the State Government in solving the problems of Madras. The State Government, on its part, has programmed as part of the Fifth Plan to spend about Rs. 100 crores on various schemes meant for providing infra-structure facilities in the City of Madras as noted below :—

Total expenditure of Rs. 55.66 crores to the Andhra Pradesh City Development Corporation.							Outlay.	
Head of Development.		Scheme.					State Plan.	Centrally-sponsored.
							(RUPEES IN LAKHS.)	
Roads	..	..	..	..	Metropolitan Road	..	5,00	..
					City Roads (Corporation).	..	7,50	..
					Improvements to street lighting.	..	1,56	..
Inland Waterways.	..	..	..	..	Improvement to Buckingham Canal.	..	..	2,00 (Approximately) (Centrally-sponsored).
Health	..	..	..	..	Public Health facilities for City Corporation.	..	3,00	..
Water-supply and Drainage	..	{	..	..	Veeranam I Phase	..	9,00	..
	..		..	Veeranam II Phase	..	10,00	..	
	..		..	City Corporation Schemes (Water-supply and Drainage).	..	15,37	..	
	..		..	..	..	..	..	..
Housing	..	..	..	..	Slum Clearance	..	20,000	10,00 (Centrally-sponsored). (Approximately).
					Slum Improvement	..	..	..
Town Planning and Urban Development.					Government Rural Scheme.	..	2,00	..
					Construction of shops, etc.	..	1,20	25,00 (Centrally-sponsored.)
					Satellite Towns, etc.	..	..	..
Total ..							74,63	37,00

The Government expects that the special problems it faces in meeting the needs of the Madras metropolitan area, will be taken note of by the Centre, while it allocates Central assistance to this State.

Electrification and increase in the capacity of railway lines emanating from Madras in all directions at least up to a distance of 30 miles is an urgent need; the southern line should be doubled up to Chingleput. It is also expected that the electrification schemes sanctioned by Government of India will be completed in the early years of Fifth Plan both on the western line and on the northern line.

It may be recalled that a survey conducted by the Planning Commission has revealed that in 1969-70 unlike Calcutta and Bombay which carried 39.3 per cent and 49.7 per cent of commuter traffic by buses, Madras carried 82.25 of this traffic by buses. The scope for putting more buses on the roads is very much limited. More than that, the availability of chassis and diesel oil may also become constraint in the further development of road transport during the Fifth Plan. It is, therefore, imperative that the work on mass transit system for Madras City be started at an early date so that it gets completed at

least before the end of Fifth Plan.

The State Government is also planning to create three Satellite towns around Madras as centres to counter-balance the attraction of Madras City by providing necessary infra-structure facilities in order to attract the new industries. The work on the development of a satellite town, namely, Maraimalai Nagar, south of Madras, has already started. The work of improving Manali as an urban node has also been started in order to provide necessary housing and other facilities for various industries coming up in that region.

Our Fifth Five-Year Plan Is Part Of Our Own 12-Year Plan

Tamil Nadu has approached the Fifth Plan as a part of the long-term perspective of development. The State Planning Commission has evolved a draft plan frame for the State for the 12-year ending with 1984. This plan frame visualises, among other things, the following major goals :—

- Doubling the State's per capita income reckoned at constant prices ;
- Removal of poverty and social and economic inequality ;
- Elimination of unemployment and reduction of under-employment ;
- Modernisation of the State's social and economic structure.

The draft Fifth Plan now presented to the Centre proceeds on the basis of these broad objectives of economic growth and welfare with social justice.

In connection with the preparation of the perspective Plan for 1972-84, the State Planning Commission had set up a number of task forces which included representatives of industry and various professions. These task forces have sent in their reports on the basis of which the State Planning Commission is engaged in the preparatory work of the long-term perspective plan for the State. Based on this work, the State Planning Commission also prepared a draft plan for the Fifth Plan period and submitted it to the

Doubling the State's per capita income reckoned at constant prices, removal of poverty and social and economic inequality, elimination of unemployment and reduction of under-employment and modernisation of the State's social and economic structure are some of the salient sound points visualised in the draft plan frame for the State for the 12-year ending with 1984. And Tamil Nadu has approached the Fifth Five-year Plan as a part of this long-term perspective of development.

Government in April 1973. This plan was discussed at Governmental level in a number of working groups including the secretaries of the task forces of the Planning Commission. The present draft has been formulated taking into account the Plan submitted by the State Planning Commission and the deliberations of the working groups thereon.

The Government of Tamil Nadu recognises the importance of planning from below and has created the necessary organisational set up for district plans for each of the 23 development districts of the State. The State Planning Commission is in charge of this work. Fitment of these district plans within the overall framework of available resources and the finally approved plan of the State is a process which has just been initiated. After discussions with the Central Planning Commission and finalisation of the plan of the State, a further dialogue with the district level planning organisations will be initiated. It is expected that as a result of this, a set of district plans which will be closely integrated with the State and National plan will be ready for implementation by the beginning of the Fifth Plan.

Economic growth measured in terms of per capita income is a necessary but not sufficient indicator of the improvement of the welfare of the people. We believe that our ultimate goal should be the increased welfare of the people. Growth of per capita income is

useful to the extent—and only to the extent—to which it subserves the main aim of increase of welfare. Reduction of inequalities, removal of poverty and elimination of unemployment become important instruments for the increase of the net economic and social welfare of the people.

Tamil Nadu believes that employment should be one of the primary objectives of the Plan. The increasing numbers of rural unemployed and educated unemployed threaten to wreck the very structure of social and economic relations. A massive employment-oriented Plan which emphasises the building of essential infra-structure like roads, housing and water-supply should be incorporated in our development effort. In view of the constraint on Tamil Nadu's resources, the Fifth Plan aims at a modest programme in regard to roads, water-supply and housing. The Central Government should provide additional resources for increasing these outlays and reorient its production policies from this point of view.

Removal of poverty is an important national objective. This cannot come through any single programme. It has to be the result of a whole package of programmes. Tamil Nadu has pioneered a number of initiatives in this regard. It has started a massive slum clearance programme which indirectly offers an income supplement to the needy urban poor. The assignment of 4.23 lakhs house-sites to the landless in the villages, the conferment of ownership rights on cultivating tenants and the transfer of 6.41 lakh acres of land to 3.29 lakh poor landless persons are among the pioneering programmes of Tamil Nadu during the Fourth Plan. The Fifth Plan will see an intensification of the efforts in this regard. From the point of reduction of inequalities and removal of poverty, Tamil Nadu lays emphasis on its programmes of welfare of backward classes on which during the coming Plan, Rs. 91.56 crores will be spent in all. Tamil Nadu will also be implementing a large programme of nutrition through the establishment of 5,000 child-care centres and 1,000 nutritional rehabilitation centres to tackle the problem of malnutrition, which is particularly prevalent among the poor children of the State.

Priorities :

The draft Plan assigns the highest importance to the attainment of the target of 90.50 lakh tonnes of food grains, including 67.00 lakh tonnes of rice and 3.50 lakh tonnes of pulses. In terms of resources allocated, the highest priority goes to power and irrigation. The lack of minerals and other resources in the State has made it inevitable that adequate power should be made available to help the local industries to process raw materials and intermediates obtained from other regions. Similarly, the almost full utilisation of the State's irrigation potential leads to our heavy dependence on groundwater and therefore on power to run agricultural pumpsets. Generation and distribution of power have been allocated nearly Rs. 440 crores in the Fifth Plan. Irrigation programme, which would help exploit to the fullest extent the existing irrigation system and improve the water management have been assigned about Rs. 60 crores out of a total of Rs. 188 crores for Irrigation in the Plan. Agricultural Production Programmes absorb Rs. 61 crores. From the point of infra-structural development and employment, roads have been given a high priority. Particular emphasis has been laid on rural roads for which nearly Rs. 55 crores have been set apart in the five year. Water-supply programmes in the villages have been allocated Rs. 40 crores. Urban water-supply schemes will absorb Rs. 2 crores. Other social services including education have been assigned 24 per cent of the outlay.

Dimension of the Fifth Plan :

Dimensional considerations relating to the Fifth Plan of the State emerge primarily from three factors: (a) The needs of the State; (b) feasible tempo of implementation; (c) the resources available. During the last four Plans, our pace of implementation has been as below:—

	(RS IN CRORES.)
First Plan	80
Second Plan	188
Third Plan	348
Three annual Plan	267

Fourth Plan—	
Proposed	624
Approved Plan	519
Likely actuals	557
Annual Plan, likely actuals, 1973-74.	134

The physical content of the Plan is related to the needs of development. It cannot be judged merely on the basis of monetary size of the Plan. The formula of doubling of Plan size for the Fifth Plan has meaning only if the real content is taken into account. From this point of view, it is necessary to allow an increase of 100 per cent over the magnitude of the Fourth Plan, adjusted for the inflationary factor. On this basis, it appears reasonable to take the Fifth Plan size, at current prices as Rs. 1,500 to Rs. 1,600 crores.

Another approach to the problem is from considerations of the pace of implementation in 1973-74. Including outlays such as rural roads, employment programmes financed by the Centre directly, which are, in future, to be part of the State Plan and the institutional funding for our power and water-supply programmes, our current year's outlay will be about Rs. 160 crores. The outlay in the first year of the Fourth Plan was about Rs. 80 crores. The annual increase in outlay has been on an average around 20 per cent. On the same basis, for 1974-75, an outlay of about Rs. 200 crores would be both feasible and necessary. The mid-year of the Plan will, on the same basis, need an outlay of Rs. 300 crores. This again justifies an outlay of Rs. 1,500 crores roundly for the Plan.

The State Planning Commission has made detailed calculations regarding capital-output ratios and the employment generation. Based on these, the State Planning Commission has recommended that a total investment of Rs. 3,900 crores should be made in 1974-79 in Tamil Nadu. Out of this, the State Planning Commission calculates that about Rs. 1,600 crores should be spent on schemes which are now included in the State Sector of the Plan. (If according to the State Planning Commission's

formula, a number of these are accommodated in the Centrally-sponsored sector, the State Sector outlay can be shown as Rs. 1,300 crores). Since these are now shown in the State Plan, the size of the Plan comes to about Rs. 1,500 crores. Based on all these considerations and the needs of development of the State, we have proposed an outlay of Rs. 1,532 crores for the Fifth Five-Year Plan and Rs. 202 crores for the Annual Plan 1974-75.

The National Plan of the public sector is expected to be of the order of Rs. 34,800 crores. Rs. 15,600 crores, out of this, is in the State Sector; the balance of Rs. 19,200 crores is in the Central Sector. It is legitimate that the State of Tamil Nadu should expect that a reasonable share of investment by the Central Government should also be made in the State. Unless this is done, further development of the State will be seriously

handicapped. The following is a list of the important projects in the Central Sector, action on which has to be expedited:—

- (i) Second mine cut at Neyveli and a 1,000 M.W. thermal station, using the additional lignite to be raised.
- (ii) The development of Cuddalore as an alongside harbour.
- (iii) Intensification of activity on the Salem Steel Plant.
- (iv) Expansion of Kalpakkam Nuclear Plant.
- (v) Setting up of another Nuclear Plant at Tuticorin.
- (vi) Intensification of oil exploration activities both in the Cauvery Basin and off the coast of Tamil Nadu.

(vii) Conversion of the Madras Tiruchirappalli Madurai-Tuticorin line into broad-gauge.

(viii) Construction of a new broad gauge line between Karur and Dindigul.

(ix) Construction of a mass transit system for the Madras metropolitan area.

(x) Implementation of Sethu-samudram Project.

(xi) Establishment of a shipyard at Tuticorin.

(xii) Setting up of an industrial refinery at Tuticorin.

(xiii) Setting up of a fertiliser plant near Cauvery Delta.

(xiv) Establishment of defence industries.



Thirumethi Indira Gandhi, Prime Minister of India, during her tour of Tamil Nadu, called on the Chief Minister of Tamil Nadu who was indisposed suddenly while on a tour of Ramanathapuram district last month.

Tamil Nadu has presented a draft Fifth Five-Year Plan of Rs. 1,532 crores in conformity with the objectives of the approach to the National Fifth Plan and the draft plan frame for the perspective Plan put forth by the State Planning Commission giving the highest priority to removal of poverty and to putting an end to the unemployment problem besides the fulfilment of other plan goals in a well-balanced and accelerated manner.

TAMIL NADU PLANS Rs. 1,500 CRORES EXPENDITURE

Tamil Nadu has presented a draft Fifth Plan of Rs. 1,532 crores. The strategy and profile of the Plan is brought out in this brief memorandum. The goals of the Plan follow the objectives of the approach to the national Fifth Plan and the draft Plan Frame for the perspective Plan put forth by the State Planning Commission.

The Plan of Rs. 1,532 crores put forth by us is the minimum necessary consistent with our goals of development. The size of the State Plan is determined by the total of the State's resources and the Central assistance. The recommendations of the Finance Commission are vital for deciding the State's resources. Part of the State's resources comes from open market loans and borrowings from Commercial Banks. In regard to these we have raised certain important points for the consideration of the Government of India. Unless these are resolved, the determination of the Plan size is not possible.

More important even than the size of the State Plan is the question of Central sector projects. There is a whole set of Central Governmental programmes in the area of agriculture, education, health and social welfare. We do not agree that such a large investment outside of the State's Plan should be done directly by Central ministries. It is far better

IN THE NEXT FIVE YEARS

that the resources therefor are brought in directly into the State's Plans.

Turning to the industrial, defence and other projects in the Central sector, we would earnestly plead for reversal of the recent trend towards the decreasing share of the Tamil Nadu State in these projects. We have listed out a few of these important projects in the memorandum. We hope that early action will be taken on these.

Tamil Nadu believes that employment should be a major goal of the Plan. A massive employment-oriented plan which emphasises the building of essential infrastructure like roads, housing and water-supply should be incorporated in our development effort.

Tamil Nadu assigns the highest priority to removal of poverty. Tamil Nadu has pioneered a number of programmes in this regard, such as the massive slum clearance programme, assignment of 4.23 lakh house-sites to the landless in the villages and the conferment of ownership rights on cultivating tenants and assignment of 6.41 lakh acres of land to 3.29 lakh poor landless persons. The Fifth Plan will see an acceleration of this aspect of development.

The Plan and its components should not be looked on merely as a package of projects and schemes of a

departmental nature but as part of the movement towards a socialist reconstruction of society. Tamil Nadu believes that rapid economic growth consistent with the increase of welfare of the people can be achieved only in a socialist society. Unless this view of economic and social relations is kept in mind, goals of economic growth will be illusory.

Tamil Nadu recognises that the transition to socialism should be on the basis of a properly articulated and well-designed plan of reorganisation of the economy and social structure. If these arrangements are not properly made and if socialist measures are adopted without the objective conditions being ripe for them, there will be a set back to the economy and welfare goals will be jeopardised.

Tamil Nadu recognises that in the transition to socialism, we have to operate for a considerable length of time within a mixed economy. Government of Tamil Nadu is of the view that a mixed economy such as ours in which the private sector continues to operate should be guided through a mix of policy instruments such as price, credit and mandatory controls including licensing. Reliance on any single tool of guidance of a mixed economy with increasingly sophisticated inter-sectoral relationship is bound to fail. Government of Tamil Nadu believes that in operating these levers by which the economy is manipulated, there should be sufficient decentralisation and delegation of powers; India is too large and the Indian economy is too complex to be controlled from one centre of power. Tamil Nadu believes that from the point of view of quick response to signs of and the need for change, the controlling points for the economy should be more widely diffused than now. Proper implementation is as important as planning. The need to decentralise decisions gains strength from this aspect also. The case for decentralisation of the powers of economic management of the country is therefore strong and urgent.

High prices and low production are the chronic list of our economy. The price situation is determined on the one hand by the monetary and credit policies which modify effective demand and, on the other, by licensing and import policies which impinge on production and hence on

supply. The State Government is very often a helpless spectator and victim of the results of decisions taken at All-India level without its knowledge and concurrence. For instance, delay in action at the Central level in regard to procurement of essential inputs like cotton, crude oil, fertilisers and pesticides has had an inevitable impact on production and on prices. Again, the delay of nearly two years in the approval of the process for production of fertilisers at Tuticorin has led to continuing shortage of this vital commodity. Examples of this abound in the industrial sector and in the generation of power. Some power schemes which should have been sanctioned years ago are still awaiting Central decisions. The State Government would plead for early decisions in regard to these. These delays particularly highlight the need for decentralisation of decision-making.

Of late, prices have become the determining factor in regard to development itself. The erosion of the economic fabric of the country by inflation is threatening the national priorities themselves and leading to a restrictive approach to projects, plans and programmes. This will lead, both in the short-run and long run, to a vicious circle of shortages and higher prices which will in turn further show down the Plan. Unless we master the price situation, we will not be able to achieve our goals of development. Tamil Nadu believes that now more than ever, it is time to ensure that an integrated and national approach to the problems of prices, wages, profits and taxes be evolved and implemented.

Immediate steps should be taken to ensure that the production of essential goods in the country is increased. Necessary inputs for these must be allowed to be imported. Early clearance should be given for important projects which will increase the availability of essential commodities such as power, fertilisers, pesticides and fuel. The investment and licensing policies should themselves be reshaped so that we can increase the availability of consumption goods in the country and help ensure a more stable price situation.

The tax system should also be gone into from the point of view of (a) reducing the incidence of taxes on the prices of commodities in mass

use and (b) increasing the incentives of people to save and invest in productive enterprise. The evils of unaccounted money should be tackled through a bold policy of emoneyisation and at the same time, the tax structure reorganised in consultation with the States.

Early decisions based on discussions on issues of national economic importance are vital in determining the future of the Plan and the country. There may not be much use in finalising the Plan unless these issues are resolved. The Governments of the States have a right to requests that these issues be resolved early. A national conference of State Governments should be called and facts regarding the economic crisis placed before the Chief Ministers. Their views should be obtained on various alternatives to handle the present critical situation. Only then can a final decision be taken on the shape and size of the Fifth Plan.

The States at the mercy of the Union Government

The State Government's budgets totally lose all flexibility and freedom of manoeuvre. They are at the mercy of allocations decided by the Centre. I am of the view that in keeping with the true federal principles, States should be free to borrow from the banks on the basis of viable projects and guarantee of the State revenues. There should be no need for a prior clearance by the Central Government—so long as States are fulfilling their obligations to the Centre. If need be, broad guidelines for a total borrowing limit can be laid down. The necessary constitutional amendments should, in our view, be brought in early.

—C.M.

Around Madras is spread out the entire, exotic South of India—a land of sun and warmth, of temples and legends, of silver-lined beaches, blue mountains and velvet-green rice fields. It is an ancient land where life is still gracious and hospitality spontaneous and warm. Madras and the South of India has so much to offer by way of tourist attraction.



The President is seen delivering his address at the 12th A.I.H. & R. Convention.

WHERE LIFE IS STILL GRACIOUS

(Given below is the text of President V. V. Giri's speech at the 12th All India Hotel and Restaurant Convention on 21st September 1973.)

It gives me great pleasure to be here, today in the historic city of Madras to inaugurate the 12th All-India Hotel and Restaurant Convention. I am particularly glad about the choice of Madras as the venue of your convention. Since Madras and the South of India has so much to offer by way of tourist attractions. These attractions need to be put into proper focus to attract visitors to this part from overseas as well as from the rest of India. Madras is not only a great capital city of the State of Tamil Nadu, but also the major entry point for visitors from abroad next only to Bombay and Delhi. Around Madras is spread out the entire, exotic south of India—a land of sun and warmth, of temples and legends, of silver-lined beaches, blue mountains and velvet-green rice fields. It is an ancient land where life is still gracious and hospitality spontaneous and warm.

PRESIDENT'S TRIBUTE TO TAMIL NADU

It is heartening to know that Madras and the rest of South India which has been some what lukewarm towards the development of tourist facilities have realised the immense potential of tourism for economic development. Pastic activities in the construction of hotels in this city is a proof of the new realisation. Near Madras, Mahabalipuram is shaping into a great cultural centre-cum-beach resort.

Elsewhere in the South of India, a new beach resort of tremendous future potential has come up at Kovalam in Kerala. The States of Mysore and Andhra are also taking steps to provide new accommodation for the visitors to their States. If all these activities are properly co-ordinated with promotion in India and abroad, I have no doubt that South of India will attract lakhs of tourists as it legitimately deserves.

Largest Economic Activity

International tourism, today, is a major industry in the world perhaps the largest single economic activity. It involves the movement of about 200 million people every year, from one country to the other. In pure economic terms the volume of this business is 22 billion dollars a phenomenon unique in the history of the world. Given peace and stability in the world, this business will grow constantly leading to a better understanding among the people in the world. India's share in this business is very small—mainly due to the fact that our country is located at great distance from the

affluent countries of the world where international travel has become a way of life. However, India has a great appeal for the discerning tourist from abroad. Our traffic has been steadily increasing and the estimated arrivals in 1973 are likely to exceed four lakhs. The average stay of a foreign visitor to India is more than 25 days—the longest per capita stay in the world for a tourist.

The principal constituents of travel industry are rich tourist attractions, good accommodation and fast and dependable means of transportation. We are undoubtedly rich in tourist attractions. We have a thousand miles of snow-clad Himalayan ranges dotted with scores of mountain resorts; some of the greatest architectural creations built by the hand of man; endless sandy beaches on the coasts of India and a country endowed with great culture and history. We have inherited these rich investments from our forefathers. But we need more hotel accommodation and better transportation.

Changing Sky-lines.

During the last six years, India has built several new hotels in major cities increasing the accommodation to 11,000 rooms in appro-

ved hotels. This accommodation will go up to 20,000 rooms as soon as the projects presently under construction are completed. The skyline of some of our cities is changing with the construction of high rising hotel buildings. This development has been possible under the dynamic leadership of Dr. Karan Singh, Minister of Tourism, Government of India. Apart from his success in accelerating the development of infrastructure in India, he has been able to create an awareness of tourism throughout the country by bringing into focus economic impact of tourism on the life of the people as well as its significance as an instrument of goodwill among the people and the nations of the world. In this respect both the Government and the private enterprise in travel industry have worked with close co-operation with the result that India is well on its way to progress in the field of tourism.

Lately, there has been a greater concentration in the luxury class hotels. Since the visitors from affluent countries prefer top class accommodation and facilities, irrespective of cost, we have no choice but to provide accommodation in this category. There is, however, a possibility that by over-building accommodation in this class, we may outprice our hotels for the middle-income overseas tourists, who



The President in a cheerful mood is seen exchanging pleasantries with Dr. Karan Singh.

Hotels in the South have a high reputation for their cleanliness, typically Indian cuisine and cheerful, personalised service could well serve as models for hotel groups elsewhere.

are travelling all over the world today, in large numbers. The reduced air-fares for young people and groups and the introduction of air-charters has made it possible for not so affluent people to take trips to destinations like India. We have to cater to this class of people not only from a narrow economic angle, but also from the point of view of goodwill. These people tend to stay longer and visit a country again and again, if they are happy with their visit. I would, therefore, recommend to the leaders of the hotel industry to consider this new aspect of tourism development in their scheme of things.

Tribute to Tamil Nadu Hotels.

An average visitor from abroad needs a spotlessly clean room with a clean bath and it should not be difficult for us to provide that at a reasonable price. This type of accommodation is required not only for the foreign visitors, but also the Indians who want to travel for a holiday. In this, I am glad to say that many of our hotels operating in the South have a high reputation for their cleanliness, typically Indian cuisine and cheerful, personalised service could well serve as models for hotel groups elsewhere.

While catering to the needs of foreign visitors, the hotel industry should not lose sight of the economic realities in the country and their responsibility to serve the common man of India. Every Indian has a right to leisure and a holiday.

To us domestic or home tourism is as important as International tourism. Home tourism is even more significant as it brings about better understanding among the people of India leading to national integration and unity. I do appreciate the role of your industry as a foreign exchange earner from foreign tourists. But your responsibility does not end there. The Government is aware of its social responsibility of providing cheap holidays to people of India. They have put up youth hostels and tourists bungalows all over the country. More will be added during the Fifth Five-Year Plan. But, the efforts of the Government in this direction will always be limited by the constraint on our resources due to other equally important priorities. It is here that the hotel industry can come to the aid of the Government by putting up inexpensive tourist hotels and motels to meet the needs of the travelling public for modestly priced accommodation. During my visits to the Soviet Union and East European countries, I was delighted to see holiday homes for ordinary workers, peasants and children in all health resorts there. They are given compulsory vacation and all of them spend some time in the salubrious climate of these resorts. I think we should emulate this example.

Standard Menu at low cost

In the present context of the acute food shortage facing the country, I would like to stress the importance of evolving standard menus at prices which our common people could afford. When I was Governor of Kerala (during the President's rule in 1964), we organised at the height of the food crisis, the supplying of standard meals at reasonable prices. All political parties, social organisations and hotel industry co-operated in this venture. This experiment was



President is seen being led to the rostrum of the 12th A.I. H & R. convention.

very popular with the people of Kerala. These meals were nutritious and at the same time within the reach of large masses of our people. I would call upon both public and private sectors of our hotel industry to devote their attention to this pressing problem. Good food packed hygienically and priced reasonably would be a boon to over-worked house-wives and others like Railway travellers. I am sure it is not beyond our ingenuity to tackle this difficult problems of producing nutritious food at low cost. I hope your convention will devote its attention to the suggestions I have made. In India we have a tradition of hospitality and a genuine respect for the guests. *Athithi devo Bhava*—A visit from a guest is like a visit from God—has been our motto since the dawn of civilisation in this ancient land. There was no commercial or economic angle in our hospitality to the guests. With the movement of millions of guests from one end of the world to another, it is no longer possible for anyone to stick to these ideals. However while falling in line with the universal pattern of

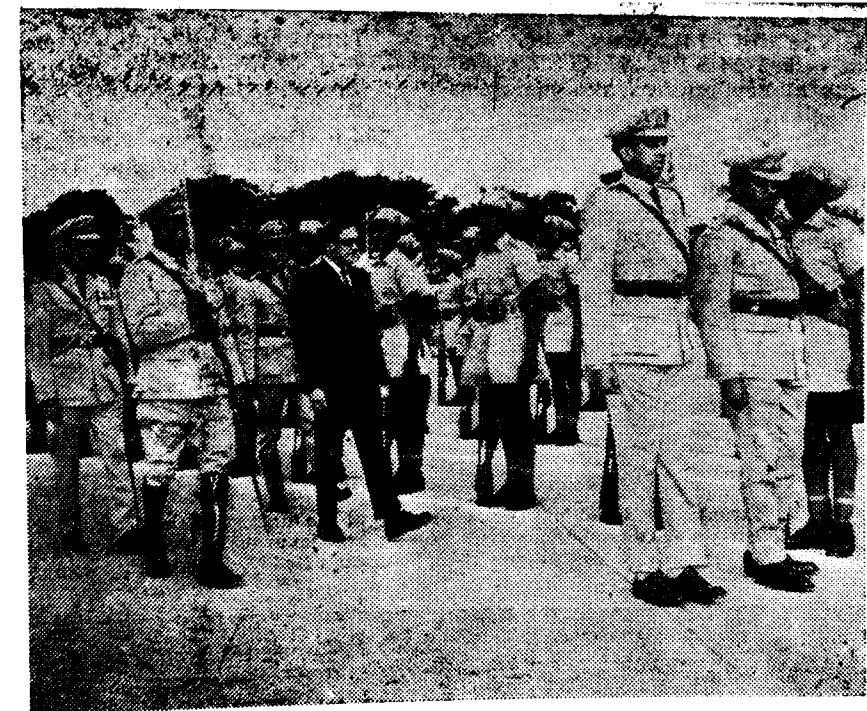
hospitality which is paid for, we can combine it with an Indian touch of personalised service, politeness, attention and devotion. The interiors of your hotels should be so designed as to give a fine touch of Indian sophistication to each room. So also, the entertainment offered to the visitor from abroad, should distil the essence of the finest and most imaginative of our dance and music forms.

Right Step taken in Tamil Nadu

I was pleased to hear Mr. Ananda Rao mention that Tamil Nadu has taken the right step in this direction and have no doubt that with a little effort on your part, you will be able to offer the tourist a distinctive sample of the best in our art forms, wherever he travels in our country. A visitor to India is a guest and a friend and we should treat him like that in our hotels, in our shops and on our streets. He should not feel a stranger in the country where Buddha and Gandhi lived and worked.

THE AWARD OF THE TAMIL NADU CHIEF MINISTER'S POLICE MEDAL FOR GALLANTRY

Every year on 15—9—73 the Birthday of late Dr. C. N. Annadurai, awards to members of Police Force for Gallantry and Outstanding service are conferred by the Chief Minister. Biographical sketches of the recipients of the Chief Minister's Police Medal for Gallantry are outlined in the following pages.



The Parade Commanders at Thanjavur Police Parade on 15-9-73 were Thiru A. Ramu, D. S. P. (A. R.) Tiruochi and D. I. G. Tiruochi, Thiru Suvarna. They are seen conducting the Chief Minister at the Ceremonial Parade.

THIRU C.S. ARUMUGAM.

Assistant Commissioner of Police, Law and Order, Central Range, Madras City.

Thiru C. S. Arumugam with 29 years of service to his credit, distinguished himself in unearthing the famous Naxalite conspiracy case of Andhra Pradesh by the seizure of secret documents and arrest of several desperate accused at great personal risk.

He has great initiative, perseverance and tact and these qualities brought him distinction.

THIRU A.V.P.V. RAMANUJA REDDY.

Reserve Inspector, Madurai North.

Thiru A. V. P. V. Reddy with 25 years of service to his credit in S. A. P., is a prominent athlete.

From 1967 to 1971, he brought laurels to the State Police by serving as coach in the All-India Police Games Meets held at various States in Jullunder, Lucknow, Tekanpur, Bhopal, Neemuch and credit goes to him for the efforts taken by him in coaching our police athletes who won gold, silver and bronze medals in several events. He has earned 29 rewards during his service.

THIRU A. RAJAGOPALAN. *Inspector of Police, Excise.*

Thiru A. Rajagopalan with 23 years of service to his credit, has made a mark by his detective ability and flair for crime work right from the beginning. By reason of high merit he was drafted to the Crime Branch, C.I.D. in 1956 where he displayed great skill and diligence in investigating important and complicated cases. He has earned 275 rewards and Good Service Entries including 2 Meritorious Service Entries. He is a considered asset to this department.

He joined the Excise Enforcement Wing on 1st April 1972 and here also he distinguished himself by his collection of intelligence and execution of daring raids.

THIRU C. S. THRILOKA-CHANDRAN.

Inspector of Police, Madras City.

Thiru C. S. Thrilokachandran joined the Police Department as a Sub-Inspector of Police in 1959. After training he held charge of several police stations where he did exceptionally good work for this reason. He was specially selected for the Madras City Police where he continued to work with conspicuous merit. During his distinguished

service of 14 years, he has earned 2 M.S.Es., 47 G.S.Es. and 208 money rewards and maintains a clean defaulter sheet.

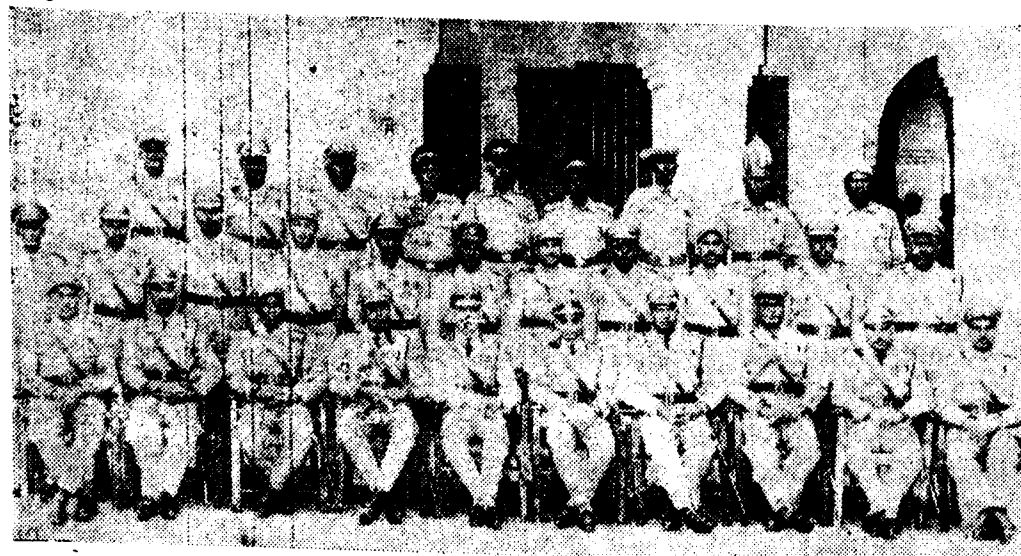
This officer was responsible for tracing and arresting a notorious Naxalite by name, Goa Kandasami, who was involved in lawless activities and had gone underground for a long period.

THIRU DEVANAYAGAM RAMASAMY.
Station Officer (Transport).

Thiru Devanayagam Ramasamy was enlisted as a Fireman Driver in the A.R.P. Organisation on 29th December 1942. As a Driver Mechanic he earned six cash rewards for very good work done during fires and rescue operations. The one given in 1956 was for very valuable services rendered during the Ariyalur train disaster.

In the recent unprecedented floods in South Arcot district from 8th to 12th December 1972 a series of rescue operations were carried out under the orders of the Collector in the villages in and around Cuddalore. As Station Officer (Transport) Thiru D. Ramasamy displayed conspicuous gallantry in saving a number of lives and valuable property like cattle and household articles during the rescue operations carried out at Uppalavadi and Sirupalayur villages.

Dr. M. Karunanidhi, Chief Minister, addressing at the function of the Award of the Tamil Nadu Chief Minister's Police Medal for Gallantry and Outstanding service held at Thanjavur on 15th September, 1973 (Left). The Chief Minister is pinning the medal on Thiru Ramanuja Reddy, Reserve Inspector, Madurai North. (Right).



Group Photo of Police Officers who were honoured at the Thanjavur Investiture on 15-9-73.

THE AWARD OF THE TAMIL NADU CHIEF MINISTER'S POLICE MEDAL FOR OUTSTANDING SERVICE

THIRU J. E. SAMUEL
*(Deputy Superintendent of
Police, Chingleput East.)*

Thiru J. E. Samuel entered service in the Madras Police as a Sub-Inspector of Police in 1943. After his practical training, he held charge of heavy stations in Chingleput district and transferred to the Railway Police where he did excellent work in putting down Railway offences. He was placed on special duty in 1952 and he successfully booked a case against Railway Guards who were responsible for the pilferage of goods.

He served in the District Special Branch for three years and developed excellent sources of information. He was specially selected as security officer in 1958 to accompany the Governor of Madras during his tour of Assam State.

In recognition of his efficient service he was promoted to the rank of Inspector of Police in 1959. His work for 4 years as Divisional Detective Inspector in Madras City was equally praiseworthy.

In 1969 he was elevated to the rank of Deputy Superintendent of Police and posted to Thiruthurai-poondi sub-division, where he successfully handled the situation arising from the Land Grab agitation. He is now in Tiruvottiyur Sub-Division where he has shown equal competence in dealing with industrial unrest.

His long service of 30 years is marked by exemplary character, efficiency and integrity of a high order.

THIRU H. T. THUKKARAM
*(Deputy Superintendent of
Police and Assistant Commis-
sioner of Police, Law and Order,
Western Range, Madras City).*

Thiru H. T. Thukkaram entered service as Sub-Inspector of Police in 1948. After his training, he held charge of various stations in Tiruchirappalli district and carried out his assignments ably and efficiently.

In recognition of his good services he was promoted to the rank of Inspector of Police. He rigorously put down rowdism, smuggling of liquor, etc. His work during the Anti-Hindi agitation in 1965 was commendable.

He was promoted as Deputy Superintendent of Police in 1969 and posted to Mettur Sub-Division in Salem District where he managed the labour problems with tact and firmness. In handling the very difficult situations at India Pistons in 1972 he showed great competence and leadership.

His long service of over 25 years is characterised by thoroughness, resourcefulness, loyalty and integrity of a high order.

THIRU C. A. KUPPUSAMI
*(Deputy Superintendent of Police,
Namakkal, Salem District).*

Thiru C. A. Kuppusami entered service as Sub-Inspector in 1943. He served in heavy stations and dealt with law and order problems firmly and tactfully and earned the appreciation of his superiors and the public alike. In 1950-51 he arrested smugglers and seized goods worth Rs. 50,000. In 1953 he detected a grave burglary in a

Given below is the biographical sketches of the recipients of the Chief Minister's Police Medal for Outstanding service during the year 1972-73.

V.I.P.'s house and earned encomiums. Later he rounded up a North Indian Gang responsible for house burglaries in and around Chingleput and South Arcot districts.

He was promoted as Inspector of Police in 1960. For his good work in Tiruchirappalli district, he was awarded a Meritorious Service Entry.

In 1969 he was drafted to the Food Cell, C.I.D. and with the assistance of the Central Excise staff he intercepted a car coming from Bangalore and recovered 7,000 tolas of gold worth Rs. 1,40,000 concealed in the petrol tank. He chased another car in Hosur limits resulting in the recovery of gold threads and Tetron cloth over Rs. 50,000. The contraband seized and the two cars were confiscated to Government.

In December 1970 he was promoted as Deputy Superintendent of Police. He is incharge of Namakkal Sub-division where he continues to work with sincerity.

His service of over 29 years has been marked by sincerity, zeal, and detective ability of a high order.

THIRU T. R. RAMANUJAM
*(Deputy Superintendent of Police,
Research Centre, C.I.D., Madras).*

Thiru T. R. Ramanujam entered the Police Department as a Sub-Inspector of Police in the year 1949. He did excellent work as a Sub-Inspector in the Special Prohibition Squad of the Madras City Police. As he was found to be a good detective, he was drafted, to the State Crime Branch, C.I.D. in 1955. He was specially chosen to assist in the investigation of the sensational

Coimbatore and Nagapattinam Hundred Rupee Currency Note cases. By diligent enquiries and careful examination of persons connected with these cases, he rendered yeoman service towards the detection of these cases.

He was promoted to the rank of Inspector in 1960 and detained in the Crime Branch, C.I.D. itself as a special case in view of his detective ability and skill.

In 1962, while he was in-charge of the Madurantakam Circle in Chingleput district, a theft of two suit cases containing valuables worth Rs. 75,000 belonging to a Cine actor was reported and he successfully investigated and detected that case.

In 1971, he was promoted to the rank of Deputy Superintendent of Police, Prohibition, Intelligence Bureau C.I.D. He did excellent work in effecting recoveries of smuggled goods and unaccounted currency to the value of about Rs. 4 lakhs. He is currently in-charge of the Police Research Centre in the Crime Branch, C.I.D., Madras.

His distinguished service of over 22 years is marked by industry, integrity and efficiency of a high order.

THIRU M. A. RADHAKRISHNAN

*Deputy Superintendent of Police,
Tamil Nadu Special Police
IV Battalion, Kovaipudur.*

Thiru M. A. Radhakrishnan entered service as a Jamadar (now Sub-Inspector of Police) in the Special Armed Police V. Battalion, Palani in 1948. He ably conducted training courses of cadets entrusted to him. He was promoted as Subedar in 1948 and played an effective role during the Police Action in Hyderabad State. During 1949-50 he was posted to quell an outbreak of crime in Tirunelveli district and he carried out this work creditably.

He held the post of Quarter Master in 1958 and took keen interest in the welfare activities of the Police personnel. By dint of his hard and efficient work he was promoted to the post of Deputy Superintendent of Police.

He was on deputation to Orissa State and Nagaland from 1964 to 1971 and his work in the operational area was appreciated by his superior officers as well as Army authorities.

He takes a leading part in conducting Sports Meets, Duty Meets and Welfare and Cultural Exhibitions.

His long service of 25 years has been characterised by a high degree of efficiency, loyalty and devotion to duty.

THIRU V. R. GANAPATHI

*Inspector of Police, Special
Branch, C.I.D., Madras.*

Thiru V. R. Ganapathi joined the Police Force on 8th October 1949. Even as a probationer he showed competence in the field of Crime detection. He was mainly responsible for arresting notorious K.Ds. concerned in about 25 cases of various circles leading to recovery of a large amount of property and all the cases ended in conviction. He continued to work well and arrested O.V.D.Cs. and inter-State criminals concerned in house-breaking and major thefts in Chingleput and South Arcot districts and in Madras City.

He was then posted to Special Branch, C.I.D. where he did excellent work and was awarded a meritorious service entry. In 1967 he was specially posted to Chingleput district for duty during the General Elections and he earned encomiums for his efficient work. Thereafter he has been working as security officer with quiet distinction.

He has earned 131 rewards including two Meritorious Service Entries. His service of over 23 years of service is marked by integrity, efficiency and devotion to duty of a high order.

THIRU J. R. SREERAMULU,

*Inspector of Police, Crime Branch,
C.I.D., Madras.*

Thiru J. R. Sreeramulu entered services as a Sub-Inspector of Police in the year 1949. He made his mark in the detection of a series of burglaries perpetrated by professional criminals of Chingleput, North Arcot and Thanjavur districts. At the risk of his own life he arrested the absconding accused in a triple murder case.

By reason of continuous good work he earned his promotion as Inspector of Police in 1964. He served for a full term of five years in the Directorate of Vigilance and Anti-Corruption. He succeeded in several trap cases and successfully handled important cases against highly placed officials.

He was transferred to the Food Cell, C.I.D., in the year 1969 and subsequently to the Crime Branch, C.I.D. in April 1972. He has maintained his fine record in these two branches also.

He is now working as Senior Executive Officer, Crime Branch, C.I.D., Madras. He has earned 157 rewards and maintains a clean default sheet.

His service of over 21 years is marked by integrity and efficiency of a high order.

THIRU C. BRAHMANANDAM,

*Inspector of Police, Food Cell, C.I.D.,
Madras-4.*

Thiru C. Brahmanandam entered the Police Department as Sub-Inspector of Police in the year 1949. He did splendid work in detecting a case of robbery followed by murder in the Meenakshi Amman Temple, Madurai. Several cycle and cattle theft cases in Madurai Urban district were located by him.

He was promoted as Inspector of Police during the year 1964. He joined the Directorate of Vigilance and Anti-Corruption and worked in South Arcot and Tirunelveli Units. He successfully investigated several difficult cases of corruption.

He joined the Food Cell, C.I.D. Unit in Kanyakumari on 24th July

Chief Minister presents Gallantry Medals.

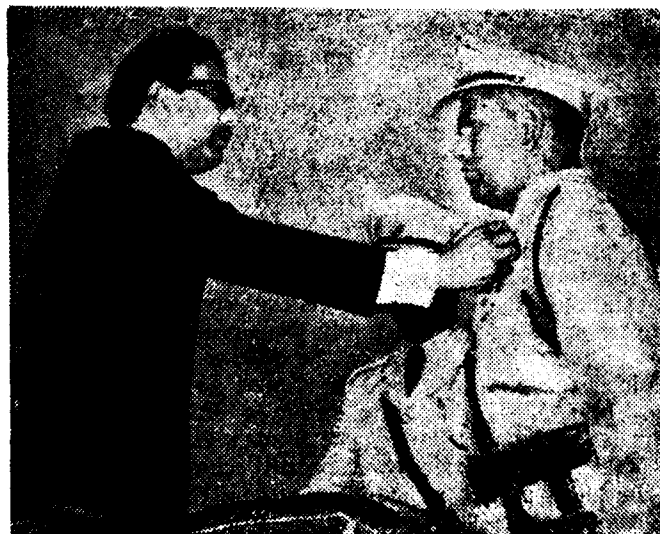


Top: Thiru C. S. Arumugam, A. C., Central Range.

Middle: Thiru Thirlokachandran, City Police Inspector and

Bottom: Thiru A. Rajagopal, City Police Inspector receiving Gallantry Medals.

Thiru H. T. Thukkaram, A. C. Law & Order, Western Range, Madras City, receiving Medal for Outstanding Service.



A close up of Madurai North Peseive Inspector Thiru Ramanujam Reddy receiving the Gallantry Medal.



1970. He has maintained an excellent drive against smuggling of paddy and rice to Kerala.

He has earned 78 rewards and maintains a clean defaulter sheet.

His service of over 23 years is characterised by efficiency and integrity of a high order.

THIRU V. N. SREENIVASA RAO

Inspector of Police, Madras City.

Thiru V. N. Srinivasa Rao was appointed directly as a Sub-Inspector of Police in the year 1950. He showed his mettle within a few years and by reason of merit was specially chosen for the Special Branch, C.I.D., where he served from 1953 to 1959. He distinguished himself in this specialised branch.

On promotion as Inspector of Police, he joined the Vigilance and Anti-Corruption Unit at Thanjavur and South Arcot, where he worked from 1964 to 1969. His work in this new sphere was a high order.

He was specially chosen to work in Tamil Nadu Police Commission Office, where he worked from January 1970 to January 1971. He served the Police Commission very efficiently.

He has earned 106 rewards and his service of 23 years is marked by sincerity earnestness and devotion to duty.

THIRU M. C. PARTHASARATHY,

Officiating Inspector of Police, Tamil Nadu Special Police III Battalion, Manimutharu.

Thiru M. C. Parthasarathy entered service in the Special Armed Police as a Sub-Inspector of Police in the year 1948. After training at Malappuram, he was drafted for duty on the Hyderabad border. He displayed courage and leadership in facing hostile elements from the erstwhile Hyderabad State.

Thereafter, he was drafted to various duties at Nagaland where he took active part in operations. He worked efficiently and earned the appreciation of his superiors and Army Officers. He exhibited great courage in 1963 in saving many civilian lives and properties from destruction by hostile Nagas.

In recognition of his continuous good work, he was promoted to the rank of Inspector of Police in 1963. He held charge of several armed police companies with distinction. He was awarded Special Duty Medal with two bars in the operational area.

He is now working as a Quarter Master since 1969 and he does his work with efficiency.

His 25 years of service is marked by integrity and ability of a high order.

THIRU PARANUR VEDAGIRI

Inspector of Police, Vigilance and Anti-Corruption, North Arcot Detachment.

Thiru Paranur Vedagiri, a graduate, joined the Police force as Sub-Inspector of Police on 11th October 1949. He served in various heavy stations like Arkonam, Vellore Crime Branch, etc., and handled several notable crimes and serious law and order problems tactfully. He located and got convicted a notorious gang of Ex-N.T.M. Koravas of Potharai and Sengunam who were responsible for a serious of highway dacoity cases in Kalambur and Polour Police Station limits in 1952. His assistance in detecting an intricate case of murder for gain of Santhaval Station was very valuable and the culprits responsible were convicted. While at Arkonam in 1954, he displayed exemplary and outstanding skill and ability in rounding up a notorious criminal organisation of Stuwartpuram of Andhra Pradesh, headed by one Ramiah, an Ex-Police Constable of Hyderabad, who was responsible for serious of inter-State lorry, car and bandy hold up cases of Tamil Nadu, Andhra and Mysore States. While convicting the accused, the trial court commended his work and the Government rewarded him in appreciation of his good work. The menace of wire thefts at Arkonam and its surrounding areas for a period of over five years from 1949 was put down by him in 1954 by tracking the criminal organisation responsible for them and all the accused were convicted.

In recognition of his good work, he was promoted as Inspector of Police on 1st June 1964. As Inspector of Police, Special Branch, C.I.D., Madras, he acquitted himself

creditably from 1964 to 1966. While at Arni Circle, he detected grave telephone copper wire theft cases and house-breaking cases for which he was rewarded. He joined the North Arcot Detachment, Vigilance and Anti-Corruption in November 1972 and he has been doing good work.

He has earned 207 rewards so far.

His service of 24 years has been marked by earnest devotion to duty, integrity, detective ability and tactfulness.

THIRU M. VENKATACHALAM

Inspector of Police, Madras City.

Thiru Mariappa Venkatachalam, was appointed as Sub-Inspector of Police in the year 1952. He was drafted to the Madras City Police in 1953, where he made a name by putting down prohibition and cotton betting offences ruthlessly.

He underwent a diploma course in Criminology and Forensic Science in 1962 and came out successfully.

He was promoted to the rank of Inspector in 1966 and was posted to the Directorate of Vigilance and Anti-Corruption, where he made a mark by collection of information and efficient investigation. In 1968, he reverted to the Madras City Police and continues to this day serving the people with efficiency.

He has earned 370 rewards and maintains clean defaulter sheet.

His 21 years of service is marked by efficiency, devotion to duty and integrity of a high order.

THIRU D. E. CHARLESLEY

Inspector of Police, Saint Thomas Mount.

Thiru D. E. Charlesley entered as a Sub-Inspector of Police in the year 1958. He distinguished himself by unearthing property offences, arresting condemned prisoners, who escaped from the Central Jail, Madurai, and by generally efficient investigation.

By his able investigations and alround efficiency, he earned his promotion to the rank of Inspector

of Police in March 1970. He was posted to the Special Branch, C.I.D., Madras, where he earned as many as 11 rewards for his efficiency.

He is now working in Saint Thomas Mount Circle in Chingleput East district, where he has proved to be highly successful against criminals and anti-social elements.

His service of over 13 years has been marked by industry, initiative and devotion to duty. He has earned 163 rewards and a Meritorious Service Entry.

THIRU ISMAIL KHAN BAILAM,

Sub-Inspector of Police, Thanjavur West.

Thiru Ismail Khan Bailam was enlisted as a Police Constable in 1942 in Tirunelveli district. By industry and efficiency, he rose to the rank of Head Constable in the year 1949.

He did excellent work in the District Special Branch, Tirunelveli district, by setting up valuable sources of information and was thus able to track the movements of anti-social elements and arrest them which was greatly appreciated by his superior officers.

In recognition of his continuous good work, he was promoted to the rank of Sub-Inspector of Police in 1954. He worked with distinction in heavy police stations.

He has earned 120 rewards and maintains a clean defaulter sheet.

His service of over long 30 years is characterised by efficiency, integrity and devotion to duty of a high order.

THIRU K. VENUGOPAL,

Sub-Inspector of Police, Tiruchirappalli.

Thiru K. Venugopal was enlisted as Police Constable in 1941. After his training, he was posted to several stations, where he proved his worth by hard work and efficiency. He was duly promoted as Head Constable and he justified his promotion by good work. He was then promoted to the rank of Sub-Inspector of Police in 1965. He did excellent work in the famous counterfeit currency note case in which a Mill Magistrate was involved. He has, thereafter,

worked in several Police Stations with distinction.

He has a clean defaulter sheet and has 91 rewards to his credit.

His service of over 32 years is marked by ability, integrity and devotion to duty of a high order.

THIRU V. CHINNA THEVAR,
Sub-Inspector of Police, Madurai North District.

Thiru V. Chinna Thevar was enlisted as a Police Constable in the year 1939 in Madurai South district. By reason of hard and efficient work he earned his promotion as Head Constable in the year 1946.

He did excellent work in the detection of a number of dacoities in various stations, viz., Andipatti, Keeranur and Veerapandi. His detective ability was fully utilized in the detection of thefts from bungalows of foreigners and tourists. His outstanding work in the arrest of B.C. Gurusami of Nagalapuram, who was terrorising the area with fire arms, was commendable.

He was promoted as Sub-Inspector of Police in the year 1966. He is prompt, reliable and hard working and can be entrusted with important and arduous assignments with confidence.

His long service of the over 31 years has been characterised by resourcefulness, loyalty and devotion to duty.

THIRU K. THANGAPPAN,

Reserve Sub-Inspector, Ramanathapuram.

Thiru K. Thangappan was enlisted as a Police Constable in 1956 in Travancore State Police. Consequent on the reorganization of the States, he was absorbed in Kanyakumari district with effect from 1st November 1956.

He was duly promoted as Head Constable in 1965. By dint of his hard work and ability, he rose to the rank of Reserve Assistant Sub-Inspector in May 1966. He is a good athlete and has taken active part in the State and All India Police Sports and Games and has been successful in several years.

Due to his outstanding ability he was promoted as a Reserve Sub-Inspector. His conduct and character have been exemplary throughout.

His service of 16 years is marked by sincerity, industry and ability of a high order.

THIRU R. KRISHNASAMY,
H.C. 173, Chingleput East district.

Thiru R. Krishnasamy was enlisted as Police Constable in the year 1941. On successful completion of training he was posted to the Armed Reserve, Chingleput district.

He has always been a hard and willing worker. He has taken pride in being always neat and clean in his turnout at all times. He has been a fine example to all the other men in the Armed Reserves.

He was later drafted to the Motor Transport Branch where also he has distinguished himself as a good driver.

His service of over 30 years sheet has been marked by efficiency, hard work and devotion to duty. He has earned 56 rewards.

THIRU RAMALINGAM,
H.C. 1844, Special Branch, C.I.D. Madras.

Thiru Ramalingam served in the Army for four years during the Second World War before he was enlisted as a Police Constable on 28th March 1947 in the Madras City Police. As a constable in the Madras City Police, he exhibited his skill in apprehending criminals concerned in several property crimes. He also exhibited his ability in assisting his superiors in the field of investigation leading to the recovery of properties from different places in the City. His work in rounding up of several narcotic and prohibition offenders was commendable.

For his good work, he was promoted to the rank of Head Constable on 1st October 1960 and he served in the Madras City Police, Food Cell and Prohibition Intelligence Bureau wings of the C.I.D. and his work was appreciated by his immediate superiors. He is working in the Special Branch, C.I.D. where also his work is commendable.

His long service of 26 years is marked by integrity, sincerity and devotion to duty. He has a clean defaulter sheet.

THIRU N. GOPALA PANICKER,
H.C. 340, *The Nilgiris.*

Thiru Gopala Panicker was enlisted as a Police Constable on 5th April 1942. By reason of outstanding ability as a detective and by his hard and sincere work, he was promoted to the rank of Head Constable.

His unquestionable integrity and efficiency has made him a natural choice for the investigation of all important cases. He has proved his worth in the field of intelligence as well.

His continuous record of over 30 years of service is marked by selfless devotion to duty and integrity of a high order. He has earned 131 rewards.

THIRU M. MEENAKSHI NAIDU,
Head Constable No. 561, *Vigilance Cell, High Court, Madurai Detachment.*

Thiru M. Meenakshi Naidu joined the Police Department as a Police Constable in the year 1942 and was posted to the Armed Reserve, Madurai. Even as a Probationary constable, he showed outstanding ability and courage in arresting anti-social elements at Kambam during a raid, when they were in unlawful possession of arms under Section 19(i) of the Arms Act and thus earned his first reward. Because of his hard work and devotion to duty, he was promoted as Head Constable on 2nd October 1947 within five years of his enlistment as Constable. He did excellent work in detecting cases of house gambling and took initiative in rounding up several bad characters under the Security Sections and earned as many as 18 rewards. He was of immense assistance to his superiors in solving complicated cases.

As a sequel to his integrity and devotion to duty he was absorbed in the Directorate of Vigilance and Anti-Corruption from its very inception in 1964 to 1969. During this period, he was instrumental in trapping six officers and successfully conducted detailed enquiries including the famous "Jamabandhi Case". He was then taken to the Vigilance Cell (Food), Madurai Unit and served there from 1st June 1969 to 30th June 1970. During this period, he was instrumental in detecting nearly 150 cases and earned a number of rewards.

He joined the Vigilance Cell, High Court, Madurai detachment in 1970 and continues to do good work as before. He has done commendable investigation in certain enquiries relating to corrupt practices of certain Judicial Officers.

His service of 31 years is marked by efficiency, integrity, loyalty and devotion to duty of a high order. During his tenure of office, he has earned as much as 238 cash rewards and four Good Service Entries.

THIRU KUPPUSWAMY RAJU,
Leading Fireman 19 (*Madras City Division*).

Thiru Kuppuswamy Raju, Leading Fireman 19 was enlisted as Fireman in the Tamil Nadu Fire Service on 24th April 1942. His smartness and sense of discipline attracted the attention of his superiors, who promoted him to the rank of Leading Fireman on 1st May 1943 itself. During the 31 years of service, he has worked in heavy Fire Stations in Madras City. His work throughout has been characterised by ability and keenness. His capacity to enforce discipline and his exemplary sense of duty marked him for selection to the post of Leading Fireman in the Fire Control Room, Madras. He acquitted himself well in this assignment. When there were unprecedented fires in Madras City during June-July 1968 in hutted areas, as Leading Fireman in charge of Fire Unit, he rose to the occasion and relentlessly fought the fires untiringly and with high devotion to duty.

This Leading Fireman has put in 31 years of service and throughout this period, his hard work was characterised by discipline, high sense of duty and integrity and has been an example for others in the department to emulate. Throughout his long service he has maintained an unblemished record, which is no mean achievement, for which he has been granted Long Service Special Pay of Rs. 2 per mensem. He has earned nine rewards in all, eight cash rewards and one Good Service Entry. His long and outstanding service is marked by ability and merit.

THIRU VARADARAJULU VEERARAGHAVAN,
P.C. 105, *Government Railway Police, Tiruchirappalli.*

Thiru Veeraraghavan was enlisted as a Police Constable in Madras City in 1939 and served efficiently in the Armed Reserve till 1947. He joined the Railway Police in 1948.

He is a willing worker and has taken keen interest in sports activities. He took part in several shooting competitions and was awarded prizes. He was always found smart in his turnout and is conscientious.

He has earned 81 rewards and maintains a clean defaulters sheet.

His service of over 34 years has been marked with loyalty, devotion to duty and integrity of high order.

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The Prime Minister inaugurating the Pamban Road Bridge work.

PAMBAN—THE FIRST

ROAD BRIDGE TO THE RAMES- WARAM ISLAND

Thousands of pilgrims from all over India visit the Sri Ramanathaswami Temple at Rameswaram. The pilgrims have to cross the Pamban bridge which lies between Mandapam and Pamban Station, only by train as this Railway bridge has been the only link with the main land. This bridge was constructed in 1914 to connect Mandapam and Rameswaram, and till date it is considered to be a great "engineering feat", because it is one of the longest bridges in the world. The bridge was damaged during the storm of 1964 and in 1965 it was restored much earlier than expected.

THE PAMBAN ISLAND

The island of Pamban lies at the tip of Ramanathapuram district on the West and Ceylon in the east, being separated from the former only by a narrow passage or channel which opens in the north into the waters of Palk Strait and on the South into the Gulf of Mannar. The island is about 11 miles long by 6 miles wide. The eastern half is merely a narrow strip of sand running down to join Adam's Bridge, and the remainder is based on rock of coral formation and is chiefly covered by thorny acacias or by swamp, there being little cultivation of any kind. The chief town is Rameswaram.

The town of Pamban, which is said to derive its name from the tortuous, snake-like course of the above-mentioned channel, is situated at the western extremity of the island, and is one of the two largest sea ports in Ramanathapuram district. A light house rises 97 feet above high-water mark, showing a light visible at a distance of 12 or 14 miles. It is one of the chief points of departures for emigrants and other passengers to Ceylon and it also receives the numerous pilgrims who visit the temple at Rameswaram. The number of passengers and pilgrims who arrive at it has increased considerably since the opening of the railway to Mandapam on the mainland opposite the Channel. The climate is considerably cooler than that of the mainland and the town was formerly used as a health resort by European officials. The ruins of a Dutch fort are still to be seen.

Pamban passage or channel is a partly artificial channel which runs between the western extremity of Pamban Island and the mainland of India, connecting Palk Straits and the Gulf of Mannar. It has been deepened by the Government in order to allow sea-going ships to pass along by this quicker and more sheltered route. Geological evidence tends to show that in former

times the gap was bridged by a continuous isthmus; and until it was deepened the passage was quite impracticable for ships being obstructed by two parallel ridges of rock reaching just above the high-water mark and about 140 yards apart, the space between which was occupied by a confused mass of rocks lying for the most part parallel to the ridges in the horizontal strata of sand stone formation. The first proposal to deepen this Channel for traffic was made by Colonel Manuel Martineo who brought the matter to the notice of Mr. Lushington, then Collector of Southern Provinces and afterward Governor of Madras.

A scientific marine survey of the Channel was conducted in 1837. Operations for deepening and widening the Channel were begun in 1838 and continued for many years. It is now about 80 feet wide, 14 feet deep at a minimum, and 4,232 feet in length, and is used to a large extent by coasting vessels. Proposals were under consideration to bridge the Channel and to carry the railway across it to Rameswaram to cut a canal through Pamban Island large enough to take sea-going ships; to establish a ship basin in one part of this canal and connect it with the railway and eventually to continue the railway across Adams Bridge to Ceylon. Most of these grandiose schemes did



Thiru P. U. Shanmugam, Minister for Public Works, is seen garlanding the Prime Minister on arrival at Pamban.

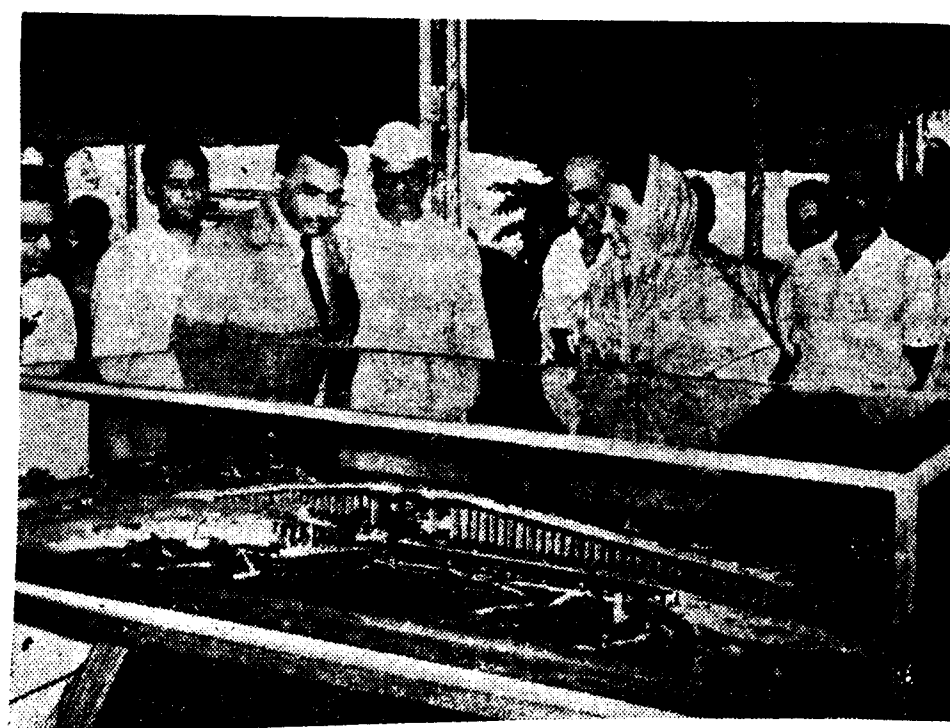
not fructify. The present road-bridges is the first improvement that is taking place.

COMPLETING ALL MISSING ROAD LINKS IS AIM OF FIFTH PLAN.

The 7,692-foot-long bridge would have approach links costing Rs. 51.01 lakhs. It would have a prestressed concrete superstructure

with foundations taken down to rock. There would be one navigation span, about 330 feet long with a vertical clearance of 55 feet above the high tide level for an uninterrupted passage of ships underneath. The bridge would have a carriage-way 7.5 metres wide and two foot-paths each 1.5 metres wide. The road over the bridge would slope down from the navigation span towards the shores in a gradient of 1 in 100 on the Mandapam side and 1 in 50 on the Pamban side. The lowest point of the bridge deck would be kept at a minimum height of 20 feet 6 inches above sea level to ensure safety of the superstructure from the tidal waves. The approaches to the bridge would be about 5 km. and 2 km. long on the Mandapam and Pamban sides respectively. The bridge, which would cost in all Rs. 5.3 crores, would take four years to build.

The Pamban Bridge would, besides fulfilling the long cherished desire of the people to have an uninterrupted road communication to the famous pilgrim centres of Dhanushkodi and Rameswaram, would also provide the last missing link in the National Highway System in Tamil Nadu. With the completion of the bridge, there would be no unbridged river crossing left on the National Highway. The bridge was also of paramount importance as it fell on the Asian Highway No. 4 which was ultimately going to link up Sri Lanka with India through a ferry service.



The Prime Minister seeing the model of the Pamban Road Bridge.



Panoramic view of the Anai-karaipatti Motor-cycle factory of M/s. Enfield India

ENFIELD INDIA'S SECOND MOTOR-CYCLE FACTORY AT

ANAIKARAI-PATTI IN RAMANATHAPURAM DISTRICT

Inauguration of the Enfield India's second motor-cycle factory at Anai-karaipatti in Ramanathapuram district on 17th September, 1973 by Dr. M. Karunanidhi, Chief Minister of Tamil Nadu heralds a significant break with the established and existing custom of setting up of heavy industries in and around the metropolitan cities. It signifies a leap forward in the pace of industrialisation of backward areas in the State. It is the first unit to be set up and going into production in the backward region of the State. And it is also the first vehicle producing unit of its size to spring up in a backward region in the whole country with an annual installed capacity of 14,000 motor cycles. As such, it is a forerunner in this line and augurs well for the future pace and phase of industrial progress in a well-laid out and wide spread manner in the State, thereby providing a timely boost and boon to the spreading of industrial units in rural areas in large measure.

The factory is located in a total area of 46 acres of which the factory premises comprise 32 acres of land, the rest being occupied by 13 ancillary units set up there. The

capital outlay of the factory is Rs. 95 lakhs in addition to the working capital of over Rs. 1 crore. The capital outlay of the eleven small-scale units and two medium scale units works out to Rs. 81 lakhs.

The Enfield is providing a good deal of help and a good number of incentives to the small and medium scale industrial units adjacent to it in the form of technical and management know-how, preparation of project reports, advice in the selection and procurement of plant and machinery, obtaining of term loans for them, and above all, supplying raw materials and getting back the finished components from them in easy and effective terms and condition. All the ancillary units are engaged in production of different components useful to the main factory. As such one unit produces electro-plating while the second one is engaged in the production of sheet metal pressing and fabrication. Another one manufactures flywheel magneto while the fourth one is building frames. Likewise, all the ancillary units are engaged in the specialised production of various components required for the main factory.

One of the welfare measures executed by the Company is construction of a workers hostel which gives accommodation to the labour force of the factory as near the factory as possible. The worker's Hostel was declared open by Thiru Madhavan, Minister for Industry.

SIPCOT'S.

Loan Facilities.

In all, a total capital of Rs. 3 crores has been employed in the main factory as well as the ancillary units. This huge investment in a relatively backward region is likely to confer considerable benefits to the region in a short period. The capital amount has been drawn from many a public financial institutions. Thanks to the policy of the Tamil Nadu Government to encourage setting up of big industrial units in a comparatively backward region in the State so as to give industrial tenor to those areas, the State Industries Promotion Corporation of Tamil Nadu have granted to Enfield an interest free loan to the tune of Rs. 23.18 lakhs repayable after 18 years in three annual instalments. Under the same scheme, the Corporation has also sanctioned an interest-free loan of Rs. 11.90 lakhs to the 2 medium scale units. So also, the Tamil Nadu Industrial Investment Corporation has given in all a sum of Rs. 51 lakhs as loan at 7 per cent interest to the 11 small scale ancillary units as well as the 2 medium scale units.

THE FIRST UNIT TO BE SET UP IN THE BACKWARD AREA IN THE COUNTRY

Besides this, the Company received a loan assistance of Rs. 50 lakhs from the Industrial Finance Corporation of India at seven per cent interest in addition to a subsidy of Rs. 5 lakhs from the Union Government.

Starting a new factory, especially in a backward region, involves for the sponsor a higher capital cost in view of lack of infra-structural facilities as well as production facilities, apart from considerable amount of additional efforts to make it a going concern. It also involves additional recurring expenditure on items like freight and duplication of certain functions. Notwithstanding these natural obstacles, the Enfield has started its second unit at Anaikaraiatti because of the abundant availability of ground water in the area in addition to its nearness to the commercial centres such as Madurai and Tiruchirappalli.

This factory and its ancillaries are capable of giving employment for over 1,200 persons including 100 engineers. Precise estimate regarding the employment potentiality indirectly influenced and induced by the sales and service agencies of the Company could not be ascertained now. But it will not be an exaggeration to say that the multiplier effect will be nearly quite large.

Presiding over the inauguration of Enfield India's second motorcycle factory at Anaikaraiatti, Thiru T. A. Pai, Union Minister

for Steel and Heavy Industries, expressed his mood of happiness over the fact that this part of the country witnessed for the first time in the country the moving of an industry to rural area, creating more potential for employment and development. He added in a warning tone that mere location of industries in backward areas alone would not help. But success, by and large, depended upon the attitude of the entrepreneurs. He emphasised that local capital should be mobilised for these dispersed industries.

Regional Markets

He also said that "You may have to think of regional markets" in the light of changing pattern of industrial development in the country in the period ahead. "There will be more units and also more and more competition" he added. He also said the present output of two lakhs of motorcycles, scooters and mopeds would be increased to eight lakhs by the end of the Fifth Plan. He suggested that manufacturers of two-wheelers should aim at bringing down the prices as low as possible so that more and more people could avail of this mode of transport.

Tamil Nadu in the Forefront

Inaugurating the factories of Enfield India and ancillaries, Dr. M. Karunanidhi, Chief Minister of



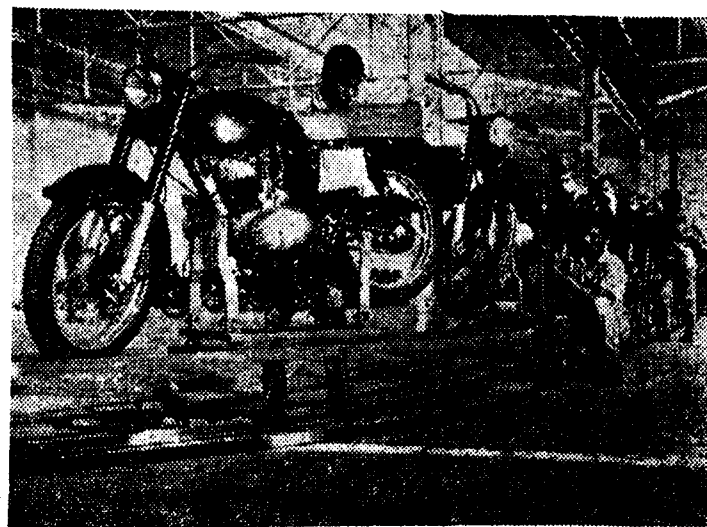
Dr. M. Karunanidhi is seen inaugurating the Enfield India's second motorcycle factory at Anaikaraiatti.

Tamil Nadu, felt happy that the new units meant job for 1,200 workers. He added starting of industries in rural areas would help to arrest the migration of villagers to towns and cities. The Chief Minister also pointed out in his speech that though Tamil Nadu stood in the forefront in the matter of industrial development, there were backward areas in many districts in the State.

He put an ardent appeal to the Union Minister, Thiru T. A. Pai, to give special attention to the improvement of these areas.

He added that the State Government was keen on starting its own ventures but it was committed to encourage joint sector projects and help private industries to relieve the growing unemployment problem. ☉

Enfield Line Assembly Section.



Enfield Machine Shop.



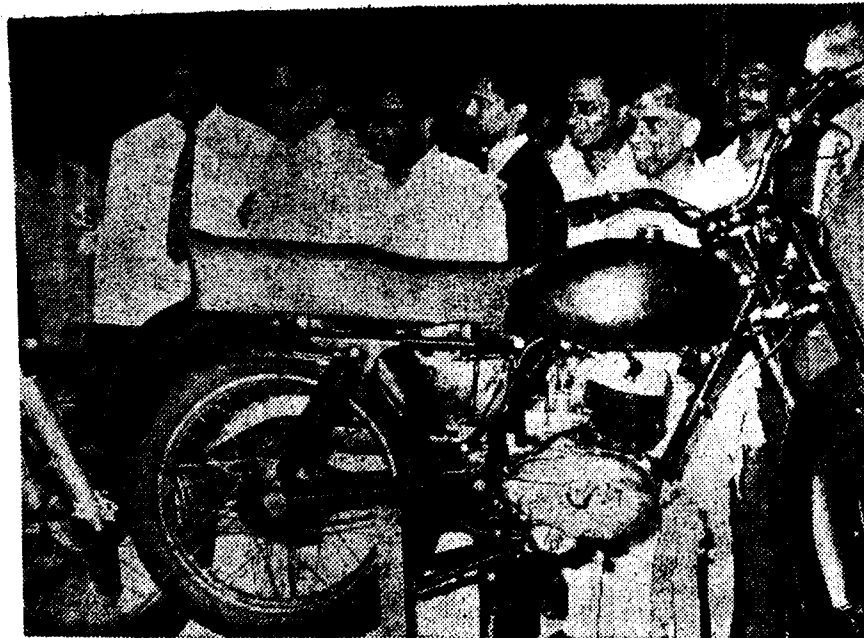
The Chief Minister and others seeing the assembled motorcycles.



The Enfield— Origin And Growth

The Royal Cycle and Motor Company, a partnership firm was first established in the year 1930 to do the business of importing and selling bi-cycles. In 1937, the partners of the firm K.R. Sundaram Iyer and K. Eswaran started a separate department for importing and selling motorcycles. It can be said that the first foundation stone was laid in 1937 for the ultimate birth of Enfield India. Visualising large market potential for motorcycles, Sundaram Iyer and Eswaran started the Madras Motors, Private, Limited, to concentrate in the sales and after-sales-service of motorcycles.

In those years, under Open General Licence, anybody in the country could import any quantity of motorcycles from any country. Against stiff competition, Madras Motors steadily expanded its business, and from 1950, they were selling more motorcycles than at all the others in the country put together. In 1952, Madras Motors commenced making plans for taking up the indigenous production of motorcycles under phased programme of import substitution. Of the various makes of foreign motorcycles in which they were dealing, Royal Enfield of U.K. was chosen for the purpose. Eswaran attended to the important matters of securing the Industrial Licence from the Government of India and negotiating the technical collaboration agreement with Enfield Cycle of



The Chief Minister and others seeing an assembled motorcycle "CRUSADER".

Enfield— A Famed Byword In Every Nook And corner Of The Country

U.K. Madras Motors commenced indigenous production of motorcycles in 1955. Import of motorcycles was continued to be permitted and posed stiff competition. In order to meet this situation, it was considered that Madras Motors should continue to concentrate in marketing and a separate company should be started to concentrate on production and achieving fast progress in increasing indigenous content. Thus, Enfield India was born and incorporated in November 1955 and commenced activities in 1956. With the consent of Government of India and Enfield Cycle of U.K., the Industrial Licence and technical collaboration agreement respectively were transferred to the Enfield India, Limited, by the Madras Motors without any consideration.

Enfield produces two models, namely, 350 cc. Bullet and 173 cc. Crusader.

Enfield supplies the entire requirements of motorcycles of Defence Forces, who have standardised on the 350 cc. Bullet. Police and Border Police forces also use the Bullet.

In fact, Enfield's Bullet and Crusader Motorcycles are used in every nook and corner of the country from Kashmir to Cape Comorin—

(a) by Government departments to facilitate field work pertaining

to development and construction activities and in implementing measures for the welfare of the people;

(b) by industrial undertaking in the Public and Private Sectors; and

(c) by all categories of persons engaged in productive activities for performing their work and as personnel transport — examples, farmers, entrepreneurs in the small scale sector, engineers, Government employees, etc.

Villiers Agro-Industrial Engines which can be operated either on petrol or kerosene :

Enfield produces, at its factory in Toraiyakkam, Mahabalipuram Road, Madras, three models of engines, namely, 34 cc. 120 cc. and 256 cc. which are used as prime movers in a variety of agricultural and industrial applications. Over 80 per cent of the production of these engines cater to the needs of Agriculture and Defence. A substantial portion of the knapsack sprayers produced in the country for plant protection are fitted with Villiers 34 cc. engine. The 120 cc. and 256 cc. Villiers engines are fitted as prime movers for portable pumpsets for irrigation (used by farmers with small and scattered holdings, Grain Threshers and Grain Driers) and in the battery charging sets and generating sets used by Defence and Police. They are also fitted to a number of other equipments like Concrete Vibrators, Concrete Mixers, Portable Compressors, etc.

Agro-Industrial Engine Production is now at the peak level of permitted capacity:

The licenced capacity for Agro-industrial engines is 40,000 Nos. per annum. The Company has now reached a monthly production of 4,000 engines, equivalent to 50,000 engines per annum, up to which the Company can produce as permitted by Government Policy. It is proposed to shortly apply to the Government for a licence for substantial expansion of the Company's undertaking for the manufacture of engines.

Indigenous Content

The indigenous content of Vehicles and the Agro-Industrial Engines

Enfield

Suppliers Of Motor— Cycles To Defence, Police And Border Police Forces, Etc.

produced by Enfield
daily 100 per cent.

Export Performance

Efforts were commenced only recently, but fast progress has been made. Exports during 1972 was nearly Rs. 30 lakhs and it would be about Rs. 40 lakhs in 1973. It is expected that the value of exports will increase at the rate of about 10 lakhs per year. The bulk of the present Exports is contributed by Agro-Industrial Engines.

The Enfield plan for Rural Industrialisation

A major problem in rural areas is the seasonal employment of agricultural labour. It is the intention of Enfield India to attempt to play a catalytic role, however modest, in the above and other similar matters by making available its technical and managerial know-how to facilitate the accelerated development of this and surrounding areas. As a step towards this, studies will soon be initiated to assess the feasibility of promotion of cottage industries preferably with local agricultural wealth, example coconuts, which will enable the economic cycle of persons now on seasonal employment going on a continuing basis and also the promotion of self-employment for rendering service and producing articles which in the normal course will be acquiring from commercial centres such as Madurai and Trichy. If, as it is hoped, the result of the study indicates feasibility, Enfield will endeavour to organise a centre to give training to individuals to enable them to undertake ventures with a small investment which will be of an order the nationalised banks of this area would be prepared to advance as loan.

Dedication

The Board of Directors dedicate themselves to develop this new factory complex on a sound line to fulfil the aspirations of the people of Tirupattur taluk and surrounding areas for increased employment opportunities and for the over-all development of the area and faithfully discharge their duties for the welfare of workmen, staff, engineers and executives, shareholders and all those connected with the organisation.

Thiru Madhavan, Minister for Industries, who declared open the Worker's Hostel at Anaikaraipatti, is seen addressing the distinguished audience explaining in detail the pragmatic and practical industrial policy of the State Government.



The Entrepreneurs of 10 small scale units in Enfield Complex in Anaikaraipatti are from Singampureri and the surrounding areas while the eleventh unit is owned by the Executives of the Enfield India.

(ii) Three units will be manufacturing components out of tubes and bars; and

(iii) Two units will be producing components out of castings.

Manufacturing Capacity

The manufacturing capacity of the eleven small scale units have been planned only to meet the Enfield's requirements. However, they are free to undertake work from others either by achieving a higher level of efficiency than what is contemplated and/or by adding to their capacity.

Two medium Scale units

One will be engaged in the manufacture of steel forgings and the other in the manufacture of Gravity Die Cast components. The entrepreneurs of these two units (who, incidentally, are associated with some of the Directors of Enfield India) are on their own, as they are running similar industries in Madras and do not require any assistance from Enfield India. They already have plans to supply forgings and die cast components to others also.

None of the owners of the eleven units is associated with the Directors of Enfield India.

One unit will do electro-plating.

There is one unit for sheet metal pressing and fabrication.

There is another unit which will be engaged in the manufacture of flywheel magneto, while the fourth unit will be engaged in the production of frames.

Seven Machine Units

The remaining seven are machining units which will produce the following components :—

(i) Two will be engaged in the manufacture of components out of forgings;

IS KHADI COSTLIER?

There is a common misconception about Khadi that it is costlier, coarse and not durable and does not offer many varieties, etc. This is, however, only a misconception that has to be shed. With the revival of muslin Khadi, an age-old fame of India, it is possible for skilled hands to produce cloth of 250 counts where a seven sophisticated mills find it difficult to produce cloth of 150 counts fineness. As a result of continuous and sustained efforts in evolving new techniques and methods there has been a tremendous improvement in the production of Khadi cloth in recent times.

It is no secret that the silk sarees produced from centres at Kancheepuram, Arni, Salem, Rasipuram, Kumbakonam, Dharmavaram and Varanasi are of superior quality and more durable than any other comparable variety available in the market. There has been a steady increase in the demand for Khadi. The annual turnover which was in the order of a few lakhs in 1960 touched Rs. 1,009.81 lakhs in 1972-73. The production of silk sarees alone is in the order of Rs. 8 to 9 lakhs per month. And the Khadi Board as an air-conditioned silk emporium at Myslapore.

Sales Units

Through a network of sales units known as Khadi Krafts numbering about 178 throughout the State, the Khadi and Village Industries products are marketed. The emporium housed in our own buildings at Kuralagam is perhaps the biggest of its kind in India.

What are the factors that determine the cost of a product? The cloth is produced where labour is available in plenty. As far as raw materials—cotton for cotton Khadi; silk for silk Khadi; wool for woollen Khadi—are concerned, there is absolutely no difference between the Khadi sector and the mill sector. Both will have to buy raw materials in the same market. This being a programme with a socio-economic background, interest-free loans are available for purchase of

raw materials, for paying wages to the spinners and weavers, for organising marketing units, etc.

Meagre margin of profit

Further, there is what is known as Cost Chart formulated by the Central Certification Committee of the Khadi and Village Industries Commission. This Cost Chart is prepared taking into consideration the cost of raw materials, the labour content, subject to local variation and a meagre margin of profit sufficient enough to meet the establishment charges. This Chart is uniformly made applicable to all the State Boards and certified Institutions engaged in Khadi production.

It is here that we differ basically from the mill sector. It is an open secret that the mill sector aims at maximum profit, for no money is available, interest-free; the overhead charges are many and the expenditure on publicity is unimaginable.

High Labour Content

Except that the labour content is more in Khadi cloth which is more or less neutralised by the interest-free money that we get

D. GANGAPPA, I.A.S.,
Chief Executive Officer,
Tamil Nadu Khadi and Village Industries Board, Madras.

from the Government, there is no other convincing reason to tell that Khadi cloth is costlier. Though the price of mill cloth has gone up several times due to the abnormal increase in yarn prices, during the power cut we had no such problems, thanks to the millions of spinning and weaving hands which required no power to produce cloth.

It is therefore paradoxical that cloth-pure and simple cotton; simple and stimulating readymade garments and pure and fascinating silk sarees are considered beyond the reach of common man. The possible reason that we could see

in this is that there is lack of publicity. But any expenditure on publicity will only add up to the cost of cloth which will have ultimately to be passed on to the consumer.

Not costlier

There may also be a feeling that maintenance of Khadi cloth is costlier. But the cost of maintenance is in relation to the degree of cleanliness that one expects.

A glance at the following facts and figures relating to the cotton, khadi, silk and other readymade may help convince to appreciate the view that Khadi cloth is certainly not costlier and that it is any day the best and cheapest.

Readymade Garments.	Price.
	RS. P.
White slacks 32"	8.40
26"	9.20
Colour slacks 32"	9.00
36"	9.95

Children's Garments :

Baba Suit	6.50
Bell Bottom	12.75
Bedsheets 6' x 3'	11.25
D.T. Varieties 7' 4"	19.80
Furnishing Cloth—per metre	7.30

Cotton.	Count.	Width.	Per meter.
Cloth—			RS. P.
White	32	127c.m.	3.60
Shirting	44	127c.m.	4.25
	75	127 c.m.	5.70

Mukul—			
Lok Vastra	2/32	71 c.m.	3.00
Dousti—			
Drill	2/33	76 c.m.	3.71

The price of Village Industries products like soap, honey, oil, etc. too is quite competitive. Moreover, it is a well-known fact that the Tamil Nadu Khadi and Village Industries Board has a programme and philosophy to provide jobs to the weaker sections of the society. The Board being of State undertaking, has got to function within the framework of governmental rules and regulations and as such there is hardly any scope for us aiming at profit.

Extensive Public Health Programmes In Operation in Tamil Nadu



Youth Service Corps volunteers help in health services.

Health is not merely absence of disease. It is a state of complete physical, mental and social well-being. Every individual should be assured reasonable opportunity to maintain his health at the highest possible level so that he can contribute his best to the society by his productive efforts. Towards this aim, the Government of Tamil Nadu have taken steps to provide various community health services for the promotion of community health care including maternal and child health, the improvement of nutritional status of people, prevention and control of communicable diseases, the registration of vital events and the spread of health education among the people and the promotion of environmental sanitation.

Primary Health Centres

The Primary Health Centre is an institution which offers a package of services to the people living in its jurisdiction which is usually the area covered by a block (now Panchayat Union). There are 374 blocks in our State. Primary Health Centres have been established in all the blocks except in two blocks in Salem District, namely, Ellichipalayam and Rasipuram blocks. Seven blocks in the State have two Primary Health Centres each. Thus there are 379 Primary Health Centres in our State.

The services rendered by a Primary Health Centre include general medical care, improvement of maternal and child health, family welfare planning, improvement of environmental sanitation with emphasis on sanitary disposal of excreta, safeguarding drinking water sources, control of communicable diseases by immunisation with suitable vaccines, and by surveillance to detect the occurrence of communicable diseases like smallpox, cholera and malaria, nutrition education and control of nutritional diseases, collection of vital statistics and improving the registration of vital events of births and deaths and health care and education of school children.

For the purpose of medical care, every Primary Health Centre has an out-patient department and an in-patient section with 6 beds. At the out-patient department, the patient is examined and given appropriate treatment. In the conventional dispensaries and hospitals, while the service stop sharp at the level of dispensing drugs, at the Primary Health Centre, further services extend from these patients to their contacts who are given appropriate treatment both preventive and curative. The patient and the contacts are educated about the nature of the disease, its mode of spread and about the methods of disinfection of infective materials.

Out of the 379 Primary Health Centres now functioning, 149 Primary Health Centres are now functioning in their own buildings. Buildings for 22 Primary Health complex, i.e., dispensary plus staff quarters and 21 staff quarters are under construction. The other 187 Primary Health Centres are functioning in rented buildings.

Second Primary Health Centre

The Government of India have recommended that, in order to serve a larger section of the rural people, a second Primary Health Centre may be established in each block. The State Government are examining the question of establishing second Primary Health Centres in the blocks in a phased manner. The blocks having a population of one lakh and more being selected for the establishment of second Primary Health Centres in the first phase.

The total amounts allotted for the Primary Health Centre for the last

two years, the current financial year and for the year 1973-74 are as follows:—

Year.	Amount.
	(RUPEES IN LAKHS.)
1970-71	127.57
1971-72	177.10
1972-73 Revised estimate	176.48
1973-74 Budget estimate.	181.15

Maternity and Child Health Services

In maternity and child health services, the emphasis is ensuring the birth of a healthy child to a healthy mother and safeguarding the health of mother and child thereafter. For the purpose, at present, mothers, when they are in the 5th month of pregnancy, are enrolled for ante-natal care. The ante-natal registration is done by the Maternity Assistants/Auxiliary Nurse and Midwives of the Primary

Health Centres and the various maternity centres in the Panchayat Union Blocks.

Every ante-natal mother is given a health check-up especially to detect any abnormality in her or in the lie of the foetus. Special emphasis is given to detect anaemia, signs of toxemia and mal-nutrition in the pregnant woman. She is given proper advice on the diet to be taken and on her personal care during pregnancy. She is educated on infant feeding, immunisation schedule and childhood diseases and on family planning methods.

At present, maternity centres are established at the rate of one per ten thousand population. The total number of maternity centres as on 1st January 1972 is 3,801. The centres maintained by the Panchayat Union Councils are in receipt of a Government grant equivalent to two-thirds of the recurring expenditure incurred by them. A sum of Rs. 39,74,766 was given to them as grant during 1971-72.

LIMBS OF HEALTH SERVICES REACH REMOTE VILLAGES

Vaccination and immunisation injections are routine measures of child care even in villages as seen in picture below.





Routine inspection of healthy babies against preventable malnutrition.



Rehabilitation of polio victim through exercise therapy in Children's Hospital.

There are 68 Maternity Homes and 303 maternity centres functioning in the municipalities. They are in receipt of the Government grant equivalent to 25 per cent of the recurring expenditure incurred by them. During 1971-72, a sum of Rs. 6,59,617 was sanctioned for the purpose of the above grant.

In addition to the maternity centres maintained by the Panchayat Unions, the Government have established at 76 villages Maternity Centres as a part of the post-war reconstruction programme. These centres have been located in remote villages then considered as backward areas. The total expenditure on these maternity centres for 1971-72 was Rs. 5,31,556 and provision made for them in the Budget Estimate for 1972-73 is Rs. 5,27,500.

Children Immunisation Programme

The immunisation of pre-school children is being implemented in rural areas in the State from 1st October 1964 through the agency of Primary Health Centres. The children in the age-group 0-5 years are taken up for immunisation with triple vaccine as a prophylactic against diphtheria, tetanus and

whooping cough concentration being made on children under one year of age. Each child is given three doses of D.P.T. at intervals of one month between each dose. The target for immunisation is 900 children per Primary Health Centre per year. The particulars regarding the number of children immunised with all the three doses during the period from 1969-70 are as follows :—

Year.	Number of children immunised.
1969-70	87,239
1970-71	97,358
1971-72	103,667
1972-73 (up to December 1972).	71,542

Apart from these effective and efficient measures are in operation in Tamil Nadu to prevent the recurrence of epidemic diseases such as Cholera, Small-pox, Malaria, Urban Malaria, Filaria, Yaws, etc. For the control of Cholera, besides

the long-term measures like provision of safe water-supply, sanitary latrines, etc., other steps are also being taken to attend to instant cases. To attend to this duty there is a reserve of 64 Health Inspectors, whose main duty is, on information about occurrence of Cholera anywhere in the State, to go to the area of occurrence and help the local Staff engaged in the line in the matter of control measures such as mass anti-cholera inoculations, chlorinating water-supply and disinfection of stools. There are also mobile epidemic units with health staff and ambulance and jeeps in requisite strength. One ambulance van is located in each of the following centres—Poonamallee, Kancheepuram, Cuddalore, Madurai, Tirunelveli, Coimbatore, Salem, Vellore and Ramanathapuram. Jeeps are provided for each district to attend to epidemic control.

The number of anti-cholera inoculation done in the State during the year 1972 was 1,669,731. Thanks to the various preventive measures adopted by the Government, the number of attacks and deaths in 1972 has come down to 3,670 and 205 respectively from 6,508 attacks and 3,298 deaths in 1958. The

entire expenditure on the Cholera Control Programme is reimbursed by the Government of India.

Prevention of Small-Pox

Small-pox is a virus disease spread from one person to another. To put an end to this dreadful disease, the National Small-pox Eradication Programme was launched during 1963-64. There are 1,410 Vaccinators, 97 Supervisors, and 35 Selection Grade Health Inspectors in the Public Health Department to attend to the works of the National Small-pox Eradication Programme. The Government have sanctioned in December 1972 an additional strength of staff to the extent of 199 Vaccinators, 50 Supervisors, and 5 Selection Grade Health Inspectors to improve the coverage of vaccination and for greater vigilance.

The expenditure incurred under this programme during 1971-72 was Rs. 20.82 lakhs. The provision made for this in the Budget Estimate for 1973-74 is Rs. 21.28 lakhs.

Thanks to the sincere and serious work of all the staff of this programme coupled with the active co-operation of the public, small-pox has been practically eradicated in Tamil Nadu.

Plague Control

Plague, a disease of the rodents transmitted from rats to human beings by the rat fleas, was a major problem in the past. But now it is almost non-existent in our State. In spite of it, routine preventive measures are continued for the control of plague in the plague epidemic areas, namely in the districts of Dharmapuri, the Nilgiris, North Arcot and Coimbatore and in the municipalities of Ootacamund, Coonoor and Vellore.

Since 1958-59, the National Malaria Eradication Programme is being vigorously implemented in Tamil Nadu. A bureau for malaria and mosquito borne diseases exists with a well equipped machinery at the State Headquarter, in addition to two regional Malaria Organisation at Thanjavur and Coimbatore with established laboratories and facilities for training, research and investigation.



A case of severe malnutrition being attended to by means of intravenous fluid therapy.

In the early phase of the programme, D.D.T. spraying was applied to reduce the Vector density and house-to-house surveillance was conducted, to detect malaria-afflicted individuals. By such intensive measures, malaria has been put an end to in 28.75 units and in 3.05 units the problem is in consolidation phase where intensive research for malaria patients is undertaken. Further, in the area which have entered into the maintenance phase of the N.M.E.P., Basic Health Services have been set up from 1st April, 1969. As many as 353 Panchayat Unions out of a total strength of 374 Panchayat Unions, are in the maintenance phase areas.

The scheme of Urban Malaria has been sanctioned by the State Government for the three towns of Salem, Rasipuram and Tuticorin and the question of sanctioning the scheme

for Elampill and Madras City is under the consideration of the Government.

Since 1957-58, four National Filaria Control Units are functioning in the districts of Chingleput, North Arcot, South Arcot and Thanjavur. Each Unit carries out anti-larval operations by spraying mosquito larvicidal oil, supplemented by minor engineering measures so as to benefit a population of 3.75 lakhs exposed to the risk of filariasis.

Under the reorganised filaria control programme, eight new units have been set up at Kancheepuram, Villupuram, Cuddalore, Thanjavur, Nagapattinam, Srirangam, Pudukkottai and Madras City. Altogether 12 units are now functioning in the State and the total population benefited by them is estimated to be 45 lakhs.

Weather exerts a great influence on crops at all stages of cultivation. Advance warning of the likely weather for the next 2-3 days greatly facilitates economy and timely execution of farm operations. Realising this fact and necessity, the India Meteorological Department was set up. Now it has grown to the status of a Division and is making all round progress in the field of Agricultural Meteorology.

AGRICULTURAL METEOROLOGY IN INDIA

The influence of weather on crops was realised as early as 1922 when, on the recommendation of the Royal Commission of Agriculture, the Central Government created a unit in the India Meteorological Department to study the influence of environmental factors on all aspects of agriculture. This unit has slowly grown to the status of a Division and is making all round progress in the field of Agricultural Meteorology.

In its early years, the activities of the Division were mainly confined to the study of climatic conditions near the ground, development and instrumental techniques for recording observations, and soil water phenomenon. In 1945, a major step was taken when the Division undertook to render to agricultural institutions all technical assistance for setting up of specialised meteorological observatories, so as to inculcate weather consciousness amongst the research and field workers in agriculture, and to develop a plant environment-climatology. This has resulted in steady growth of such observatories which number about 140 now.

Weather exerts a great influence on crops at all stages of cultivation. Advance warning of the likely weather for the next 2-3 days greatly facilitates economy and timely execution of farm operations. Realising this necessity, the Division prepared and issued to the regional forecasting centres material for framing special farmers' weather bulletins. This useful service was started in July 1945 by the regional forecasting centres of the India Meteorological Department. These bulletins include an outlook of weather for 2 days beyond the forecasting period of about 36 hours and are broadcast by All-India

Radio in regional languages, in dialogue form, in the Farmers' Forum.

The Division commenced issuing crop outlooks based on the week by week progress of weather and its deviations from the normal, in a particular area. These crop outlooks are essentially an objective assessment of the crop prospects in each meteorological sub-division. For the last five years, these are supplied to the Ministry of Food and Agriculture, Government of India and released through press, as well.

In late fifties and the early sixties, the Division laid emphasis on studies relating to the optimum utilisation of irrigation resources. Experiments were conducted to develop techniques for assessing evaporation losses from storage reservoirs and to determine the periodic and total water requirements of crops.

Drought Study

The wide spread famine in the year 1965-67 aroused deep concern regarding the nature, distribution and recurrence of drought. A special Research Unit was set up to describe and study the climatology of drought and to predict crop yields from meteorological parameters, principally rainfall and temperature. To help agricultural production specialists in planning an effective overall strategy for increasing crop production, supply of data concerning Agromet and weather observatories to selected addressees, was started. Significant meteorological and crop data of interest to agriculture have been

mapped for publication as an Agroclimatic Atlas.

In the light of the importance being paid to dry land farming at national level, studies have been commenced for soil moisture availability periods for the different phases of crops of varying growth rhythms and life durations.

During the current Fourth Plan, work is in progress for setting up 35 stations for accurately assessing moisture needs of important crops in each of the major soil climatic regions of the country for installation of pan evaporimeters in regions not covered by the existing network, and to study meteorological conditions favouring the multiplication and migration of desert locust, with a view to predicting their occurrence and to provide assistance in control operations.

Fifth Plan

During the Fifth Plan period, the Division proposes to undertake studies on the incidence, spread and control of pests and diseases in relation to weather. It would also intensify and expand the weather services for farmers. To that effect weekly quantitative crop yield and acreage outlooks will be issued and consultative exchanges between meteorologist and agronomist, both at State and regional level, will be arranged. This will help properly understand and interpret weather forecasts for issuing farming advisories to cultivators. The Division also proposes to undertake intense experiments on growth and behaviour of plan in controlled environmental chambers and in the field at selected centres. This will help in developing instrumentation for agrometeorological investigations and evolving agrometeorological models to assist irrigation scheduling, plant protection, crop rotations and land use planning. ☉

CASHEW KERNELS

ON

EXPORT STREAM

Well-known for its delicious taste, pleasing flavour and high nutritive value, the cashew kernels are one of the favourite snack items in sophisticated parties in developed countries. The cashews are consumed raw or fried, salted or sugared and are used as flavouring medium in the confectionery and baking industries.

During 1972-73 cashew kernels worth about Rs. 68.50 crores were exported, setting an all-time high record. Export of cashew kernels amounted to Rs. 61.78 crores in 1971-72, as compared to Rs. 52.06 crores in 1970-71.

Main Buyers of Cashew Kernels

The main buyers of the cashew kernels are the U.S.A., Canada, G.D.R., Australia, U.K., Japan, Hong Kong, Netherlands, Yugoslavia, Czechoslovakia, France, Poland, Hungary, Iran and Kuwait.

The Cashew Export Promotion Council takes various measures to increase sale of cashew kernels abroad. The measures include participation in international fairs and exhibitions, distribution of samples, sponsoring sales-cum-study teams and market surveys and arranging publicity abroad.

Production centres

Cashew is cultivated in Kerala, Mysore, Goa, Andhra Pradesh, Tamil Nadu, Maharashtra, Orissa and West Bengal.

Production of cashew-nuts went up from 1,58,000 tonnes in 1965-66 to 2,00,000 tonnes in 1970-71. The target for the Fourth Plan was fixed at around 2,36,000 tonnes.

The raw cashew-nuts are processed in the factories, which include roasting, shelling, peeling and grading. There are nearly 175 cashew-nut processing factories in the country, mostly concentrated in Kerala.

Indigenous production of raw cashew-nuts is not sufficient to meet the needs of the processing units and the demand abroad, and as such India imports of raw cashew-nuts from East African countries. The Cashew Corporation of India, which is the canalising agency for

import of cashew-nuts, is responsible for meeting the demand of the processing units.

Special Schemes

Various measures for increasing the production of cashewnuts were initiated during the Fourth Five-Year plan. This included production and distribution of cashew-air-layers. The Fourth Plan Programme was to distribute 2,75,000 air-layers at a subsidized rate of 50 per cent.

Introduction of better cultivation techniques included setting up of demonstration plots for the growers. The Fourth Plan aimed at laying out 1,500 demonstration plots for which farmers were to be provided Rs. 300 per plot of .8 hectares.

Plant Protection Measures

Besides these, prophylactic plant protection measures were also adopted. A target of an average of 40,000 hectares had been fixed for the Fourth Plan, for which a subsidy of Rs. 62.50 per hectare is provided.

A special scheme of area expansion of 5,000 hectares and package programme for another 5,000 hectares is being implemented on a pilot basis. A total outlay provided for the programme is Rs. 100 lakhs for the Fourth Plan. ☉

Spects for Glaucoma Patients

Statistics show that every fourth person over forty suffers from glaucoma. This disease is marked by an increase in intra-ocular tension accompanied by severe pain in darkness. Y. Petrov, an engineer from Moscow, has designed spectacles which make it possible for glaucoma patients to work in darkness. These spectacles look very much like ordinary ones, except that the arms are somewhat thicker. Inside them tiny batteries are placed. As soon as the patient puts the spectacles on, the ultra-miniature lamps mounted in the upper part of the frame are automatically switched on. The light from these lamps is directed into the patient's eyes. The intensity of light can be regulated and the patients are relieved of sufferings, while other people are not at all disturbed. ☉



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TUTICORIN THERMAL PROJECT

V. SAMBANDAN,
Publicity Officer,
Tamil Nadu Electricity Board.

The Tamil Nadu Electricity Board propose to establish a Thermal Power Station at Tuticorin, 600 K.M. south of Madras on the east coast. The first stage envisages installation of 2 Nos. 200 MW. units and the power station will be expanded upto 1,500 to 2,000 MW. later in stages.

The present electricity demand in Tamil Nadu is about 1,325 MW. which is expected to go up to 3,500 MW. in 1978-79. A number of power projects is proposed by the T.N.E.B. to meet this growing demand and the Tuticorin Thermal Power Station is one such project.

Why Tuticorin was chosen

Tuticorin was selected for the thermal project because it is easier to transport coal from Bengal by sea to Tuticorin where a port is under construction. As coal is available only in Bengal-Bihar area and as rail transport of coal is impossible due to shortage of wagons and inadequate rail facilities, coal has to be necessarily transported by sea. The policy of the Government of India in respect of future thermal plants is to locate such large thermal stations on the coast thereby avoiding inland transport of coal by rail. The southern part of Tamil Nadu has at present no large power station and the industrial development in this region is also picking up with establishment of S.P.I.C., Heavy Water Plant, Tuticorin Harbour Project, Expansion of Chemical Works, Cement Plants, etc. It has therefore become necessary that a large power station is built up in this area.

The Tuticorin Harbour Project is expected to be commissioned in 1974 and the main traffic through this harbour will be coal which will be of the order of 1.2 million tonnes per year for the 400 MW. installation. A separate coal berth will be provided in the harbour and coal will be unloaded from the ship and directly transported to the power station by conveyors.

Tuticorin is an ideal place for establishing a 1,000 MW. coal-fired thermal station as coal can be economically transported from Bengal by sea to Tuticorin and the T.N.E.B. are already planning in this direction. It is also proposed to use this station for the future

interconnection with the Ceylon Grid. 617

Economy of Sea Transport of Coal

The transport of coal by sea is at present a very costly process because only small capacity ships can enter Calcutta Harbour and because of manual handling. These boost up the cost of transport of coal by sea. The Haldia port coming near Calcutta is expected to receive up to 30,000 D.W.T. ships and the Tuticorin Port will also be able to receive similar capacity ships. Both the ports will be equipped with mechanised coal handling facilities to handle 1,000 to 2,000 tonnes per hour. With this the detention time of ships will be very much reduced and the cost of transport would come down to one third of the present figures.

In fact, with the superior quality of the coal of Bengal-Bihar and with the cost of sea transport of coal coming down, the cost of generation of electricity at the proposed Tuticorin Thermal Station is expected to be 7.25 paise/unit which is almost the same as the cost of electricity being generated at the Ennore Thermal Power Station which uses the inferior grade coal from Singareni Collieries.

Atomic vs. Coal Fired Station

A question will arise whether an Atomic Power Station cannot be had at Tuticorin instead of the coal fired thermal station. The Kalpakkam Atomic Power Station itself is expected to come up by 1977-78 and the next atomic power station (i.e. fourth in the chain) is to be established in U.P. The Atomic Energy Commission and the Government of India are of the view that the next atomic power station in the south will have to meet the requirement of power in the entire Southern Region and they are already examining various sites for locating the power station. It is not therefore correct to view whether an atomic station is to be had instead of coal-fired thermal station. Actually both will be required to meet the growing demand for power. As stated earlier, demand for power by 1978-79 will be 3,500 M.W. and the available generating

capacity will be lower than this and thus the second atomic power station will always be necessary.

Estimated Cost of the Plant

The estimated cost of first stage of Tuticorin Thermal Station is Rs. 73 crores and project is expected to offer a return of 12.1 per cent in the third year of operation. Power generated in this station will be stopped up and connected to the existing Grid. The project is awaiting the sanction of the Government of India and is expected to be cleared shortly.

Programme of Work

The preliminary works have already been started and the first 200 MW unit is expected to be commissioned in 1977-78 and the second in 1978-79. Further additions will be planned in suitable stages.

Planning Commission Approval

The Planning Commission has informed the Tamil Nadu Government that it will shortly give its clearance to the Tuticorin Thermal Power Project for inclusion in the Fifth Plan.

The Tamil Nadu Government has been asked to prepare the detailed engineering design of the 440 MW project to be put up at a cost of Rs. 75 crores.

Supply of coal by sea

The cost of coal to be supplied from Raniganj Coalfields by sea to the Tuticorin Project has been worked out at Rs. 105 per tonne as against the State Government's earlier estimate of Rs. 85. The cost of coal at Tuticorin Port will include railway freight from Raniganj Coalfields to Haldia Port, port charges at Haldia and Tuticorin and shipping freight. The Planning

Commission feels that the port charges at Haldia amounting to Rs. 15 per tonne was excessive and should be re-examined by the authorities concerned.

On the basis of the coal cost of Rs. 105 per tonne, the cost of power generation at the Tuticorin Project works out to 10 paise per unit but the State Government feels that even at this rate it would be cheaper than nuclear power. The subsidy on coal transportation is due to expire by the end of March 1974 and Tamil Nadu has agreed to abide by any new decision the Centre might take on subsidy.

10 Ships for Coal Transport

The Shipping Ministry has also informed the Planning Commission that it had already ordered 10 ships of 18,000 tonne capacity of which three will be received this year and they are meant for coal transport. The ships will be available to transport coal to Tuticorin when the project takes shape.

Railway Ministry Expects No Difficulty

The Railway Ministry does not expect any difficulty in effecting the movement of about 1.2 to 1.3 million tonnes of coal from Raniganj to Haldia Port to meet the initial requirements of the Tuticorin Project. The total requirement would be in the region of 6.5 million tonnes and the Railway Ministry is confident of handling this quantity. It has, however, told the Mines and Metals Ministry to inform it in advance of the mines from which coal will have to be loaded so that it could complete the necessary arrangements in time. The Mines and Metals Ministry has also advised the State Government that the boilers for the Tuticorin Project consisting of two 220 MW sets should be designed for Grade I and Grade II coal available from the Raniganj Coalfields.

Training for Poor Harijan Cultivators in Dry Farming

The Government have sanctioned a Pilot Scheme for imparting training in new agricultural techniques of dry farming to selected poor Harijan farmers owning between one and three acres of dry lands as the poor Harijans, who own small extents of dry lands, are not conversant with the modern techniques of dry farming.

The scheme called "Training scheme in Dry farming for Poor Harijan Cultivators" will be tried first in Tirunelveli district as an experimental measure and will be extended to other districts based on the experience gained in the functioning of the scheme. The scheme will be implemented at the Dry Farming Research Station at Koilpatti in Tirunelveli district.

40 Farmers to be trained

Under this scheme 40 farmers will be given training in four batches, each batch having ten farmers. The Officer-in-charge of Koilpatti Dry Farming Research Station will be the Training Officer, guiding the trainees in modern methods of dry farming.

The training will be for 6 days at Koilpatti. The trainees will be paid actual bus fare/train fare for their journeys from the places of their residence to the training centre and back. In addition, the trainees will be paid each Rs. 6 (Rupees six only) per day for food charges. The District Welfare Officer, Tirunelveli who is in-charge of implementing the scheme, will make arrangements for the boarding and lodging of the trainees during the period of their training.

AUTORICKSHAW CO-OPERATIVE

With a fleet strength of 180 autorickshaws, the Madras Autorickshaw Drivers' Co-operative Society is proud of its achievement of the main object of making the poor autorickshaw drivers the owners of the vehicle within a record period of 3 years.

The society was started when the poor autorickshaw drivers were at the mercy of unscrupulous fleet owners and money-lenders. They had no regular duties, and were at the beck and call of the autorickshaw owners. Further the very existence of autorickshaw drivers were at stake, as the previous Government adopted the policy of reducing the strength of autorickshaws in the city. It was at this juncture, the president of the Tamil Nadu Taxi and Auto Workers' Union Thiru A. V. P. Asaithambi represented to our present Chief Minister the need for helping the poor autorickshaw drivers through a Co-operative Society. The Chief Minister, who is a guardian of poor, immediately arranged for the registration of the society. The Chief Minister has also assured the promoters that the present Government will revise the policy of restricting the number of autorickshaws in the city and will gradually increase the strength of autorickshaws in the city. Thiru A. V. P. Asaithambi initiated the formation of the society. He was ably assisted by Thiru S. V. Nalliah and a band of selfless taxi drivers in Madras.

The society started functioning from 18th September 1969. Every year a bulk number of autorickshaws were secured through allotment from the Government and given to autorickshaw driver-members. The present fleet strength of the society is 180. Recently the society has received another allotment of 10 autorickshaws from the State Government and the vehicles are ready to be given to the 10 members by the Chief Minister.

The Society admits only autorickshaw drivers possessing current driving licence with public service badge as members. A member, who is desirous of getting an Autorickshaw, has to pay 1/8th of the

RUNS ITS OWN PETROL BUNKS

Bunk and supplies products at fair prices and at correct quantity. Out of the profits of the petrol bunks, two sets of uniforms were supplied based on the member's 'off-take'. For the past two years, the society has declared maximum dividend of 6 per cent on shares held by members and dhoties and sarrees to members and their wives from common good fund.

75 Autorickshaws were given to the members during the year 1970 and now there are owners of vehicles worth Rs. 10,000 because three years have lapsed and the members have become eligible for the ownership of the vehicle as they have cleared their dues for the purchase of autorickshaws. The society has thus made history by fulfilling the dreams of poor autorickshaw drivers into reality.

SHARE CAPITAL

The authorised share capital of the society is Rs. 5,00,000 made up of 10,000 shares of Rs. 50 each. There are at present 366 members with a paid-up share capital of Rs. 1,77,050.

ALLOTMENT OF AUTO-RICKSHAWS

Government have fixed the strength of autorickshaws to be run in the city of Madras. The limit was 200 at the time of formation of the society. It is only on the representation of the society to increase the strength of autorickshaws in the city to meet needs of middle and poor class public to have a cheap and quick conveyance, the Government have relaxed the limit every time. On all such occasions, the society has got permits nearly 40 per cent to 50 per cent of the total number of permits allowed for issue. It is thus the society has helped the poor drivers and the public in a great way.

The autorickshaws are not supplied to the society from the dealers quota. It takes nearly 3 to 5 years for the dealer to supply autorickshaws if orders are placed to him with necessary advance. Therefore, the society has embarked on getting quotas of allotment of autorickshaws from Centre and State Governments.

The set-up of the Tamil Nadu Films Division is the brain-child of the people-oriented Government in Tamil Nadu. It was started not only to fill up the vacuum created by the non-coverage of Tamil Nadu news in full by the Films Division of the Union Government, but also to keep the public abreast of the every day and latest development schemes executed by the Government in the interest of their welfare and well-being. The Tamil Nadu Films Division during its short span of five years existence, has not belied the hope and expectation of its sponsors. On the other hand, it has added one more feather to its cap by its efficient functioning.



CREDITABLE ACHIEVEMENT OF THE FILMS DIVISION OF TAMIL NADU GOVERN- MENT

The Films Division of Tamil Nadu Government has added one more feather to its cap in its 100th documentary within a short span of five years of its existence. Such spectacular and splendid achievement to its credit has been made possible by the earnest and efficient functioning of the department plus the constructive and contributing initiatives taken by the Government in its affairs.

Started in 1968 as a wing of the Department of Information and Publicity to fill up the vacuum created by the non-coverage of Tamil Nadu news in full by the Films Division of the Central Government, the Tamil Nadu Films Division has served its purpose well and proved beyond an iota of doubt its multi-purpose usefulness and utility to the society in more than one way.

After assuming the reigns of office in Tamil Nadu in 1967 under the able stewardship of Dr. Arignar Anna as Chief Minister, the new Government gave first priority to mass contact so as to keep the public abreast of the every day and latest development schemes executed by the Government in the interest of their welfare and well-being. Hence the set-up of the Films Division

in Tamil Nadu may rightly be called the brain-child of the people-oriented Government in Tamil Nadu.

To Enthrall the Public

The first documentary film of the Film Division was released on 4th May 1968 at the then Children Theatre (now it is renamed as Kalavanar Arangam) in Madras. Thiru C. A. Ramakrishnan, I.C.S., the then Chief Secretary of Tamil Nadu, in his welcome address, pointed out in lucid and unambiguous term the purpose for which the Films Division was started in this State. His speech runs:—"The Union Government have been releasing documentary films. But the Union Government's documentary films are not in a position to give

full and complete coverage of all the important goings and happenings in this State. So the State Government releases its own documentary films to put an end to that sorry state of affairs in such a way as to enthrall the minds of the people of this State".

Inaugurating the function of the release of the first documentary films of the Films Division of Tamil Nadu, Dr. V. R. Nedunchezhiyan, Minister for Education, in his speech said that "the Department of Information and Public Relations of Tamil Nadu Government has undertaken the responsibility to set up a Films Division and to take and release documentary films. Proper execution of its purpose by this department will ensure goodness to the public at large.

"In the documentary films of the Central Government the news and functions of Tamil Nadu are not even given half a minute's time. Of course it is not easy to give incomplete coverage of all the matters of importance and of news value all over this vast and big country. So the documentary films produced by the Films Division of Tamil Nadu on behalf of this Government will

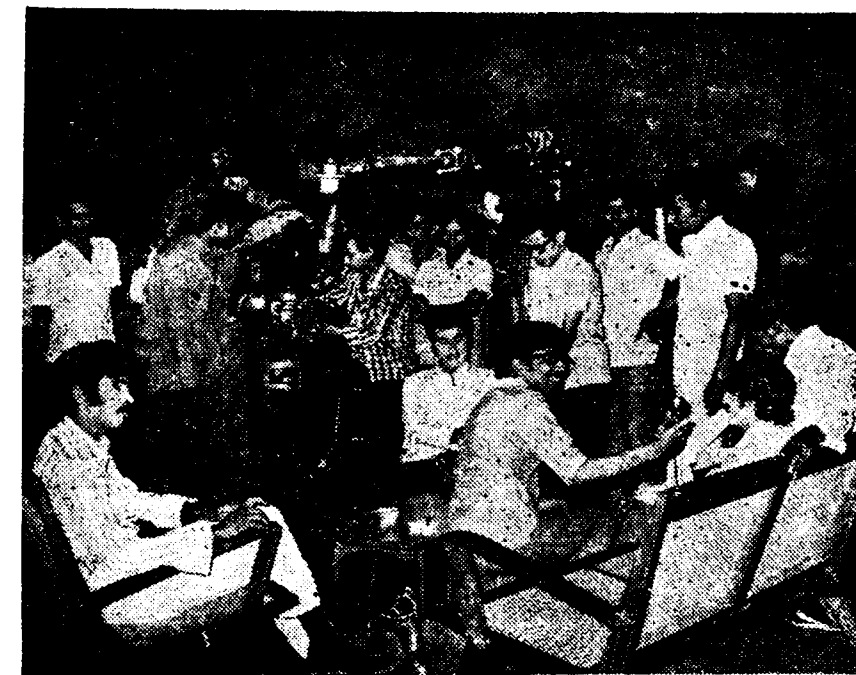
lead to beneficial result to the people of Tamil Nadu."

"Documentary films of the Films Division of the Department of Information and Public Relations will carry to the people all the achievements and statistics and planning schemes and the implemented schemes of this Government in good taste".

"Releasing the first documentary film of the Films Division, the then Public Works Minister, Kalaingar Karunanidhi said: "The Central Government's Films Division, in view of the vastness of its field for coverage, could not entertain all the matters of importance and interest to us in this State in its documentary films. To remove such grievances in our midst, our Films Division has come forward to release documentary films of its own making. Arrangements have been made to show its films in all the theatres in the State.

"The documentary films of the Films Division will be much useful to carry the good deeds of the Government to the people and to obtain, in turn, the backing of the masses to the Government".

The Film Division, in its short span of service to the society, has not belied the hopes entertained by the ministers at the inaugural function of the release of its first documentary films. It works in a target-oriented way. Accordingly, it releases two documentary films every month and it has hitherto brought



to light 100 documentary and feature films under its auspices. It is not an achievement of mean degree and dimension to any institution of its kind.

Its documentary films include "The Funeral Procession of Anna", "Anna Lives", etc. The documentary film "Anna and After" taken by this Division in English was received well, wherever it was screened. Some documentary films of the Films Division depicting the activities and achievements of the State Government have also been given good reception by the

mass of Tamil population. It stands to its credit that the documentary film on Poompuhar brings out the ancient Tamil culture in all its splendour and glory.

Apart from these documentary films, the Films Division has also embarked upon picturising some important subjects and institutions in this part of the country. The documentary film on the Madras Museum under the title "Don't the stone speak in symphony?" is a pointer to prove the creditworthiness of the Films Division. "On the Deep Sea", "Helping Hand", "Fertiliser alone is Food"



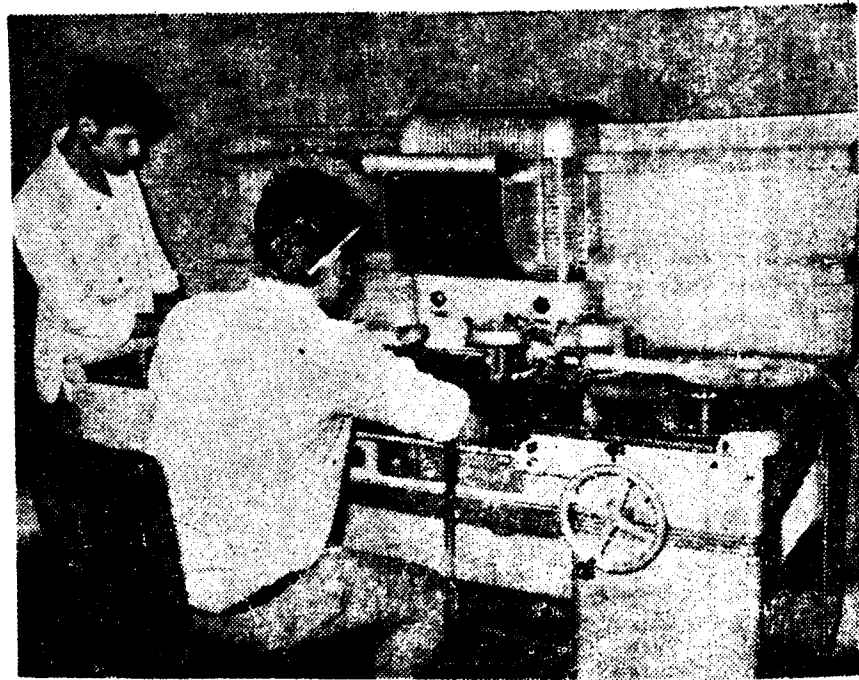
Cine Camera in action.

Film Editing.

etc., are some of the documentary films that go to prove the pivotal role played by the Films Division in taking the modern scientific knowledge and technical know-how to the door-steps of the people helping a lot in revolutionising methods of cultivation. The documentary film "Our Duty" of the Films Division brings to light the importance of the Small Saving Scheme thereby giving a fillip to the popularisation of the schemes among the illiterate rural folk as well.

"After Having Got Blindness", "The Dark Home", "Heart is a Monkey", "Cotton Cultivation", "Industrial Development", etc., are some of the documentary films of the Films Division under production.

Popular film stars have also come forward to act in the films of the Film Division and they are also encouraged and afforded chances in good measure. The documentary and feature films of the Films Division are screened in every nook and corner of the State in rural areas as well as urban areas, and in industrial centres and the predominantly agricultural areas, etc.



It is a healthy sign in the administration of the Films Division that the revenue derived from the screening of the films of the Films Division is on the upward trend as years roll by. And every one in Tamil Nadu feels proud of the fact

that as in many other fields, in this line also Tamil Nadu marches ahead of many other States in the Indian Union, bringing laurels to the effective and efficient functioning of the administrative set-up in this State. R.N.

the
living
past

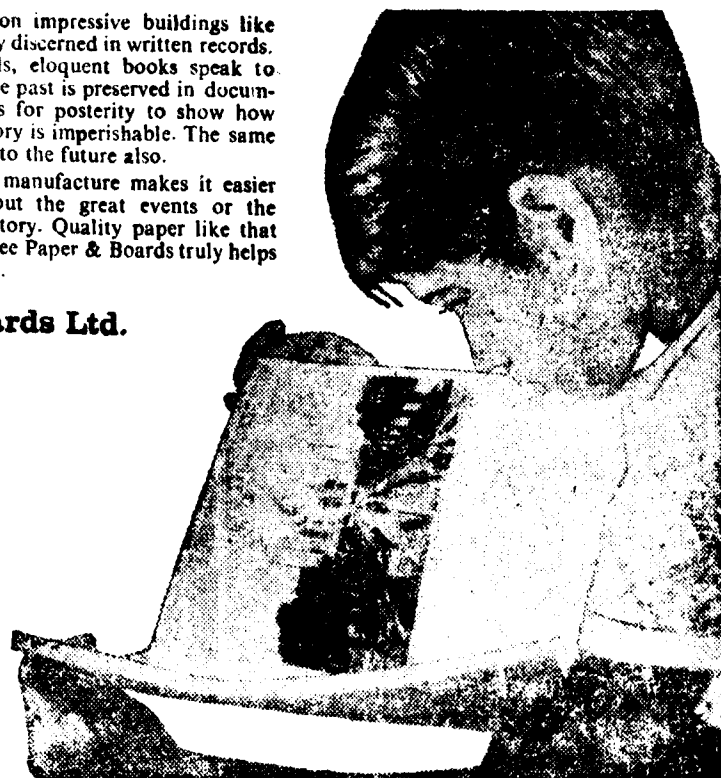
The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

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CONTRIBUTION OF THE TAMIL NADU AGRO-INDUSTRIES

CORPORATION IN THE BLUE REVO- LUTION

Our effort to attain self-sufficiency in food and to substantially improve the nutritional standards of our people, of fundamental importance to us, is that a mere increase in the output of cereals through "Green Revolution", high yielding varieties of fertilisers are just not enough. Qualitative improvement through basic change in food habits, taste and attitudes of people is more important. It is in this context that fishing industry, agro-industries, poultry, cattle, piggyery, increased production, preservation and optimum consumption of fish, vegetables, etc., have, to be considered. Though fishing and allied industries are not unfamiliar to India, we have yet to go a long way in organising them scientifically so that the industries would play their role in improving nutritional standards and as valuable source of foreign exchange.

The Government of India and the State Governments recognised the role of agro-based industries as a vital sector to improve the qualitative side of our diet and a massive development of agro-based industries was envisaged in setting up Agro-Industries Corporations in all the States of India, to form the nucleus for a nationwide effort to augment the output of more and better cattle, poultry, pigs, fish and similar items. This effort is expected to form an essential part of the employment schemes of the Government to vastly increase production of basic necessities of life, their careful conservation and efficient distribution.

The Tamil Nadu Agro-Industries Corporation Limited was incorporated on 5th July 1966. The main objects of the company are—

(i) To promote, establish, administer, own and run industries for manufacturing articles which will help the growth and modernisation of agriculture, animal husbandry, pisciculture and poultry farming;

(ii) To promote, establish, administer, own and run industries and facilities for processing agricultural produce and products of

piscicultural and animal origin for the purpose of increasing the availability of goods and subsidiary food in the country and for export;

(iii) To take over from the Government of Tamil Nadu the industrial units and facilities falling within the ambit of clauses (i) and (ii) above with their rights and liabilities in so far as they relate to such units and facilities and

(iv) To promote the rapid development of the industries of the category mentioned in clauses (i) and (ii) above in the State of Tamil Nadu and for that purpose to operate suitable schemes including the financing of any such industry or facility whether owned by the State Government or Central Government or by any individual, firm, company or association—by way of underwriting the issue of shares, participating in the share capital, grant of loans and offering guarantees.

The authorised share capital of the Tamil Nadu Agro-Industries Corporation Limited is Rs. 4 crores, out of which Rs. 330 lakhs has been subscribed by the State and Central Governments in equal parts. The Board of Directors consists of one non-official Chairman, three non-officials nominated by the State Government, four officers of the Government of Tamil Nadu and three officers of the Central Government. The Corporation is under the administrative control of a Managing Director from the Indian Administrative Service. The Tamil Nadu Agro-Industries Corporation was concerned in the beginning only with agricultural schemes. But towards the end of 1971, fisheries schemes were also proposed to be operated with the appointment of one Project Officer (Fisheries) by taking an officer from the State Department of Fisheries on deputation. Recently, the Corporation has decided to form an autonomous separate unit for "fisheries" as a wing of the Corporation.

The Fisheries Wing of the Tamil Nadu Agro-Industries Corporation

B. KRISHNAMURTHY,
Project Officer (Fisheries).

TAMIL NADU AGRO-INDUSTRIES
CORPORATION LIMITED, MADRAS-32.

has proposed to take up a few schemes on fisheries, detailed below :—

(a) Freezer storage complex in Madras.

This complex will consist of a 100-tonnes freezer store, a 15-tonnes chilled fish store, a 3-tonnes tunnel freezer and a 12-tonnes plate freezer. The Tamil Nadu Agro Industries Corporation has also agreed to put up in the same building a 30 tonnes ice plant with a 50-tonnes ice storage of the State Department of Fisheries. The frozen fish store will consist of 5 cubicles of which two are to maintain—15° to 20° F and three will maintain—5° to 10° F. The tunnel freezer will maintain—40° F and the intake per load is proposed to be 400 Kgs. The chilled fish store is proposed to be maintained at 25° to 28° F. Two plate freezers of 6 tonnes each are proposed to be installed in the building. Sufficient space in the building for receiving and handling fish and for processing has been planned. This important infrastructure for deep sea fishing operations is proposed to be erected in Royapuram in the fishing harbour site. The facilities are proposed to be made available to the public at rental charges. As soon as the site is handed over to the TAI Corporation by the Government, work on this project can be started and completed within 8 months.

(b) Deep sea fishing

The major project will be with 8 deep sea fishing vessels to be operated from three bases—Madras, Tuticorin and Mandapam. Four vessels are proposed to be imported of which two will be in the 23—25 metres and two in the 30—35 metre length classes. The balance four vessels will be built in India. All the vessels will be of the stern trawling type and for combination fishing. One of the imported vessels is proposed to be rigged for operating purse-seine nets. Although the project is export-oriented, it is proposed to take up internal marketing in the country also to make available nutritive fish food under hygienic conditions and at reasonable rates to the people in the hinterland and in Madras City.

(c) Nylon twine twisting and fishnet making factory

The TAI Corporation has decided to put up a factory in Madras for

twisting nylon filament into twine and braiding the twine into net webbings for fishing nets. The net making machines will be suitable for single or double knots and for braiding monofilament twines also into webbings. The factory will be capable of handling about 48 tonnes of nylon yarn per year. It is proposed to produce about 18-tonnes of webbings per year. The import licence for the machinery is awaited from the Government of India.

(d) Trawl Winches for fishing boats.

The fishing boats require mechanical trawl winches for the smaller vessels and hydraulic winches for the medium and larger boats. A few companies are at present manufacturing winches for the smaller boats, but hydraulic trawl winches for fishing are not generally made in the country. The TAI Corporation has proposed to take up manufacture of mechanical trawl winches to begin with and gradually start manufacturing hydraulic trawl winches. The design of the C.I.F.T., for these winches will be generally adopted and it is proposed to implement the project in technical collaboration with the C. I. F. T., Ernakulam. The terms of collaboration are not yet finalised.

A Project for Liquid Nitrogen.

The above projects have been approved to be implemented by the TAI Corporation. Apart from these, the Corporation is having under consideration the effective role that it can play in the regulated marketing of fish for internal consumption. There are many other ancillary fields like manufacture of fishing hooks, fabrication of ready made nets like trawl nets, purse, seines, etc., fabrication of rudder assemblies for mechanised boats anchors, manufacture of fishing boats, insulated boxes for fish transport, plate freezers, life saving appliance, navigational lights, magnetic compasses, echo sounders, etc., which if operated by a single organisation will facilitate the fishermen and boat and ship builders to procure more easily and thereby speed up the construction work or fishing efforts. The TAI Corporation may consider taking up these items of manufacture also gradually. The TAI Corporation is also having under consideration a project for

using Liquid Nitrogen in freezing prawns and fish fillets and for I.Q.F. Products.

High percentage of Risk.

No other industry depends so much on nature as does the fishing industry. The element of risk involved is high in this industry especially in deep sea fishing. The data on the availability of fish in deeper waters are practically nil. It will be futile for the industry to wait for Government to collect the data and furnish to them. In their own interest, the private entrepreneurs have to do some survey work also along with their commercial fishing. Financing institutions and commercial Banks have to appreciate this aspect and give encouragement to the industry to stabilise itself. The Tamil Nadu Agro Industries Corporation has for its part come forward to play its role in the ringing in of the "BLUE REVOLUTION" in Tamil Nadu by taking up commercial fishing, manufacture of fishing requisites and providing the infrastructure for the processing and marketing of marine products.

Acupuncture with Laser Rays!

Acupuncture, one of the oldest medical treatments, has been given a new slant by modern technology. Soviet doctors have proposed that steel needles be replaced by a light needle, the laser ray, which guarantees painlessness and absolute sterility. [The new method is already practiced in the treatment of a number of diseases. The initial results are quite encouraging. There is reason to believe that quite soon another revolution will be wrought in the technique of acupuncture, which has progressed over the millennia from stone needles to the laser ray.]

Reclamation of

BUCKINGHAM CANAL WORKS TAKEN UP

After the reclamation and revival of the river Cooum to its original beauty and elegance, now much attention is being paid to the improvement work of Buckingham canal. Though various kinds of improvement works in Buckingham canal has already been in operation for the last two years, the Public Works Department's Cooum Improvement Canal Division—now renamed as Buckingham Canal Division has undertaken the works of major improvements to the canal such as deepening the canal by five feet to facilitate plying of mechanised boats and connecting the canal with the Cooum at the Cooum lock near Madras Central Jail to rid the canal of its stink.

History reveals that waterways promoted more trade and commerce as movement of men and materials were made at comparatively cheaper cost by this mode of transport. The modern development of rail and road transport has considerably affected the importance of inland waterways. Mostly for movement of cargo, waterways are used now. Inland waterways have their own attractions as a transport moving in natural surroundings with scope for enjoying and appreciating landscape on either side. The time factor in modern days favours fast moving system of transport but still for pleasure trips and sight seeing inland waterways can be primarily important. The two waterways worth mention in Madras City are :

1. Cooum river
2. Buckingham canal

The Cooum river traverses through 41 miles from Sattarai village to the sea (including the distance of 6½ miles within the

Madras City); its width within Madras City ranges from 75' to 100'. Its catchment area is 111.6 square miles; the average rainfall in the basin is 41" per year. The maximum flood discharge by the river is 19,111 cusecs. It floods during the north-east monsoon period. In other seasons, water stagnates in the river. The river within the City limits has been improved for navigation, especially pleasure boating at two stages costing Rs. 32 lakhs and Rs. 62 lakhs respectively.

The Buckingham canal is a navigable canal running through the backwaters and parallel to the coromandel coast at an average distance of less than a mile from the sea. It extends to a length of 262 miles from Pedda Ganjam in Krishna district in Andhra Pradesh to Mercanam in South Arcot district in Tamil Nadu. About 100 miles of the canal traverses in Tamil Nadu. Within the city of Madras, its length is 12 miles. The canal is used only for movement of cargo such as firewood, salt, lime and shell, which find chief market in Madras City. Country boats of capacity 5 to 30 tonnes ply in the canal. Several committees were appointed to examine the technical feasibility and financial implication of developing the Buckingham canal so as to augment cheap transportation facilities in the city. The Bhagavathi Committee constituted by Government of India, has recommended an outlay of Rs. 20 lakhs for dredging the canal. The Madras Metropolitan Plan has suggested a mass transportation system being taken alongside of the canal alignment to solve the rapidly growing transport problem within the city and the feasibility of this proposal is being examined by the Railways now by the recently set up special

Metropolitan Cell in Madras. The width of the canal ranges from 90' to 120' and hence it is possible to take suburban rail or an express way within the canal width leaving adequate waterway by deepening and paving the canal to serve as waterway. The one great advantage in this alignment of mass transit system is savings in cost of land and avoiding the delays in acquisition process.

WORK ON CANAL.

The first phase of the work on the Buckingham canal is almost complete on the Tamil Nadu side and that on the Andhra side is expected to be over by the middle of next year.

Traffic can be operated up to Kakinada port through the Krishna-Godavari canals, and in the southern portion of the canal, lying between Madras and Marakanam (in Pondicherry) backwaters country boats can be run for a distance of about 64 miles.

The Tamil Nadu Government has provided a sum of Rs. 50 lakhs this year for the second phase of the scheme. The silt-clearing and dredging operations are almost over. Thanks to Central assistance, there is no paucity of funds as felt during the first phase of the scheme. Dredging by manual labour has resulted in a saving of nearly 50 per cent.

The study group expects to submit its report to the Ministry of Transport by the end of this year. It will also study the possibilities of introducing tugs and other mechanised boats in the canal after widening it and this work will be taken up during the Fifth Plan period.

The group consists of besides Mr. Banerjee, Thiru Sat Prakash, Joint Director, Planning Commission, Thiru J. Raja Rao, Superintending Engineer, P.W.D., Andhra and Thiru N. Balasubramanian, Deputy Chief Engineer, Irrigation, P.W.D., Tamil Nadu. A naval architect is also assisting the group in design and type of craft with its horse-power, etc., which could be used after carrying out the improvements suggested by the group.

GRAND SCHEME OF RECLAMATION

With the grand scheme of reclamation at a total cost of Rs. 2.28 crores, the Cooum has lost much of its stench and has become the Thams of Madras City adding to its beauty and elegance. But its sister counterpart—the Buckingham Canal which flows for a total distance of more than 100 miles wending through Tamil Nadu and Andhra Pradesh thereby providing a commercial inland navigable route with ease and effectiveness for country boats which carry salt, lime, shell and firewood to the city from far-off places on its way had been left high and dry in the matter of reclamation and revival to its original status and beauty.

While inaugurating the Pleasure-boating in the Cooum on 4th February 1973, Dr. M. Karunanidhi, Chief Minister of Tamil Nadu spoke thus :

“Of course, we have completed the Cooum reclamation work. But there is another waterway in the city which mars the beauty of the city posing a health hazard in the city. The name of that waterway is Buckingham Canal. The Government is thinking of cleaning that also.” As if to prove that he is not only a man of mere words but a man of deeds of public interest, he, as the Finance Minister, allotted a nominal fund for the work in the budget for 1973-74 to convert the canal into an inland navigation channel.

The reclamation work of the Buckingham Canal within the city has already been taken up for execution. Under this Scheme, sanctioned at a cost of Rs. 44 lakhs, formation of roads at wood wharf and shell wharf on the North Buckingham Canal margin, construction of wharf at Chintadripet in the heart of Madras City and

lining the canal in certain reaches were done. Further, excavators for dredging the Buckingham Canal and one sand pump for use at the mouth of the Cooum for Cooum Improvements Scheme were also purchased and installed. In addition to these, proposals for dredging the Buckingham Canal in Tamil Nadu limits, with a view to improve the draft conditions at a cost of Rs. 20 lakhs was sanctioned during 1971-72 under Central Government loan assistance and the works are now in near-completion stages. Apart from these, the State Government is sparing nothing at its disposal to get this scheme included in the ensuing Fifth Five-Year Plan for which the State Government's proposal is lying with the Union Government for necessary approval.

DOUBLE PURPOSE SERVED

The State Government has become alive and alert to the need of improvement in the Buckingham Canal System in view of its potentiality in the inland water navigable facilities in addition to doing away with the health hazard problem of menacing proportion as far as Madras City is concerned, and has sanctioned the scheme and plunged into action. Further the study by a committee headed by Thiru Vaz, the then Irrigation Chief Engineer, recommended the worthiness of the scheme in favourable terms. Before that, the project had been under study for some years by both the Andhra Pradesh and the Tamil Nadu Governments and the Planning Commission and the Irrigation Transport Directorate. Accordingly, the Andhra Pradesh Government has also taken up the work simultaneously. But the nature of work to be carried out is not so simple as one would tend to think of it. There is full of hurdles and obstacles of various kind and varying degree and dimension in its execution.

First of all, to carry out the work, co-ordination of the railways is to be sought as many bridges such as bridges at Basin Bridge, Korukupet, Park Station, Elephant Gate, Tiruvottiyur, Marshalling Yard and on the Arkoram Line, span the canal. Without the co-operation and co-ordination of the railway department concerned, the work cannot have a smooth and quick sailing.

Tenders for the excavation and lining works of the 10-mile route with

concrete slabs have been called for, for which the Tamil Nadu Government has provided Rs. 5 lakhs in its last budget for 1973-74 expecting a grant from the Union Transport Ministry. The Union Government is expected to provide 50 per cent subsidy for the project.

Work on the northern 34-mile section of the canal has already been taken up on hand by the State Government in view of its traffic potentiality and now it yields an annual revenue of Rs. 1 to 2 lakhs by way of licence fees on boats and rent from 17 godowns built on the banks of the canal. The first stage of the work is expected to be completed by the end of next year. The State Government is expected to sanction soon a revised project costing Rs. 65 lakhs in this connection.

Further the State Government is also keen to take up on hand for execution the work on the 64-mile southern section stretching up to Markanam without further delay.

In this connection cross-bunds have already been put up behind the University and at the Pycrafts Road points for dewatering and lining. The proposal is to cover the stretch up to Raja Annamalaipuram and later up to Tiruvannamiyur and Lattice Bridge.

The second hurdle in the execution of the scheme is that there are more than 5,000 huts on the banks of the canal and that sewage is let into the canal at a number of points. The City Corporation has been requested to stop this. The State Government is in expectation of financial assistance in right quantum from the Centre to carry out improvements to the southern section of the canal.

A Rs. 6-crore plan to make the canal navigable throughout its length is before the Centre pending approval.

After improvements to the canal, the Tamil Nadu Government proposes to introduce mechanical boats and tugs that can have a train of boats in the place of country boats now plying. Further the completion of work is expected to facilitate the work to connect the proposed transport of kerosene and other oil products from the Manali Refinery and fertilisers from Madras Fertilisers to the city by boats. ☉

WHY A BALANCED DIET? ⁶²¹

Who doesn't know that good and proper diet is a key to good health? We take food not just to make life possible but to live a healthy life. The question would then be—What is good diet? To understand this fully, it will be necessary first to know why food is needed for the body.

Some energy is spent when we do work, and even in sleep some energy is being spent by the body. The energy that is being expended should be made good, and this is done by the food we take. The size of our body is very small at birth and it grows daily till about the age of 21 years, and attains the adult size. This growth of the body is made possible only by the food we take. During the growth as well as after the growth has ceased, many processes go on in the body, and certain nutrients we take from food are essential for these processes to proceed normally. Moreover, we live in an atmosphere full of all types of microbes, and we should have sufficient stamina to withstand the onslaught of these micro-organisms. Food gives us this stamina.

Food contains many nutrients, and it is in fact for the sake of these nutrients which are needed to make the body grow and keep it in a healthy condition that we take food. All foodstuffs contain more or less all the nutrients, but in varying proportions. Some foods give more energy. For example, cereal grains like rice and wheat, tuber vegetables like potato, oilseeds, sugar and jaggery are some of the foods which yield essentially energy. To ensure proper growth of the body we need foods like pulses, milk, curds, flesh foods, fish, eggs, oilseeds, fruits and various types of vegetables. For formation of good bones we need foods like milk and curds, and for the muscles to develop properly, we need foods like pulses, flesh foods and other foods of animal origin. Leafy vegetables are needed for keeping the eyes, the gums, bones and blood in healthy condition.

The requirements of the body for the various nutrients depends on the age, physical work and other physiological conditions. Because of

the larger size of the body, an adult requires more nutrients than does a small child. The growing child, however, requires, per kilogram body weight, more protein and minerals than an adult does because of the rapid growth that takes place during childhood. A labourer doing heavy work requires more of the energy-giving foods than does a person doing office work sitting in a chair. Because of the physiological changes that take place in the body, pregnant and lactating women require body building nutrients like proteins and minerals. A good diet is one which yields daily the nutrients in the proper amounts and proportions to satisfy the needs of the body under the various conditions, and it is also called “Balanced diet”.

A typical balanced diet required by an adult male doing a sedentary type of work (light work) is given below :—

	GRMS.
Cereal grains	400
Pulses	70
Leafy vegetables	100
Tuber vegetables	75
Other vegetables	75
Fruits	30
Milk	200
Fats and oils	35
Sugar/Jaggery	30

It is to be noted that the diet suggested above is for a vegetarian. Non-vegetarians can reduce the amounts of milk and take 30 gms. each of flesh foods and eggs. If the person is doing heavy work, some of the ingredients like cereals, fats and sugar foods should be increased to obtain more calories from the diet.

All the foodstuffs, listed above, as ingredients in the balanced diets are being consumed by people, but they are not being taken in the required amounts and proportions, and this may lead to deficiency diseases. Cereal grains constitute the

bulk of the diet for a majority of people, and the other protective foods like milk, eggs and leafy vegetables are not consumed in the amounts needed. One of the reasons for this is the economic status, but even within the existing economic status, there are possibilities of improving the nutritional qualities of the diet with slight changes in the dietary habits and cooking practices.

‘Toned milk’ is cheaper than fresh milk and except for the somewhat lower content of fat, toned milk is as nutritious as fresh milk. Skimmed milk, i.e., milk from which fat is removed, is being distributed by the Government in schools to school children. Advantage should be taken of this facility by every boy and girl to improve their nutritional status. If milk is in short supply, priority should be given in distributing the milk to children and pregnant and lactating women, and normal adults should take only what remains.

Although not pleasing to the eye, hand-pounded rice and parboiled rice provide essential nutrients to the body. Likewise preparations from whole wheat flour would be more nutritious than those made from refined flour (Maida). Instead of consuming one type of cereal as the staple food, it is better to use a mixture of two or three cereals in the diet.

Leafy vegetables are inexpensive; they provide many nutrients to us. The vitamin C, which is obtained from fruits, can be obtained in the same amounts from leafy vegetables. When whole pulses are used, it is good to use some of them after germination.

By preventing cooking losses also we can considerably improve the nutritional quality of our diets. By following scientific principles in cooking and in planning the diet, one can consume a balanced diet and ensure a healthy life physically and mentally.

*National Institute of Nutrition,
Hyderabad.)*

ELECTRIC TRACTION FOR HIGH SPEED AND COMFORT

With the progressive industrialisation of different regions, and with the increase in the tempo of life everywhere, there is a demand for faster movement of freight and passenger traffic. Electrification of Railways' major trunk routes is the answer to higher speed and higher level of comforts.

Electric traction requires a higher initial outlay compared to steam and diesel traction but its working expenses are very low.

To reduce the consumption of comparatively scarce sources of energy like coal and crude oil, the Railways have already brought more than 4,000 route kilometres under electric traction. Electric energy used for electric traction is less than 3 per cent of the generation of power in the country for industrial, agricultural and other purposes.

Electric traction is based on electrical energy which is produced from inferior crude coals available more abundantly in the country than petroleum products.

The traffic needs on trunk routes, heavy mineral lines and suburban sections have grown beyond the capacity of steam traction, which has been proved comparatively uneconomical. The alternate of electric traction is modern, efficient and economical. It is superior to steam traction on technical, operational and financial grounds.

As convertor of available heat energy into power for hauling traffic, the steam locomotive is very inefficient. It is also much less powerful than an electric locomotive. This factor is important when heavier trailing loads have to be hauled at faster average speeds to take the maximum advantages of track capacity.

The electric locomotive can also start much heavier loads and haul them at a much higher speed on severely graded sections, thus making this form of traction more attractive, both operationally as well as financially.

Electric traction on Indian Railways was introduced on the Central, Western and Southern Railways between 1925 and 1930. Subsequently, electrification work was undertaken in 1954 on the Eastern Railway on Howrah-Burdwan and Sheoraphuli-Tarakeswar sections. This was completed in December 1958.

It was decided in 1957 to adopt 25 KV AC single phase system as a standard on the Indian Railways because it is economical.

The busy trunk routes connecting the metropolitan cities of Calcutta, Delhi, Bombay and Madras carry 50 per cent traffic although they form only about 14 per cent of the total route kilometrage of the Indian Railways. Railway modernisation has, therefore, been correctly carried out on the most congested routes so as to achieve maximum benefit with minimum expenditure.

Between Delhi and Howrah (Calcutta) a stretch of only 205 kilometres between Tundla and Delhi remains to be electrified. On completion of this project, the direct trunk route of 1,441 kilometres between Delhi and Howrah will be completely electrified.

Of the 1968 rkms. between Bombay and Howrah via Nagpur, 1,303 rkms. have been brought under electric traction. The Virar-Sabarmati section of 441 kilometres on the Bombay-Ahmedabad route is being electrified.

Work on the Madras-Vijayawada section of Delhi-Madras trunk route is in progress.

In this way all the trunk routes connecting Delhi, Madras, Bombay and Howrah would be progressively brought under electric traction to keep the Railways abreast with industrial and economic progress of the country.

By 1976-77, an additional 1,700 route kilometres are expected to be brought under electric traction at a cost of Rs. 113 crores.

The sections to be covered are Virar-Sabarmati (Western Railway), Panskura-Haldia (South-Eastern Railway), Waltair-Kirandul (South-Central Railway), Tundla-Delhi (Northern Railway), Madras-Vijayawada (Southern and South-Central Railway) and Madras-Tiruvallur (Southern Railway).

The 69 rkms. Panskura-Haldia project is expected to be completed by the end of the current year. The Ahmedabad-Baroda section of the Virar-Sabarmati project has already been energised. In case of 471 rkms. Waltair-Kirandul and 259 rkms. Tundla-Delhi sections, foot-by-foot surveys have been completed and preliminary works are in progress. Both these sections are expected to be electrified during 1975-76.

The Madras-Vijayawada project was approved for inclusion in 1971-72 Works Programme on out-of-turn basis, and is expected to be completed during 1976-77.

During the Fifth Plan period, another 2,880 rkms. of railway line are likely to be taken up for electrification on Bhusaval-Nagpur, Durg-Nagpur, Delhi-Itarsi, Madras-Guntakal-Hospet, Arkonam-Bangalore and Erode and Baroda-Nagda and Godhra-Anand sections. The surveys for Bhusaval-Nagpur and Durg-Nagpur sections have been completed.

All this would require more power. Keeping in view the present power shortage in the country and its repercussions on the rail movement, the Railway authorities are seriously considering a proposal for setting up Railways' own power houses in the Eastern region.

A high power Technical Committee has recommended that such power houses should be linked with the State Electricity Boards. This step would, on the one hand, provide necessary power for the expanding electrification programme and, on the other, ensure continued and reliable power supply for uninterrupted running of trains.

VACCINE AGAINST INFLUENZA

E. GORBUNOVA.

Workers of the Institute of Viral Preparation of the Ministry of Health of the USSR have developed a new vaccine against influenza which proved effective during the epidemic last winter. The vaccine reduces the incidence by half and the risk of dangerous complications to a third. The vaccine has already been acknowledged as new in principle by researchers in Yugoslavia, England, U.S.A., France, Bulgaria, G.D.R., Rumania, Greece, Japan and other countries.

The idea of seeking protection from influenza in vaccination was conceived four decades ago, when the virus causing the disease was finally "nailed down". Since then dozens of vaccines have been developed and tried, the number of septicemias increasing in proportion to the attempts to subdue influenza by vaccination.

'Flue' vaccines have little effect —such, essentially, is the view held by the majority of doctors, and they advance some weighty arguments to support their position, such as vaccination protects only a certain proportion of the people who have undergone it, the vaccines themselves cause the 'flue' in a mild form in approximately two persons out of a hundred, and this, in global terms, means thousands of cases of vaccine-provoked influenza.

Naturally, supporters of vaccination advance their own arguments: vaccines can protect every second person, while according to economists, a 10 per cent reduction of incidence already justifies all the expenses entailed by research, and organisational measures involved in fighting this mass infection which annually hits millions of the earth's population.

But why are influenza vaccines less effective and reliable than those used against smallpox, polio-myelitis and many other grave diseases? There are several reasons and the main one is that the influenza virus is highly mutable and appears in a new guise in every new epidemic.

To produce a vaccine, the scientists must isolate the pathogen of the new epidemic and then "tame" it, so

that it should be able to deceive the organism, as it were, causing it to muster its defences, but without actually provoking the disease. Such a weakened virus stimulates the formation of special substances, antibodies, in the organism, which make ready to attack and destroy the real "wild" virus.

The process of "taming" is lengthy and complex, and so scientists used simply to kill the virus and make prophylactic preparations out of it. Soviet researchers preferred to obtain vaccines from live viruses. These were introduced into a chicken embryo, then transferred to another egg, a second, a third and so on. Fifteen, twenty and sometimes thirty changes were needed to deprive the virus of its pathogenicity. The "candidate" for a vaccine was tried out on volunteers (most often workers of the laboratory themselves) and then on a limited group of the population. By the time the vaccine was ready for mass use it often happened that another strain of the virus and not the one against which the vaccine was effective was running amok all over the globe.

How were they to keep up with the virus's metamorphoses? A team of researchers at the Moscow Institute of Viral Preparations headed by the Doctor of Medical Sciences A. Alexeyeva proposed a new method of cultivating the virus—not in a chicken embryo but in a tissue culture medium, in special flasks. The scientists place kidney cells of chicken embryos in this culture medium, infect them with the virus and, once it has multiplied, transfer it to another flask with the same culture medium and chicken cells. Another few transfers, and the virus loses its aggressive properties, and after a few more the scientists have at their disposal a so-called stable strain, a viral variant suitable for making a vaccine.

In point of fact this "tamed virus" is vaccine. To start mass production, it is only necessary to "accumulate" large quantities of the virus. The new method makes it possible to grow thousands of millions of viral particles on four chicken embryos and turn them into vaccine—all within one day.

In tissue culture medium, the virus is "tamed" much more quickly. Two and a half to three months is enough to obtain a vaccine strain. It means that having isolated the new pathogenic strain of the incipient epidemic (this is usually done in summer) the scientists have enough time to prepare for the dangerous winter season.

The new method not only saves time. It has been established that the pathogen grown in tissue culture medium is milder in character than the one cultivated in the chicken embryo. So, the new tissue vaccine causes no side-effects and never provokes the disease it is supposed to protect man against.

The effect of vaccination largely depends on its scope. Formerly vaccination was counterindicative to the most vulnerable section of the population, the children. As for tissue vaccine, it is harmless even for one-year-olds.

The vaccine is produced in the powder form. In special drum-shaped chambers the culture medium, where the viruses multiplied, is dehydrated and turned into a powder. It can be preserved for a year without losing its properties. Before use the powder is dissolved in ordinary water. The vaccine is administered orally which is another distinctive feature. Formerly vaccination was performed either subcutaneously or by inhalation through the nose, which made control over the quantity administered quite difficult. This vaccine is swallowed, and one teaspoonful of the reddish nice-tasting solution is enough to produce immunity in man.

The tissue vaccine can also be used for the treatment of influenza. It causes the organism to produce interferon, a protein which represses multiplication of the virus. This probably accounts for the vaccine's effect of preventing complications, first and foremost the development of pneumonias, which become a grave danger during influenza epidemics and take a toll of many hundreds of human lives.

("Soviet Union" 6/73.)

NATIVE DOCTOR TURNED INTO SUGARCANE FARMER

Doctor Arjunan is one of the native doctors specialised in orthopaedics in the Telungupalayam of Coimbatore District, who made a mark in the field of sugarcane cultivation.

In 1964, all farmers were afraid to take up sugarcane cultivation. Even those who cultivated had resorted to burn the crop. It was because they were unable to get back the invested money by way of marketing the sugarcane or the finished product jaggery. The price was very low. It was Rs. 17 to 27 per four bags of jaggery.

Undaunted by trend of the price, Dr. Arjunan raised sugarcane in his five acres wet land. He took every care to cultivate the crops as per the guidance of sugarcane cultivation specialists. The judicious use of fertiliser and pesticides and adoption of appropriate plant protection measures increased the yield. About 20,000 bags of jaggery he was able to get from the yield. Incidentally towards the end of 1965, the price of jaggery had gone to Rs. 200 to 250 per four bags. A net profit of rupees two lakhs he had in that particular year. He purchased land and built one-storeyed 50-bedded orthopaedic hospital in the centre of Coimbatore City.

Growing interest in cane cultivation

Because of this, his interest in cane cultivation grew day-by-day. He also made some interesting studies in sugarcane cultivation in consultation with the centrally sponsored Sugarcane Breeding Institute and the State Agricultural

Department specialists. According to him CO 413 blossoms early and yields less if the application of fertiliser is less; whereas the same yields more with late florescent if the fertilizer input is more. The better quality B 7172 variety will yield less with more sugar content. CO 1295 variety is ideally suited for rainy season. And CO 6304 is the latest released good variety which has the quality to give more jaggery with less fuel due to its heavy sucrose concentration. Contrary to the population notion, he said cane cultivation could be done throughout the year without minimising the sucrose concentration provided the late florescent varieties like CO 1295, CO 658 were selected for monsoon seasons. The narration of his experiences to the progressive farmers on the occasion of Sugarcane Breeding Institute's field day celebration promoted new vistas in the sphere of cane cultivation.

Spectacular growth

From the small holding of 6 acres wet land, he became the proud owner of 47 acres of land, within a period of 30 years. He also cultivates paddy, maize and fruits. He got the district-level second prize in 1971 for his IR 20 cultivation. He was one of the directors of co-operative land-development bank, and also the counsellor in many organisations.

Now, Dr. Arjunan is 53 years, having 4 daughters and 2 sons. He attends more than 200 patients every day.

—Source: F. P. O. Coimbatore.

PROGRAMME FOR PROMOTION OF TOURISM

TOURISM in the coming years is expected to yield rich dividends. Both Centre and State Governments are taking several steps to reap this benefit.

The Air India has drawn up a programme for promotion of Tourism abroad by organising exhibitions at important centres in foreign countries through their offices to attract more tourists to India. They have approached this Government for old temple sarees, Toda's costumes and jewellery, ancient musical instruments, etc., and deputed their costume designer to select articles in consultation with the State Government. The Department of Tourism, Government of Tamil Nadu have accepted the proposal of Air India and sanctioned Rs. 7,000 for this project details of which are given in the annexure.

The State Department of Tourism has collected the temple saree specially made by Kalakshetra, Madras and Toda costumes and jewellery and ancient musical instruments like Panchamukha Vadyam (Five face drum) and Mahara Yazh (a string instrument), etc., designed and made by Thiru P. Damodaran of Madras.

The Government of Tamil Nadu have also sanctioned Rs. 10,000 towards hospitality programme of State Tourism Department this year under which foreign experts sponsored by Government of India and connected with travel trade and tourism are treated as State Guests. Besides, it has been now decided to invite Air India Artists to undertake a tour of Tamil Nadu to enable them to study the tourist attractions and ancient art and architecture of our temples so that they can introduce Tamil motifs in the publicity programme, interior decoration, etc. of Air India. For this Government have sanctioned another 10,000 rupees.

TEMPLE ARCHITECTURE IN SOUTH INDIA 63

According to Mr. DUBRUEL, a French authority on Architecture, the outstanding characteristics of South Indian architecture are

- (i) it is ancient;
- (ii) it has remained isolated, and uninfluenced by the development of architecture in other parts of the World and
- (iii) it has involved over the ages without external influence.

The isolation cannot be attributed to the non-availability of communications in the ancient times. During the Chola period, the South Indian architect had opportunities of visiting other parts of the world but even then, he held fast to his own method of architecture. Every chief mason was an institution by himself and he struck to his motifs which he inherited from his ancestors. Thus Dravidian Art presents a rare picture of an architecture which remained in isolation for more than thirteen centuries borrowing nothing from foreign arts. But the art underwent variations continuously on the path of natural evolution in such a manner that one could follow its modifications from one century to the other. In the ancient Dravidian monuments the origin of all motifs of ornamentation, which characterise the modern style, could be traced; but on the whole, Dravidian art has changed by itself rather than through the influence of other styles.

South Indian Architecture can be roughly divided into periods of:

1. Pallava Architecture (600-850 A.D.).
2. Early Chola Architecture (850-1100 A.D.).
3. Later Chola Architecture (1100-1350 A.D.).
4. Vijayanagar Epoch (1350-1600 A.D.).
5. Modern Epoch (1600-A.D. till day).

South India is fortunate in preserving its original form without major devastations that visited other parts of the country during alien invasions. Thanjavur district located in the delta of Cauvery river and traditionally known as the

Granary of the South, was the seat of the famous Chola Empire. The rulers of that empire were noted for grandiose architectural constructions of Hindu temples, both Saivite and Vaishnavite philosophy. This is the reason for concentration of a large number of ancient and interesting Hindu temples in Thanjavur district. There are over ten thousand well known and important temples in the fourteen districts of Tamil Nadu of which 1809 temples are situated in Thanjavur district alone. The Census Department of Government of India have selected 277 important temples for their surveys study and publication (in Census, 1961) relating to temple in Thanjavur district. Out of the 1,809 important temples of Thanjavur district, 24 belong to the Pallava period; 400 belong to the Chola and Naick periods; Of these not less than 36 are more than two thousand years of age. Most of these temples have richly endowed landed properties and several temples have noteworthy collections of jewellery. Assessment of age of construction of temple have to be based on the style of construction and reference found in the inscriptions in temple, to other events of kings and visits by main sains. The most ancient Tamil classic of Tholkappiam makes the only mention that every type of land is associated with a particular God while referring to religious aspect of ancient Tamil culture. (Murug is said to be the Lord of the Hill tracts; Indra is said to be the Lord of fertile deltaic plains); Varuna-God of rains is associated with pastoral lands. The other famous Tamil classic SILAPPATHIKARAM refers to the Indra festival in Kaveripatnam which confirms that Indra was the God of Cauvery delta. Later Sangam classics refer to Gods as the "Deiy under the Banyan tree" or "Deiy under the tree", survival of this ancient cult, is even now exhibited in some village shrines under Banyan, Neem Pipal or other big tree. The most ancient temple covered under the survey of temples of Thanjavur district in Tamil Nadu by the Census of India seems to be the one in Kaveripoompittinam, where according to SILAPPATHIKARAM both Kannagi and Madhavi worshipped. This temple is constructed of brick and mortar and on a modest dimension compared with the large temples of the later Cholas. It appears that large temples owe their commencement to the Pallava period; the style got more refined during the Chola period and turned highly ornamental and decorative in the days of Vijayanagar Empire. References to all temple towers, piercing the clouds are found in SILAPPATHIKARAM, indicating that even about two thousand years back, there were huge temples with tall towers (gopuram), but these temples have not remained unaltered all these ages.

History narrates that it is the Pallavas who were the first great temple builders. Remnants of Pallavan architecture can be detected here and there in the temple of Pallaneswaram in Kaveripatnam in Thanjavur district. A bold and impressive style, as is well and distinctly expressed in the famous Bragadheeswarar temple in Thanjavur, emerged during Chola period. It was a mature style with an integrated conception of a temple. Pandyas succeeded Cholas but the same style continued, perhaps with taller gopurams in the later period. In the succeeding period of Vijayanagar rule, large scale construction of temple was again taken up with added ornamentation and exquisite beauty. The temple at Darasuram is considered as a landmark in the transition of style from the Chola to Vijayanagar period. It clearly denotes that there was a change over from the relatively robust and disciplined productions of the Pallavas and Cholas towards richer and more elegant style. The intricacy and rich beauty of the Vijayanagar type of temples lie in its pillars and spheres and the way of sculptural work to fit into an integrated figurative drama in stones. Pavilions consisting of hundreds of pillars form the chief type of architectural scheme. These impressive pillars form the central theme; often the shaft becomes merely a central core for the attachment of the involved group of stutory, often of heroic size and chiselled entirely in the ground having as its most conspicuous element of a furiously rearing horse rampant hippograph or an upraised

animal of a supernatural type. Subsequent to 1565, when the Vijayanagar empire abruptly came to an end, the Nayak rulers of Madurai have contributed to the construction and maintenance of temples in Thanjavur district. The excellent expressions of their architecture is in the temple at Thiruvavur. At this period, ornamentation reached its climax, the vimanas, the gopuram and the pillars were all richly decorated; the architect has been able to maintain a theme of integrated aesthetic imagination.

Of the 1,809 temples in Thanjavur district, 1,650 are administered by the Hindu Religious and Charitable Endowments Board of Tamil Nadu, 21 temples by the Dharmapura Adheenam (Mutt), 16 temples by the Thiruvadhuthurai Adheenam (Mutt), and the rest 122 fall outside the administration of the Hindu Religious and Charitable Endowments Board.

These ancient temples are still alive and green exposing the intricate architectural and sculptural art works of the ancient artists carved in stone, bronze and plaster.

There are a number of Hindu Religious Institutions specially intended to promote the ideals and culture of Hinduism in Tamil Nadu, many of them are time old and ancient, rendering valuable service in their respective fields. Hinduism, a most tolerant religion, covers both Saivite and Vaishnavite philosophy. There had been reputed devotees as the 63 Nayanmars and the number of Saints including the Nalvar—Appar, Sundarar, Sambandar and Manickavasagar propagating Saivism through their literary works; similarly there had been reputed devotees as Alvars and Desikar propagating Vaishnavam through their literary talents. There had been numerous Sankarachariars and Madathipathis who had been constantly keeping the religion alive in the past. These religious institutions still continue their noble services for the religion.

History and Archaeology play a very vital role in generating tourist traffic all over the world. Tamil Nadu is specially fortunate in having its ancient and rich heritage and a variety of dedicated living traditions and cultures spread over its jurisdiction. Finest monuments such as Historical Forts, structures

depicting Architecture of different ages, ancient temples (of Chola, Vijayanagar, Pandiya and Naick and Pallava periods) and birth places of famous saints, poets, and patriots adorn the rich and famous heritage of Tamil Nadu. Stone inscriptions still alive in most of the ancient temples of the State are narrative of the various activities of the famous rulers including their numerous gifts and donations both in cash and kind. The ancient Architecture of the then rulers is unique in itself its grand style and picturesque Gopurams in temples. It is observed that more foreign tourists visit India attracted by its historic and architectural value. South Indian rulers had been maintaining calm and peace in the past, in contrast rulers of other parts of the country, which enabled them to concentrate upon temple architecture in their own exclusive style which even to-day is admired by visitors.

The main authorities involved in planning in and around areas of historical and architectural value in India are:

(a) The Archaeological Survey of India and their counterparts in the various States;

(b) The Central Development of Tourism, Indian Tourism Development Corporation and their respective counterparts in the various States;

(c) The departments entrusted with physical planning with various States. (Directorate of Town Planning in the various States).

The Archaeological Survey of India was established during British period in India through the pioneering efforts of Lord Curzon at the beginning of the century and since then the department has been active in identifying our ancient monumental heritage. It is almost exclusively a maintenance department functioning at present under "The Ancient Monuments and Archaeological Site and Remains Act of 1958" and rules thereof. This Act superseded the "Ancient and Historic Monuments and Archaeological Sites and Remains (Declaration of National Importance) Act, 1951 and section 126 of the States Reorganisation Act, 1956—(which section relates to Ancient Monuments)". The current Act applies

only to existing buildings and sites of at least a hundred years old; it is an effective piece of legislation widely empowering the Director General of Archaeology to declare monuments and/or areas to be protected as being of archaeological importance to enter upon any land, believed to contain ruins or relics; to acquire such land and to remove unauthorised structures from them and impose penalties. Under this Act, the "Ancient Monuments and Archaeological Sites and Remains Rules, 1959" was passed empowering the Directors General to declare (i) to the extent desirable "prohibited areas" around protected monuments where in no construction and mining operations are permitted and (ii) "regulated areas" in addition to and around the prohibited areas, wherein development is permitted only under licence. Most States (including Tamil Nadu) have set up their own Archaeological department with legislation on similar lines to the All India Act. The Department's maintenance and policing of monuments of primary importance and areas around them are satisfactory but they are not adequately equipped to prevent vandalism in the smaller and scattered monuments. The hundred years minimum age prescribed in case of monument in the Act fully covers the great Hindu, Buddhist and Indo-Islamic periods but it excludes a majority of the post mutiny buildings and sites. Even though this may be in order from Archaeologist's prime concern of ancient monuments, for a physical planner, all buildings and sites of historic and architectural importance, irrespective of their age, are significant. A need is felt for effective legislation in the country and States to protect and enhance, where required the value of the surroundings through suitable civic design of all buildings and sites of architectural and historical importance.

The Tamil Nadu Tourist Development Corporation has recently been constituted in 1971 with a view to set up and concentrate on Tourism Development at State level. In cultural-historical tourism, these departments of Tourism have no statutory role; the Archaeologists are responsible for excavation and conservation; the Physical Planner is well-equipped for preparing statutory Tourist Development Plans as part of comprehensive Development Plan Programmes.

A Note

ON THE MUSICAL INSTRUMENTS—

PANCHA MUKHA VADYAM

This is a large instrument and has a big spherical resonator made of panehalokha, brass or copper. There are five projecting tubes on the top, four from four sides and one from the centre which is a bit larger in diameter than the other four tubes and has a circular ring of skin. Four pieces of goat skin are stretched over the four faces on the sides and for the centre face there is an outer ring of skin in addition to that of the playing face as in the case of Mridangam. Delightful rhythmic patterns can be played upon this instrument. Acoustically also, this instrument is of interest.

Heaviest Instrument of the Drum Class

This instrument is mainly played during temple rituals in Tiruvavur and Tiruthurai in Thanjavur District. In the Sarva Vadyam rituals this instrument is played. This is the heaviest instrument of the drum class.

In the temple at Tiruppur in Thanjavur district is a rare metallic image of Nataraja with a figure in the pedestal as playing on the Panchamukha Vadyam. In Udaiyarpalayam also there is a similar bronze image of Nataraja. In the temples of Chidambaram and Tiruthurai can be seen sculptured figure with eight hands

playing or the Panchamukha Vadyam.

MAHARA YAZH

This is also an ancient instrument somewhat like a harp. In Europe, Egypt and other countries, it is called harp. In the Bible it is mentioned a lyre. In the temples of India one can see sculptures with various kind of musical instruments. In Thirumayam, Amaravathi, Sanchi and Goli, for instance there are sculptures with different kinds of Yazh. In Thirumayam (8th Century) there is a rare sculpture of Saint Barad playing on Mahara Yazh.

Ancient Panar's Musical Instrument

In ancient days, tribals and mendicants called Panars used to play Yazh. The instrument is also a favourite of the Kings and their families. Emperor Samudra Gupta is depicted in his Gold Coins as playing Yazh. One of the Saivite Saints, Thirumelakanta Nayanar; a Master of Yazh. In his Thirupalliyechchi, Manickavachagar refers (verse 4) to the use of Yazh and Vena which shows that these two instruments were in vogue in those days. But when raga, alapana emerged as an important branch of classical music, Vena came into prominence throwing the Yazh into the background.

AIR INDIA'S PRICELESS TREASURES OF ART

Air India today is one of the greatest art collectors in the world and enjoys the unique distinction of possessing the priceless treasure of India's rich and varied cultural heritage.

The primary objective was to create an esoteric national image—an image of an all Indian airline. Making a modest beginning 20 years ago, Air India scoured the country to find traditional masterpieces which, notwithstanding the fading of empires, have remained a voice from the past. It searched art galleries and art studios and bought the works of the old and the new artists.

Today Air India's collection is fabulous, and it ranges from old stones and bronzes to delicately chiselled wooden panels, from fine miniatures to folksy wooden figures, of the distant past belonging to South India, Madhya Pradesh, old Central Provinces, Rajasthan and Gujarat, from the relics of the past to the expressive art of today. Each piece is a page from mythology. And Air India is using this priceless treasure of art to provide international exposure of India's inexhaustible wealth of cultural past and contemporary rhythms. Several selected pieces also adorn Air India's hundred offices around the world, telling its patrons the charm and joy that India is, its religious beliefs and mythological stories, expressed exquisitely on canvas and in oil, in wood, in stone and in metals.

The office entrance of Air India's Pairs office is composed of wooden panels engraved with a thousand figures. The panels depict Gajalakshmi, the goddess of wealth, elephant guardians and host of attendants; Ram, Sita and Lakshman in exile from the kingdom of Ayodhya; Lakshmi and Narayan, the celestial pair, astride their vehicle—the Garuda; Lord Krishna as slayer of the demon snake Kali, and as Venugopal—the capricious flute player philandering with the gopis.

Recommendation of the National Commission on Agri- culture

Four interim reports submitted to Thiru Fakhruddin Ali Ahmed, Union Minister of Agriculture, by Thiru Nathu Ram Mirdha, Chairman, National Commission on Agriculture, deal with :—

(1) Reorientation of Programmes of Small Farmers and Marginal Farmers and Agricultural Labourers Development Agencies ;

(2) Poultry, Sheep and Pig Production through Small and Marginal Farmers and Agricultural Labourers for supplementing their income ;

(3) Sericulture ; and

(4) Social Forestry.

In its Interim Report on Reorientation of Programmes of Small Farmers and Marginal Farmers and Agricultural Labourers Development Agencies, the Commission has recommended that the distinction between S.F.D.A. and M.F.A.L. projects should be given up and in future each Agency should have a compact area approach to cover the small farmers, marginal farmers and agricultural labourers in its area of operation.

The basic approach to the programme of small and marginal farmers should be to improve their crop production. Assistance would have to be directed towards development and utilisation of irrigation facilities, introduction of water harvesting techniques, land development and adoption of improved technology of farming, both in irrigated and rainfed areas. In order to ensure a more equitable distribution of limited groundwater, considerable emphasis has been placed on group-owned well system and community irrigation, wherever possible, for the benefit of small and marginal farmers. Through consolidation, the scattered holdings of small and marginal farmers are to be brought together to form compact blocks to enable preferential irrigation by the State Governments.

The Commission has suggested that State programmes of irrigation development should be undertaken in areas where surface water schemes or large-scale groundwater schemes are possible, so as to benefit substantially the small and marginal farmers. States would also be expected to take up on their

own, programmes of water harvesting, soil conservation, etc., in the rainfed areas on a substantial scale. In order that farmers can take to improved farming practices and necessary technical guidance is available to them, the strengthening by State Governments of their extension network in the selected areas has been proposed. The Report has suggested the formation of as many Farmers' Service Societies as possible to make a beginning towards the development of an integrated credit structure.

Extension of programmes

The Commission has recommended the extension of the programme to 160 Agencies including the existing Agencies and indicated the distribution of additional Agencies among the States. Each Agency on an average is supposed to cover 70,000 small and marginal farmers preferably in the ratio of 1:3 to conform to the all-India pattern and to ensure that the programme would have the necessary tilt in favour of marginal farmers who are more numerous. As a result of the extension of the programme, about 11 million small and marginal farmers are likely to be covered during the Fifth Plan. In addition, the investment programme and the much more intensive crop production programme, both under irrigated and dry farming conditions would give increased labour opportunities to agricultural labourers. Since crop production alone may not yield incomes sufficient to raise many small and marginal farmers above the minimum need level, the Commission has suggested the superimposition of subsidiary occupation programmes to be undertaken and financed separately on a substantial scale in such of the Agency areas which have been included in the list of districts identified for individual subsidiary occupations in its Interim Reports on Milk Production, Poultry, Sheep and Pig Production and on Sericulture. It has been recommended that the entire programme should be time-bound and target-oriented and implemented with a sense of urgency.

The Commission has estimated that a sum of Rs. 241 crores would be required in the Central Sector of the Fifth Plan for this programme. It has recommended that in future, the State Government should bear the cost of staff subsidy to institutions and the cost of staff of the Agency,

the staff of the Farmers' Service Societies and additional extension staff of the State Governments in the project area costing in all Rs. 40 crores over the Fifth Plan period. The Commission has recommended the continuance of the subsidy of 25 per cent of the cost of investment to small farmers and 33-1/3 per cent to marginal farmers ; at the same time, it has suggested certain modifications in the pattern of risk fund subsidies being given under S.F.D.A./S.F.D.A. schemes.

Poultry Sheep and Pig Production

The Report on Poultry, Sheep and Pig Production through Small and Marginal Farmers and Agricultural Labourers deals with the need and scope for augmenting the production of eggs and poultry, mutton and wool, and pork and pork products by harnessing and developing the facilities available with the small and marginal farmers and agricultural labourers. It has been observed that livestock rearing has remained mainly as a by-product industry of the rural areas in the country and it is practised as a mixed farming complement along with crop production.

Most of the people engaged in raising poultry, sheep and pigs in the rural areas belong to the category of small and marginal farmers and agricultural labourers. The Commission feels that improvement in the productivity of livestock such as poultry, sheep and pigs and their raising through weaker section of the population can be relied upon as a major instrument for effecting social change by improving the income of these people. Such a development would also offer great potentiality for providing employment to the producers and their family members and also to a number of village artisans. Increased production of animal products such as eggs, poultry, meat, mutton and pork in the rural areas would also lead to increased home consumption of these products by the producers, thus ensuring better nutrition to these people. It has been recommended that these development programmes should be formulated on a package basis providing for all inputs such as better breeding and feeding, proper management, disease control, credit and services such as extension, remunerative marketing and other facilities.

The Commission has recommended that while formulating the size of the poultry programme in each district not only due consideration should be given to marketing facilities but it should also be ensured that as large a number of families as possible would be benefited. Each selected family should be assisted to start a poultry unit of 50 layers and that in each district at least 3,000 families of small and marginal farmers and agricultural labourers should be identified and enrolled under the programme which should be taken up in 167 districts covering about 5 lakh families.

Programmes have been suggested for sheep development for improving the quality and productivity of sheep in regard to wool and mutton production by the small and marginal farmers and agricultural labourers. This is proposed to be obtained by gradual replacement of indigenous types of sheep with these people by crossbred progenies having exotic inheritance produced by the farmers themselves and/or to a limited extent by supply of crossbred ewes and rams from other sources.

One hundred and forty districts have been recommended to be taken up for the sheep development programme, at least 3,000 families being assisted in each district. This would help over 4 lakh families.

The Commission has drawn attention to the fact that pig keeping is mainly in the hands of the backward communities and with tribals and that such pig breeders deserve special assistance for improving their pig rearing practices. It has recommended that the main plank for improving the economy of pig producers should be the replacement of indigenous pigs by crossbred pigs, produced mainly by the breeders themselves. It has been proposed that about 2,000 families of pig farmers should be assisted in each district and that pig production programmes should be undertaken in about 100 districts which will help about 2 lakh families to improve their economic status.

For the production and supply of crossbred poultry, sheep and pigs to participant farmers and agricultural labourers, the Commission has emphasised that intensive crossbreeding schemes should be implemented in selected areas where such work as already been found popular

and successful. It has also suggested that the farmers selected for these poultry, sheep and pig development programmes should be extended subsidy to meet the costs of capital expenditure such as purchase of stock, rearing up to production stage, housing, equipments, etc. A total subsidy of Rs. 71.40 crores has been indicated during the Fifth Plan period.

The Commission has laid special emphasis on organising these programmes on co-operative basis mainly consisting of producers belonging to small and marginal farmers and agricultural labourers. In view of their backwardness and low economic status, it has been recommended that Government and the credit agencies should liberalise the terms of financial assistance in the form of loans.

Sericulture

The Interim Report on Sericulture deals with development of mulberry silk which accounts for about 79 per cent of the total silk production in the country and is concentrated in Mysore, West Bengal, Jammu and Kashmir and Uttar Pradesh. The Commission has suggested a plan of action and identified certain districts for the development of sericulture in these major silk producing States as a first step towards modernising the sericulture industry, particularly keeping in view its beneficial impact on the economy of small and marginal farmers.

The Commission has recommended that instead of relying on the development of sericulture based on local races, a phased programme should be taken up for the introduction of bivoltine hybrids in the irrigated mulberry areas of Mysore, particularly Kolar and Chennapatna, where the method of rearing bivoltine hybrids developed by the Central Sericultural Research and Training Institute could be followed.

Social Forestry

The Interim Report on Social Forestry deals with farm forestry, extension forestry, reforestation in the graded forests and recreation forestry and has suggested an action programme during the Fifth Plan. The programme is designed to bring social benefits to the population

in the form of increased supply of fuelwood (thereby releasing cow-dung for manure), small timber and fodder as well as of recreational facilities.

The Commission has recommended extensive plantation on the bunds and boundaries of the fields of the farmers for which the forest extension units would develop the nurseries for the supply of seedling. A pilot scheme for development of farm forestry has been recommended to be taken up in the Central Sector in 100 selected districts—60 districts in areas with advanced agriculture where fuelwood and timber are scares and 40 in dry and arid zones.

Mixed forestry has been proposed to be taken up on waste lands, panchayat lands and village commons in drought prone areas for which a survey of waste lands and village panchayat lands has been proposed for preparing land-use plans based on a village or a group of village as a unit. Development of fodder and grass is to be an important component of mixed forestry so as to increase their supply and benefit the weaker sections of the population who may be encouraged to take up animal husbandry programmes. Emphasis has, therefore, been placed on the organised production and distribution of seed involving local farmers. The Commission has proposed that an area of one lakh hectares should be covered through pilot projects of mixed forestry in the Central sector.

With a view to preventing damage to agricultural crops, agricultural lands, roads, etc., through wind erosion, the Commission has suggested the establishment of shelter belts in hot and arid areas. The programme is to cover one lakh hectares distributed among the States of Haryana, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Mysore and Maharashtra with 50 per cent central assistance. In addition, the commission has recommended planting of trees on lands on the sides of roads, canal banks and railway lines as a commercial investment with an annual target of not less than 8,000 k.m. of planting. Moreover, three lakh hectares have been proposed to be covered by reforestation programmes in degraded forests with a view to increasing the

supply of fuelwood and small timber and preventing unauthorised removal from and easing the pressure on valuable commercial forests. To supply fuelwood and small timber for agricultural implements at fair rates, State subsidy has been proposed for the first 15 to 20 years.

Urban Recreational need:

The Commission has advised that the State Government should make a study of the problem of recreational needs of the urban areas and dedicate some forests or establish tree groves near such areas for recreational purposes. Moreover, green belts, around towns and cities, wherever necessary, should also be created.

The Commission has laid considerable emphasis on appropriate training in extension methodology and technology for officers selected for implementing the programme.

Agricultural Universities are also to include in their syllabi a course in social forestry for the agricultural graduates. A large number of field demonstrations with the participation of panchayats, co-operatives and village school staff have been suggested for popularising social forestry. Field assistants are proposed to be recruited from the local people in the programme areas to secure involvement of villagers. The Commission also recommends that all social forestry programmes should be executed by engaging local labour and not through contract system.

For implementing the programmes during the Fifth Plan, a total expenditure of Rs. 80 crores is visualised including the cost of extension organisation, research and survey. The share of the Central Government has been estimated at Rs.34.50 crores.

EMPLOYMENT TO 10,200 TRAINED TEACHERS SANCTIONED

The Government of Tamil Nadu have accorded sanction for creation of 10,200 teacher posts to provide employment to the unemployed trained teachers. The Government sanction the employment of these teachers in recognised schools under the various managements in Tamil Nadu from September this year till the end of the academic year 1973-74 (31st May 1974). They will draw the pay of the posts and the usual allowances admissible to the State Government employees.

Among the posts to be created under the scheme during 1973-74 are 500 posts of Higher Grade teachers, 6,000 posts of Secondary Grade teachers, 500 posts of Physical Education teachers, 1,200 posts B.T. teachers and 2,000 posts of Craft teachers. It is estimated that an expenditure of Rs. 150 lakhs would be incurred in Tamil Nadu during 1973-74 under this scheme.

It is said that about 1,800 Apprentice Teachers appointed under State Government's Apprentice Teacher Scheme in October, 1970, are yet to be absorbed in regular vacancies. Out of the newly sanctioned posts of 10,200 as many as 1,800 posts shall be earmarked for allotment to the schools in which those apprentice teachers are working.

The object is that a post of the appropriate Grade under this scheme is allotted to benefit each and every apprentice teacher now working, so that he or she can be allowed pay in regular pay scale as also allowances with effect from the date of the Government order issued in this respect. The Director of School Education will distribute the remaining posts among schools under the managements of the Government (Government, Board, Local Body and Aided). These posts may also be allotted to the schools run by the Directorates of Harijan Welfare and Backward Classes.

The Chief Education Officer will distribute the posts in each district and the additional posts for each school will be allowed on the basis of Teacher-Pupil ratio in eligible cases. No fresh appointment of any out-sider as teacher in any regular post should be made in any school in which the teacher appointed under this scheme remains to be absorbed in regular post and the teachers appointed under this scheme are likely to be appointed in regular vacancies during the academic year 1974-75.

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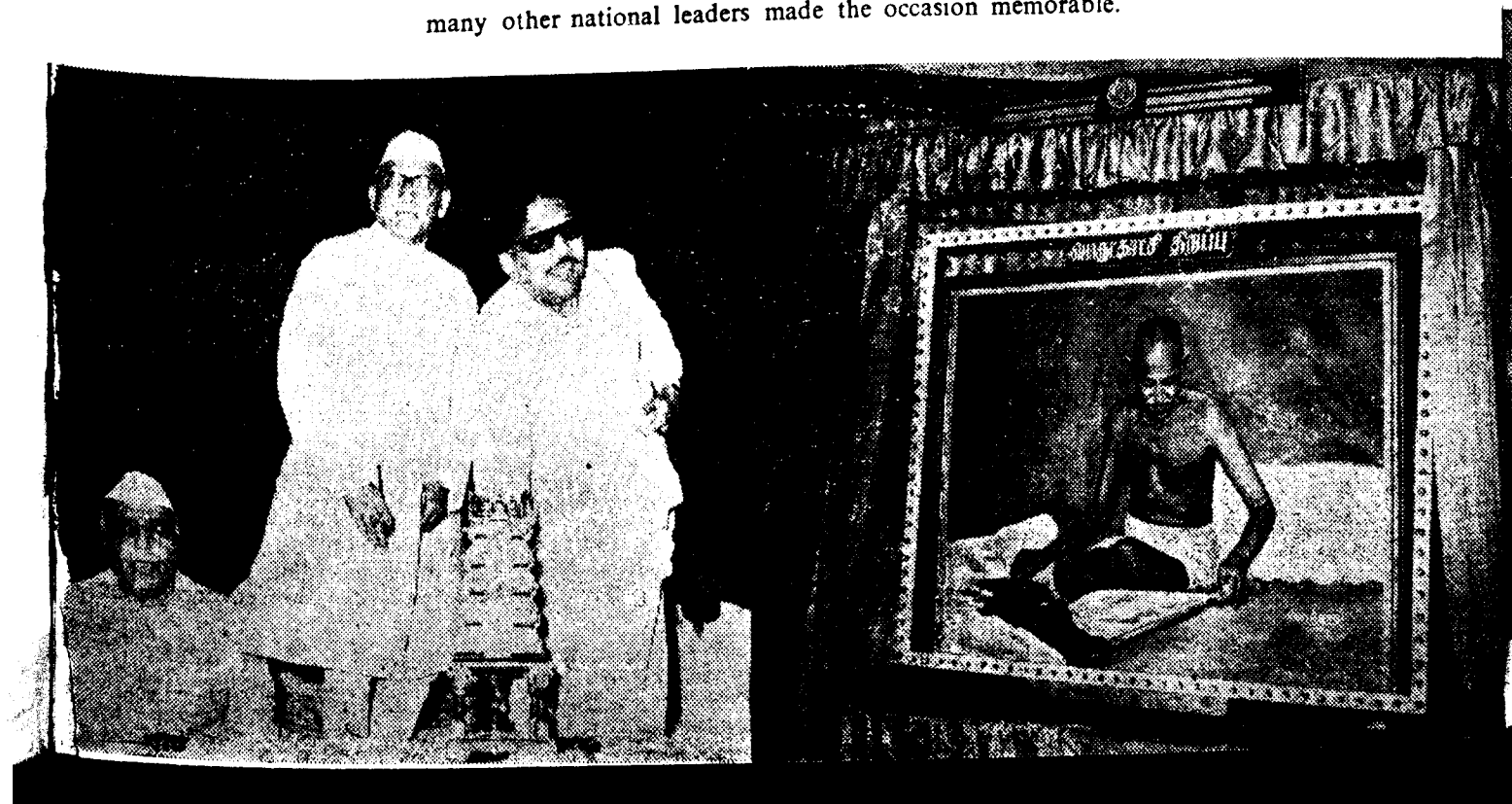
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Nehru will be remembered with Children's rally and Child Art Competitions throughout Tamil Nadu on 14-11-73.

Gandhi Jayanthi Celebration at Raj Bhavan this year created massive response. Thiru Y. B. Chavan, India's Finance Minister, Chief Minister Karunanidhi and Governor K. K. Shah and many other national leaders made the occasion memorable.



FIFTH PLAN CALLS FOR DRASTIC REVISION IN ADMINISTRATIVE MODES

The inaugural address of Dr. M. Karunanidhi, Chief Minister, at the Seminar on Plan implementation held at Rajaji Hall on 26th and 27th October, 1973.

As you are all aware, the primary concern of my Government is the welfare of the common-man who has remained poor, despite all the Plans made and implemented so far. I consider the distributive mechanism which will raise the common-man above the poverty line more important than planning. The "poverty line", as defined in India, is perhaps the lowest in the world. In the United States of America and Western Europe, people with annual income lower than 7,000 dollars and 3,000 dollars are classified as poor. But in India, those who do not even get an annual income of Rs. 240, is classified as poor. More than 55 per cent of the population of this State is well below the poverty line.

Planning is a means to a goal—securing greater welfare of the people. The implementation is equally important. It is because of our awareness of the importance of implementation that we set up the Administrative Reforms Commission, at the same time as the Planning Commission. Massive Plans do very little, unless we can make them real through implementation.

It would be useful if we think for a moment under what conditions we want to formulate Plans and implement them. We suffer from a serious limitation of natural resources. Even in respect of water, we have reached the limits of exploitation. Our high density of population neutralises all our attempts to raise the per-capita income. At the same time, our administration is a prisoner of its own history. Many vested interests have grown up around the present complex of

**CHIEF
MINISTER
STRESSES
NEED
FOR
QUICK
RESULTS
RATHER
THAN
TARDY,
BUT
BETTER
RESULTS**

rules and procedures. A small change in some procedure is sometimes resisted, simply because some people may lose their jobs and their position. One main difficulty is that the system of administration which is to be changed, has itself to implement the change. Revenue sharing between the Centre and the State has so far been unhappy and has been indirectly the instrument for curbing the initiative of the State administration. These limitations make any change difficult and slow. I am, however, confident that our Administrative Reforms Commission is fully aware of this problem and it will take into account this "built-in" resistance. As you are all aware, our procedures and rules are designed for slow and careful decisions, that are carried over from a law and order State where decisions can be slow, to a developmental State where the activities have to be very brisk and the progress should be much speedy. To-day the people press for a change—change to have a better education, health and housing, industrial facilities, better transportation and communication systems, better standard of life, etc. A static Government with the outmoded outlook cannot bring these changes. A dynamic approach to development presupposes correspondingly a dynamic attitude to administrative structure.

Plan implementation involves a series of decisions—decisions to start projects, decisions to buy materials, to award contracts, etc. We have to see how far our present approach to policies and administration helps such quick decisions. One aspect of our attitude as a nation is, that we are hypercritical. We expect perfection in all decisions. At any given point, administrative leader has certain facts before him. He has to take decisions based on them. If we start criticising him in light of facts which we know or he knows later, we encourage the

habit of postponing decisions with the hope that better information will come later. Thus the better becomes the enemy of the good. This delay of decision-making affects the nation at all levels. Let me cite an instance. For years the Salem Steel Project was delayed as a result of the arguments about the product-mix and processes. If a decision had been taken in 1960-1963, by now, the plant would have been producing.

Our present system suffers yet from another defect—excessive emphasis on fault-finding. An Administrator, who takes many decisions, cannot be expected to take all of them right. I would rather have my officers to take the majority of the decisions right and quickly than all of their decisions right but slow. A General may concentrate on winning all his battles and yet lose the war. I would prefer the officers to give emphasis to the time element in the decision-making process. This in turn demands that our procedures of audit and evaluation should emphasise this aspect. Audit should shift its emphasis from pursuit of minute "trivia" and move over to overall performances. Here we should emphasise the need for encouraging bold decisions.

Our administration suffers from too many checks and balances. This is a relic of the old colonial era. Even little things have to come up to State Government's notice because they have to go up to the Centre. Multiple clearances are needed for even simple decisions. In a country as large as India, and an economy as complex as ours, this is bound to delay decisions. It is in this context that our request for State autonomy should be viewed. The demand for State autonomy is for enabling the State to perform the legitimate task of eradicating poverty, the platform on which we have been voted to power by the people of the State. I have made a clear stand on this issue elsewhere. I do not propose to dwell further on this, except to say that the greater powers for the State are the pre-conditions for effective and efficient implementation of the Plan.

The autonomous bodies in the Government companies, set up by this Government have to shed their Governmental method of working and adopt styles of management, appropriate to their lines of activity to achieve the objects set up for them.

Hence, I would like to touch on the present controversy about the technocrats and general administrators. To my mind, it appears that both these wings are complementary

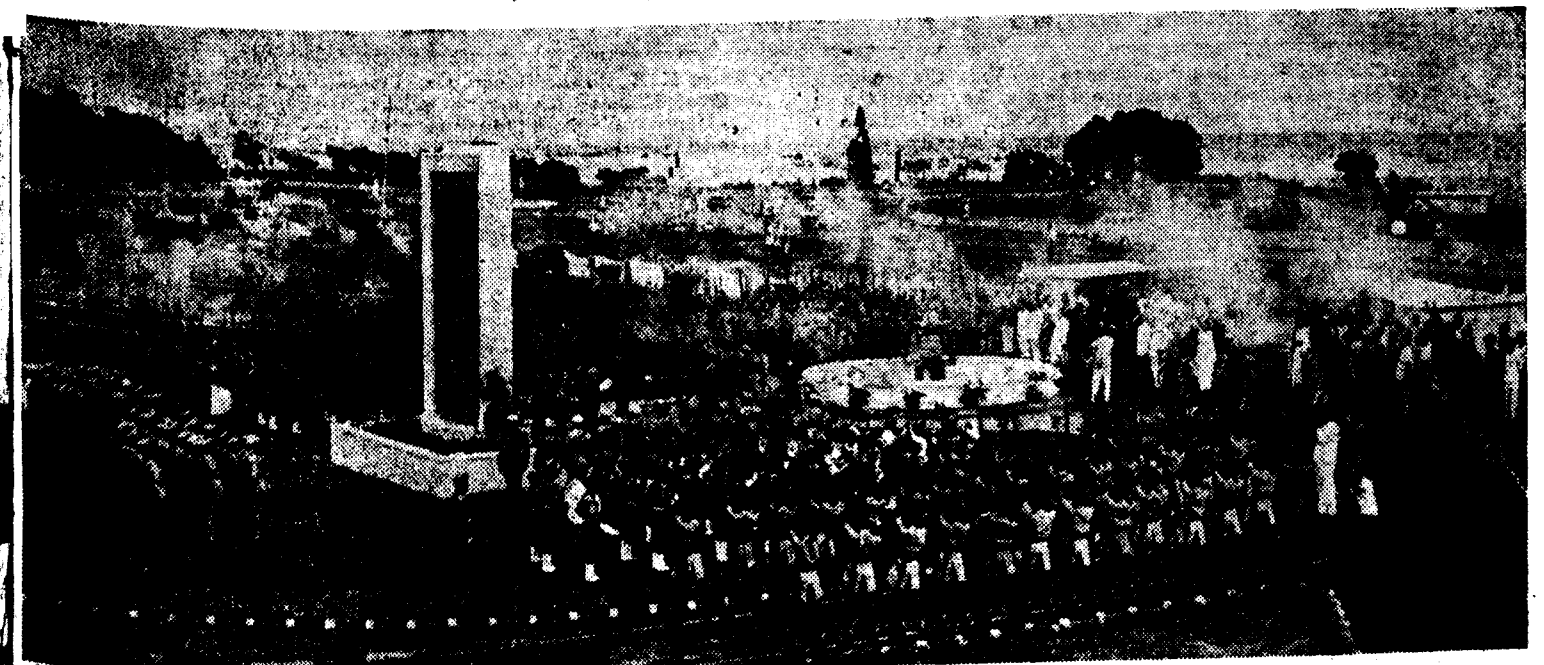
like the convex and concave of one and the same circle. You must train the general administrator also in technical competence and the technocrat should also be conversant with general administration. Thus training is a vital input to gear up administration at all levels.

I have been impressed by the varieties of suggestions put forward by the participants in their papers in this Seminar. I am sure that this Seminar would consider these in depth and make its recommendations to Government. One suggestion, I would like to put forward is that a flexible approach be adopted in the implementation of rural development at district level. We are considering a suggestion for the setting up of District Rural Development Corporations or Authorities in each district. This may be strictly official in composition and be under the Collector. They may also enable the raising of resources in the form of rural deposits and local contributions. If need be, we can also assign specific taxes to these bodies. The Seminar may usefully discuss these suggestions also.

I welcome a Seminar of this kind and a free and meaningful exchange of ideas among the Civil servants, Planning experts and Social Scientists as it is bound to clarify our thinking and generate new ideas on this subject.

Homage to Policemen killed in action.

An impressive commemoration parade to pay homage to the memory of the Police personnel who fell in action during the previous year was held at the Office of the Inspector-General of Police on 21st October 1973.



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RE-ORIENTATION IN EDUCATION

In the field of education, first we attempted to increase its quantity by making it more than before, then we attempted to improve its quality by making it better than before; now we are engaged in giving it a new orientation by making it newer than before.

During the past several years. Political leaders, Educational Experts and the Special Commissions have declared that our system of education needs a revolutionary change. Their charge is, that in the basic policies and aims no fundamental changes have been effected in the system as formulated by Lord Macaulay in 1835 and modified by the Wood Commission in 1854 and Canter Commission in 1882. Even Swami Vivekananda had severely condemned our system of education. He says, "Getting by heart the thoughts of others, in a foreign language and stuffing your brain with them and taking some University degree are not real education." He further observes that "we have only to do so much for the boys that they may learn to apply their own intellect to proper use of their hands, legs, ears, and eyes."

The aim of education

Once it was thought that the aim of education was only to acquire the knowledge of the three R-s, namely, reading, writing and arithmetic. Now it has been realised that the correct aim is the development of our capacity to put to proper use the three H-s, namely, the hand, head and

heart. The process of education should be such as to arouse and develop the thinking capacity that lies dormant in every one of use. It should improve our talents. It should discipline our mind. Education kindles and develops the inherent ability of man to think. This, in turn, increases his ability to act. As a result, man is able to convert the natural resources to his benefit and acquire the needs of a comfortable life.

Extracts from the Convocation address at Madurai University by
Dr. V. R. Nedumchezhian
Education Minister.

Defects in the present-day education

The Present education to-day produces persons with factual knowledge but not with capacity to think. It teaches the details of the past but does not give directions about the future. It makes the student a mere store-house of information but with no capacity to digest them and to get benefit out of them. It trains his power of memory but not his power of understanding. In course of time, the quantity of factual information committed to memory is reduced to one tenth of what was learnt. On the contrary, education should enable a man to increase his capacity ten-fold by using what he has learnt as a student.

Education of practical value

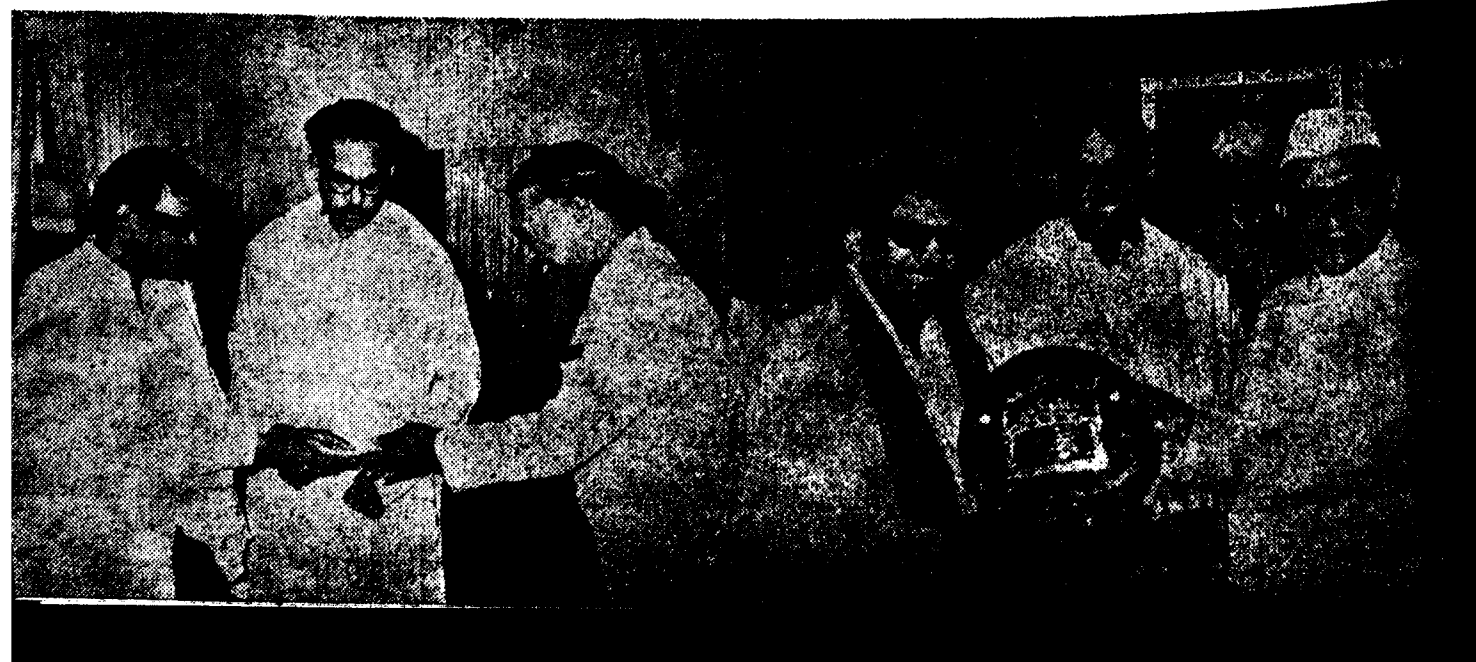
In recent times, there have been great changes in the politics, evaluations and methods of the social economic and political fields. These changes throw out several challenges; but the present-day education does not help us to meet these challenges. Education should provide us with the necessary means to satisfy our individual and general needs in the social, economic and political fields. What is important is not how much one has learnt, but how he utilises what he has learnt. What is the benefit derived by him and his country from his education? This is the burning question of today in the modern world.

Raising the standard of Education

Raising the standard of education is a subject commonly discussed and debated. The teacher plays the key-role in any system of education. To raise the standard of education, we should have teachers of high standard. At present there are no definite guide lines in the appointments of fully equipped and trained teachers. There are rules that so far as schools are concerned the graduate teachers should undergo one year training. Perhaps it would be better if similar provision is made for the teachers in the Colleges also. The Universities may examine this and make their recommendation to the Government. The admission to the Teachers' Training Course should be based on the attitude and the suitability of the candidates.

The Chief Minister handing over to the Vice Chancellor of Madras University a cheque for Rs. Ten thousand presented by the students wing of D.M.K. to institute Anna Memorial Lectures in Madras University.

Thiru K. K. Shah, Governor, Presenting a shield to the Chief Minister for having written Drama Dialogue for 'Manohara' at a function held at Centenary Hall on 12-10-73.



After constructing 50,000 tenements and allotting them to 50,000 families comprising 1.5 lakhs erstwhile slum dwellers, at a total cost of Rs. 9 crores the Tamil Nadu Slum Clearance Board is now educating these hapless families on how to live in these flats. This imaginative venture has attracted the attention of World Bank experts who want to give this as a model for slum re-housing in other parts of the World.

What is being done in Tamil Nadu under the Slum Clearance Programme does not end with merely the eradication of slums and multi-storeyed flats coming up in their places. The residents are taught to avail the sophisticated modes of living which are built into these flats. In addition, the housewife who moves into the flats is encouraged to go in for labour saving kitchen appliances and utensils.

On top of all these, arises the question whether by sheer negligence the multi-storeyed flats will once again revert to mere slums in concrete.

The Tamil Nadu Slum Clearance Board has demonstrated by word and deed that it is very well aware of these dangers and is also aware of the sociological problems of slum clearance. After rehabilitation of slum dwellers in the modern tenements, the Tamil Nadu Slum Clearance Board was posed with these problems; how to prevent insecurities, frustration and anxieties; how to improve standards of living and contended life. Anticipating the possible problems, the Tamil Nadu Slum Clearance Board decided to set up a Trust to deal with the problems.

Sponsored jointly by the Madras Christian Council of Social Service, the Tamil Nadu Slum Clearance Board and the '77' Society, the New Residents Welfare Trust, Madras was formed on December 30th, 1971. The object of the Trust is to provide expert social service and advice to families newly housed in the Tamil Nadu Slum Clearance Board Housing Projects.

VISIT OF WORLD BANK TEAM TO SLUM PROJECT

Mr. Kenneth A. Bohr and Mr. Reedfort from International Bank for Reconstruction and Development at a Day Care Centre.

THE MANAGING TRUSTEES OF THE TRUST.

Chairman ..	Rt. Rev. L. Newbiggin, Bishop in Madras.
Vice-Chairman.	Thiru Rama Aranganal, M.L.A., Chairman, Slum Clearance Board.
Secretary ..	Mr. N.I. Khan.
Treasurer	Mrs. D.L. Gopal Ratnam.
Trustees ..	Dr. M. Aantaramman.
	Mr. K.G. Veeraghavan.
	Rev. M. Azariah.
	Mr. K.R. Ramaswamy, Chief Engineer, Slum Clearance Board.
	Mr. N. Sivasenan, Secretary, Slum Clearance Board.
	Mr. D. Soundara Pandian.

WORLD BANK LOOKS INTO TAMIL NADU SLUM REHABILITATION PROJECT



NOW THEY'RE TAUGHT WAYS OF BETTER LIFE

In order to finance the trust during the year 1972, a grant of Rs. 60,430 was given to the Trust by Christian Aid, London.

For the years 1973 and 1974, a similar grant of Rs. 2,16,000 was given by the Evangelical Central Agency, Germany.

Beginning with three projects on February 15th, 1972, the work of the Trust has now been extended to 13 Tamil Nadu Slum Clearance Board Housing Projects. One Resident Welfare Officer is appointed to each newly built estate. The Trust now employs one Executive Officer and 14 Residents' Welfare Officers. (R.W. Os.) All the R.W.Os. are M.A. in Social Science.

Immunisation.

The Residents Welfare Officers arrange small pox vaccination, cholera and typhoid inoculations with the help of the Corporation of Madras and motivate the people of the area and educate people to avail this facility. In women's groups, advice is given regarding family planning and they are referred to suitable centres. With the help of German Leprosy Relief Association, leprosy diagnosis and treatment is done at Nochinagar and Thandavaraya Pillai Chatram.

Nutrition.

A survey is done of under-nourished babies and the Residents Welfare Officers advice the mothers about nutrition. It is also attempted to ensure that the Government's Bread and Milk distribution scheme is properly used by the mothers to feed only children below 6.



Women living in Slum Terenents assemble at community centre to carry out piece-work handicraft and earn during leisure time.

Young people of the areas are helped by the Residents Welfare Officers to conduct cleanliness campaigns on Sundays.

Happier Homes.

Kalyani Hospital and Rainy Hospital are running mini-health centres at Nochinagar and Cemetery Road (West) respectively and the Residents Welfare Officers help the people to use these facilities.

An Exhibition on Happier Homes was held to educate the mothers in all aspects of health and it is

proposed to hold such Exhibitions in every area. Every day 10 of the residents, who visit these exhibitions, will be given free gifts by drawing lots, to induce all of them to become aware of the requisites of Happier Homes.

(i). Pre-Schools (Day Care Centres) are run by the Department of Social Welfare for children of working mothers or children deprived in some other way. This is run in 23 centres with 60 children in each. The Department of Social Welfare is employing one Balsevika and 2 Ayahs in each Centre and providing a nutritious mid-day meal

at the cost of 20 paise per meal per day. The Residents Welfare Officers maintain cards per child regarding social development, medical aspects, etc. He extends all his assistance to the Department. Toys have been collected from many donors.

(ii) Night Schools are held for children to watch their progress in schools and help them to do their home work.

(iii) Adult education, literacy classes are being held for adult women.

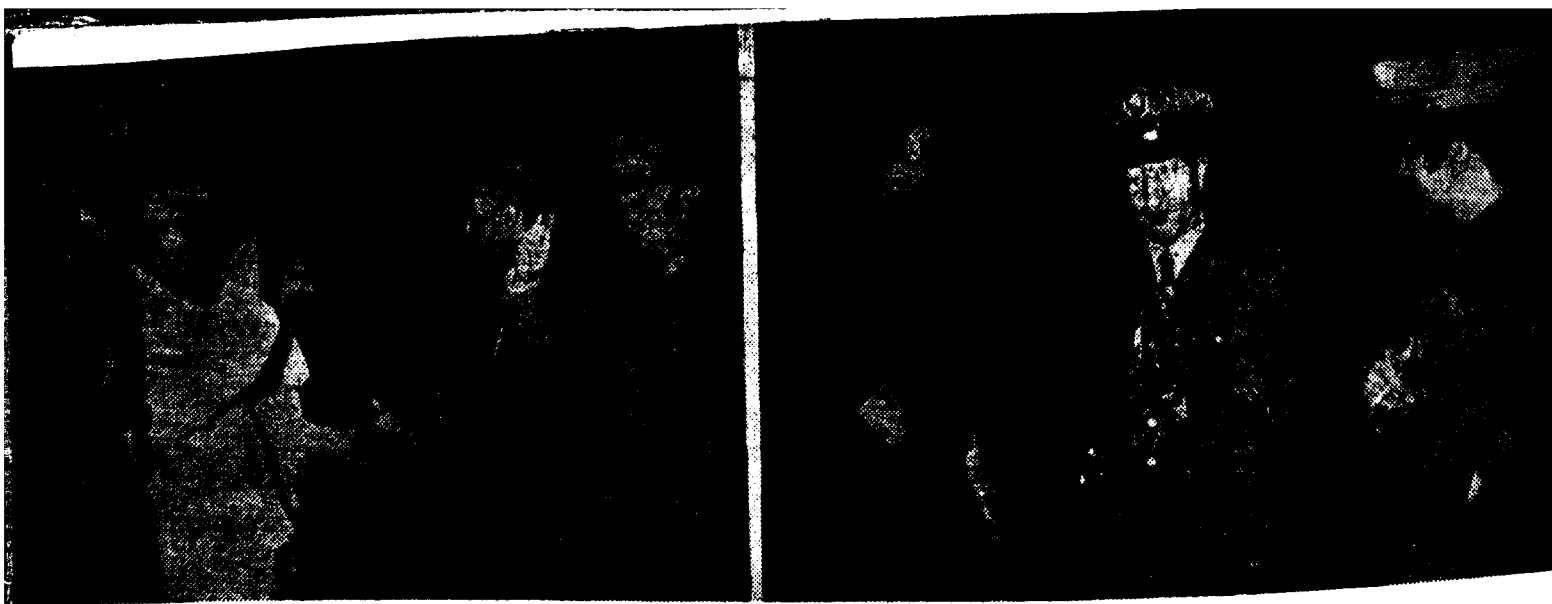
The women are taught skills to utilise their spare time profitably. Tailoring machines are provided from contributions received from Voluntary Agencies. In certain areas tailoring machines are provided with the assistance of SIDCO. Training is given free. After training, they are helped to find employment. For instance, Radha Silk Emporium have recently taken 11 women. In the community halls women, who have acquired skills, are encouraged to assemble and produce handicraft items which are collected and sold at home and abroad. Thus many residents are able to supplement their earnings.

12 women have been trained in leather batik. We have orders from Sweden, Denmark and United Kingdom. There is a move to register this as an industrial co-operative through the Department of Industries and Commerce. 50 women are being trained in Patch work and there are orders for this from Radha Silk Emporium and New Delhi.

The Resident Welfare Officers being post graduates in the Social Service have developed a cadre of local leadership in the young to initiate much needed social changes in each area. The change commences with individuals in the use of sanitary fittings and kitchen-ware and extends to influencing them towards happier home theories. In the ultimate, social cohesion and community life is built around these happier houses in all Slum Rehousing Projects. So why will not World Bank be interested in what Tamil Nadu Slum Clearance Board is doing in Madras City ?



Medical Check up in slum areas and (Top) a view of Happier Home Exhibition which evinced the attention of Chief Minister.



Top : The Wellington Staff College for Army Officers is the only one of its kind in Asia Training Cadets of all nations in military strategy. Photo taken when Defence Minister and Chief Minister visited the college last month.



Left : King Birendra of Nepal being garlanded by C. M. in Madras.

Bottom : The Ninth Beggar Rehabilitation Home was inaugurated in Deviakurichi in Salem district on 23rd October 1973 by Defence Minister Thiru Jagjivan Ram, who commended the scheme for other States in India.



A Short Resume of

THE GASTROENTEROLOGY CONFERENCE

The three-day 14th Annual Conference of the Indian Society of Gastroenterologists was inaugurated at Tamizhagam, Ootacamund, on 14th September 1973 by Hon'ble Minister for Public Health and Family Planning, Thiru K. Anbazhagan. The Minister commended the efforts of the members who had worked hard to present the results of their various pieces of research work, epidemiological and other surveys. He was particularly happy to note that arrangements had been made for a Post-Graduate teaching session following the Conference. The Minister made a strong plea to the scientists to concentrate on developing indigenous drugs, using especially the various herbs and plants of medicinal value found ubiquitously throughout India.

Dr. H. K. Chuttani, in his presidential address, gave a masterly account of the epidemiological, clinical, actio-pathological and therapeutic approach to the problem of intestinal tuberculosis in India. Referring to his own surveys, he drew attention to the fact that though tuberculosis is a very common disease in India accounting for nearly five million cases a year, little work has been done in regard to epidemiological and other surveys of the incidence of intestinal tuberculosis. Observing that even less work has been done in regard to publication of observed facts, he asked clinicians to be aware of the variety of problems presented by intestinal tuberculosis, both as regards diagnosis as well as treatment.

The scientific sessions commenced at 9 a.m. on 15th September with a high powered oration by Prof. S. J. Baker who was presented with this year's Warner Award for excellence associated with the most meaningful contribution to Gastroenterology. An Australian by birth but Indian by choice, Dr. Baker, who is more Indian than an Indian both in dress and manners, elaborately presented details of work based on personal observation made on experimental work carried out in his laboratories at the Christian Medical College, Vellore. His work included epidemiological, clinical, histopathological, biochemical and ultrastructural features which captivated the audience.

This was followed by presentation of 84 papers in the preparation of which nearly 200 men and women medical workers had been involved. The papers were spread out over five different sessions each day, held in two different halls simultaneously. Each 10 minute presentation was followed by a discussion during which many scintillating questions and answers were exchanged. In addition, a number of interesting titbits were also available. The papers related to varied disease conditions of the intestines-small and large bowel, stomach, oesophagus and liver. The honoured Guest lecturer this year

DR. R. SARASA BHARATI,
Neuropathologist,
General Hospital.

was Dr. Michael Gracy from Australia who drew attention to the effects of bacterial population on the intestinal mucosa in the aborigines in Australia. An exceedingly interesting symposium especially of current interest and value to a country with a large majority of under-nourished population, was the one on "Nutritional deficiency and the Gastrointestinal tract" which was held on the 16th. This was greatly appreciated by the members.

The Small Intestine

Nearly all aspects of the various diseases of the small intestine were largely discussed as evidenced by the presentation of 38 papers devoted to these subjects. While actio-pathology was discussed by some, the various diagnostic aids in the forms of fiberoptic-endoscopy, fiberoptic-oesophago-gastro-duodenoscopy, etc., were also discussed. Nearly 30 papers were presented on various aspects of diseases of the liver and here again newer observation, especially histopathological and biochemical were brought forward to the attention of the members.

The day concluded with a review of surgery for peptic ulcer by J. S. Shah.

Witty Answers

More scientific papers were gone through on the 17th and each

presentation was followed by many thought provoking questions and witty answers and the Chairman of the various sessions such as H. K. Chuttani, P. N. Chuttani, J. S. Shah, B. D. Pomparkar, F. P. Antia, D. V. Dutta, N. Rangabashyam, B. N. Tandon, A. K. Segha, B. J. Vakil, S. G. P. Moses, N. Vaidyanathan and E. Arthur De Sa had little difficulty in directing the sessions.

Another feature of this year's conference was the separate meeting of various special groups such as the Liver group, Intestinal groups, etc. These were meant for rather detailed discussions, exchange of views and ideas in a more elaborate and informal manner among a smaller number of participants, highly interested in a narrowed field of their speciality. This was arranged to make the discussions more meaningful than would be possible in a larger conference hall. Nearly 15 papers each were discussed in these groups and the success of these groups was largely the result of the spirit of comradeship which was present throughout.

The side-lights

The scientific sessions were relieved in the evenings with programmes of variety entertainment arranged by the staff and students of the Coimbatore Medical College. Sumptuous lunches and dinners were provided on all days by various philanthropists acting as hosts to the conferring delegates from all over India. Not to be outdone, the Ootacamund Municipal Council staged a reception for the delegates on the 16th.

The ladies had arranged interesting excursions and useful visits to places such as the Sim's Park, The Needle Industries, boating in the lake, etc., in which some of the 'men' were also found to have come over to join the fun.

An interesting as well as highly informative souvenir released on the occasion was treasured by the delegates especially from upcountry and the Conference ended on notes of high optimism and enthusiasm with a decision to meet again next year, with, if possible, answers to questions and problems raised this year.

12 KURUVAI—THE HEARTACHE

Agriculture in India is generally a gamble—a gamble with the forces of nature. This gamble is seen in all its most gruesome form in the Kuruvai rice crop of Thanjavur district of Tamil Nadu.

Down the ages, Kings and Chieftains, engineers and architects, all had done their best to ensure a fair chance to the Thanjavur farmer in his gamble against nature. Lately, it is the plant breeder who did his best for the Kuruvai crop farmer.

What is the problem so peculiar to Kuruvai crop in Thanjavur? Before knowing what the problem is, it must most firmly be told and underlined with the conviction born of experience of centuries that the Kuruvai crop of Thanjavur district makes all the difference between surplus and famine in Tamil Nadu. If this crop is successful, there is a year of plenty and if it fails, it spells famine. And how many chances are there for this crop to fail? —the dice is loaded against the farmer all the way, from the sowing to the reaping stage.

The Kuruvai is a term applied to the rice crop of Cauvery basin in Thanjavur district, sown in July and harvested in October. Sowing depends on good rains in the catchment areas of Cauvery and good storage of water in Mettur dam. Incidentally, the Mettur dam itself, though designed primarily to save Thanjavur from floods, the returns from the Kuruvai crop was a powerful argument in favour of the project. The Thanjavur Kuruvai farmer waits till water is let down from the Mettur dam and even if there is a fortnight's delay, most farmers will not sow because the rains of North-East Monsoon will interfere with harvest, threshing, etc. Thus, though the Kings and chieftains, the engineers and architects had done their best, the farmer is given barely 120 days to sow and reap the Kuruvai rice crop. And the rice crop needs 110 days!

And what is so fearsome about the October rains of North-East Monsoon that strikes terror in the minds of Kuruvai farmer? Flow irrigation is practised with a

HARVEST

vengeance in Thanjavur district. The river Cauvery is made to flow over the entire delta with the result that every bit of land in Thanjavur delta tract is wet—soaking wet—wet with 140 days of flow through a maze of canals, miles and miles of it running through the delta. The October rains induced by North-East Monsoon drips in a constant downpour accompanied by high winds and a pall of cloud. The wet land starts flooding after the least bit of rain, the rain never stops and the sky is overcast for days together. The Kuruvai farmer could not dry his paddy or thresh it; nor could he transport it for de-husking.

At this stage, the plant breeder gave a helping hand to the Kuruvai farmer by means of adaptive research. First, he gave the high-yielding ADT-27. When it was found that the wet conditions tended to "lodging" near harvest time, he gave a mutant plant which was both non-lodging and high-yielding in "Karuna", a mutant of ADT-27 and IR strain coming to harvest in 108 days, leaving him a margin of a fortnight between letting out of water from Mettur Reservoir and the onset of North-East Monsoon.

The Thanjavur Kuruvai crop now runs into 9 lakhs tonnes grown on 6 lakh acres leaving a marketable surplus of 3 lakh tonnes. A large number of mechanical driers have been installed in the district. If the State has turned the corner in its food resource, it is not a little due to the fact that much of the gamble in Kuruvai harvest has been removed by painstaking skill. Much remains yet to be done. For one thing, there is the Rs. 50 crore scheme for modernising the delta channels of Cauvery river. This scheme has attracted World Bank assistance as it has been commended by many visiting Teams of Experts. The State Government is however proceeding with the work pending flow of World Bank assistance.

Procurement of paddy is effected by Food Corporation of India and

the State Civil Supplies Corporation. The F.C.I. has 100 purchase centres in various parts of the district, apart from 15 mobile purchase units while the State Civil Supplies Corporation has 175 centres and 20 mobile purchasing units in the district. The two organisations will mop up most of the marketable surplus each spending Rs. 12 crores roughly. Due to the abolition of levy system, private agencies are also eager to make purchases though the magnitude of the purchase by Governmental agencies coupled with the announcement of a higher procurement price of Rs. 70 per quintal left the private agencies very little strangle hold on the Kuruvai Farmer. In fact, the situation this year is one which ensured a fair deal to the farmer by forcing traders to offer fair remuneration for a produce which has come to the market after so much of anxiety. With three agencies, i.e., the F.C.I., the State Civil Supplies Corporation and private trade making purchases, there is little evidence this year of distress sales so common with Kuruvai paddy because of monsoon conditions, hampering with drying operations.

By systematic policy of rice procurement, the Government of Tamil Nadu has built up a stock of foodgrains, i.e., rice as well as coarse grains and millets which enables the State to flood the market at any time when food prices are seen to be on the increase. This year the State was also in a position to supply foodgrains at pool prices to several States all over India. The chief recipients are:

1. Kerala .. 121,000 tonnes rice.
2. Gujarat .. 6,000 tonnes rice and 16,000 tonnes millets.
3. Mysore 5,000 tonnes rice and large quantities of millets.
4. West Bengal. 3,000 tonnes rice.
5. Maharashtra. 11,500 tonnes rice and 5,000 tonnes millets.

Between the years 1967 and 1973, total food grain production in Tamil

Nadu has risen from 54.58 lakh tonnes to 72.02 lakh tonnes; the increase in production has been more striking in rice which during the same period increased from 38 lakh tonnes to 59 lakh tonnes.

The following are some of the letters of thanks received by Tamil Nadu acknowledging foodgrains supply:

Mysore Chief Minister thanks Tamil Nadu Chief Minister for supply of paddy

The Chief Minister of Mysore Thiru D. Devaraj Urs has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Chief Minister of Mysore says, "You had been kind enough to release 5,000 tonnes of paddy in Tamil Nadu for conversion and consumption in Mysore State. I am grateful to you for coming to our assistance at a moment of great difficulty. Your help is most timely and will do much to meet the needs of our people in Mysore State".

Maharashtra Food Minister thanks Tamil Nadu Chief Minister for supply of paddy

The Food Minister of Maharashtra, Thiru Sharat Pawar has written a letter to the Chief Minister of Tamil Nadu expressing his thanks for the supply of paddy.

In his letter the Food Minister of Maharashtra says, "I am extremely grateful to you and the Government of Tamil Nadu for having kindly agreed to supply 10,000 tonnes of paddy to Maharashtra. I am also thankful for having consented to the purchase of 5,000 tonnes of bajra and maize in the open market by Maharashtra".

Top: Thiru Sharat Pawar, Maharashtra Food Minister called on Chief Minister on 8-10-73.

Middle: Thiru Narendra Singh Zaiti Gujarat Minister for Civil Supplies with Chief Minister on 17-10-73.

Bottom: Dr. Gopal Nagn, West Bengal Minister for Labour with his Tamil Nadu counterpart on 9-10-73.



The Madurantakam Co-operative Sugar Mills Ltd.
PADALAM P.O., CHINGLEPUT DISTRICT.

- (1) Series of failures we encountered
In developing cane for our survival;
We surmounted all in a decade
With a solemn purpose of serving the Nation.
- (2) By fleet of lorries well organised,
We bring the cane fresh from the field.
We ensure supply of inputs,
And prompt in payment of cane price.
- (3) We enforce measures of Plant Protection
And conduct crop Competition.
We take our growers on Tour Education
And teach them to grow quality cane.
- (4) Every succour in hour of need
We extend to members who really need.
Working in the Co-operative Sugar, we greet
To consolidate the gain we already made.

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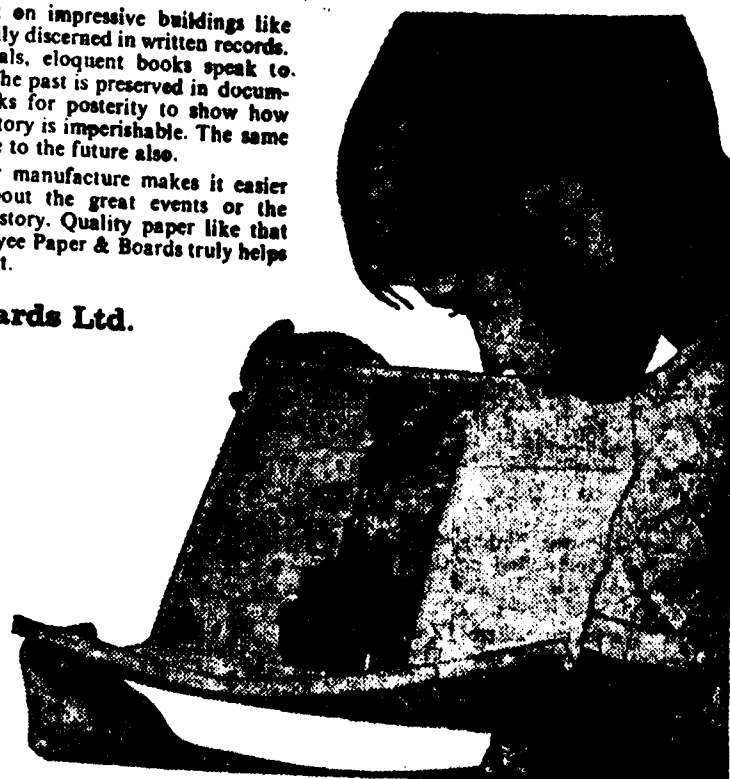
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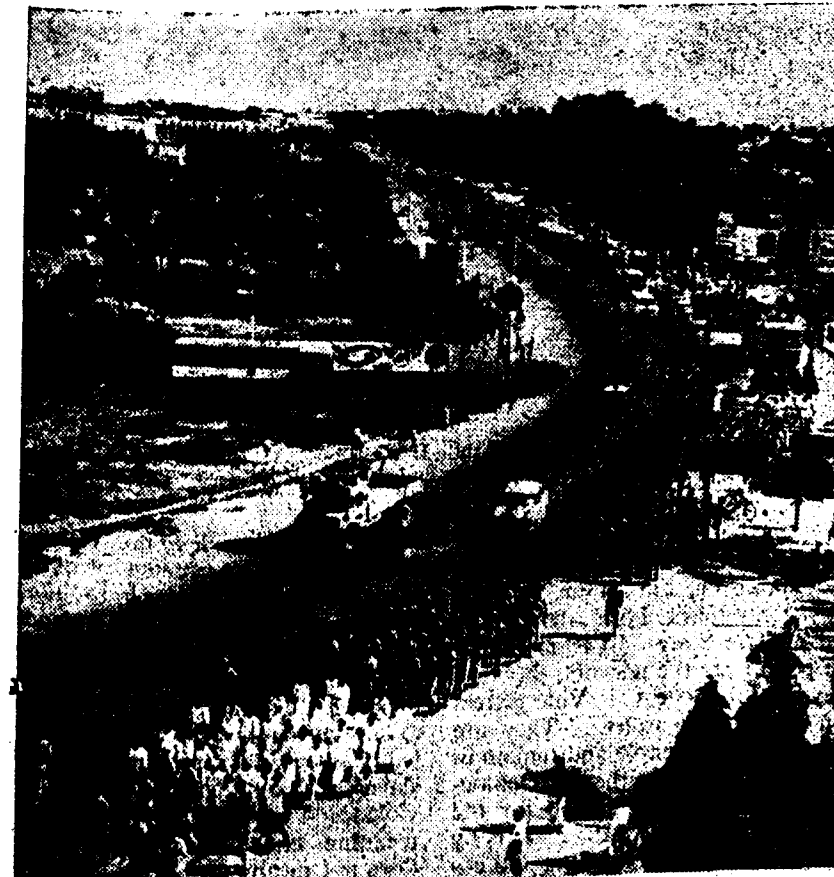
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TAMIL NADU IS

IN TUNE WITH GANDHI

GOVERNOR'S TRIBUTES ON GANDHI JAYANTHI CELEBRATIONS



Top:—The panoramic view of the procession of JOTHI conducted in connection with the Gandhi Jayanthi Celebration in Madras.
Bottom:—The scene at the start of JOTHI from Gandhi statue at Marina Beach

Every year we are reminded of the charismatic personality of Mahatma Gandhi, his mission and his message, as we celebrate Gandhi Jayanthi through the length and breadth of India. From whatever I have seen and felt in Tamil Nadu, I can say with confidence that Tamil Nadu is entirely in tune with Gandhian philosophy and approach to social, economic and political issues. What strikes me most is that the Government, the public and the leaders of all parties vie with one another in celebrating the occasion in a magnificent manner. This is indicative of their firm faith in the ideals that Gandhiji preached. This massive demonstration of faith in Gandhiji's philosophy will, I am sure, herald a new era in public life, where leadership will depend upon capacity to serve the masses, ability to take work from equals and anxiety to judge issues on merits.

The Gandhi Mandapam is humming with activity because it is in tune with the desire of the people to understand, appreciate and apply Gandhian philosophy and adopt Gandhian approach in the solution of our national problems. The seminar that is proposed to be held in connection with the Gandhi Jayanthi Celebrations at Gandhi Mandapam covers a wide range of subjects pertaining to Gandhiji's views on several matters of public importance and eminent persons will focus attention on the fundamental teaching of Mahatma Gandhi.

What's Missing ?

What we are missing today is a concerted effort to interpret Gandhiji to younger generation and to put up a fight for norms in public life. Mahatmaji insisted upon not only "ends being pure" but the "means also being pure" because he was aware that unless purity of means was insisted upon, weaknesses inherent in the diversity of India like communal, linguistic, religious and regional differences

would be exploited. Instead of making efforts to seek unity in diversity, they would play upon these inherent differences for their personal ends. He insisted upon being a giant amongst giants because he knew that bossism was likely to prevent growth of personalities of individuals and thereby stunt the growth of India. Under him Jawahar could grow and Rajaji could work, Sardar and Subhash with all their differences in approach could take pride in accepting his leadership.

We have yet to learn the art of seeking solutions within the inherent limitation of diversity, geographical, linguistic, etc., and benefit by the vast opportunities that the size and the climate of the country provide. There is no other country in the world which can be self-sufficient. India can not only be self-sufficient but her diversity can provide enough material to search for solutions for the benefit of the mankind. What is needed is a composite out-look and cosmopolitan approach. The movement we form the habit of judging issues by the same yardstick that we want others to adopt, our problems will be over.

What Price Democracy ?

Democracy thrives only when people believe that they cannot grow unless people around them grow that they cannot benefit at the cost of others, that people cannot be fed on slogans, that discussion and compromise are the essence of a co-operative way of living, that the collective will of the people should always prevail over factional calims, that public life is an instrument of service to the common man and not an opportunity for promoting self-interest, that real statesmanship consists in clearing confusion and establishing rule of reason and not in creating confusion and exploiting narrow selfish ends. Gandhiji strived to inculcate these basic virtues of democracy and unless Gandhism again catches the public mind and pervades the length and breadth of India, democracy will flounder. Gandhiji stood for, lived for and died for the welfare of the masses. That which ensured good for a few at the cost of the good of the vast masses created vested interests and eroded the sound basis of a welfare State.



Thiru K. Anbazhagan, Minister for Public Health, receiving the Gandhi Jothi at Gandhi Mandapam on 2nd October 1973.

Let us be clear about the Ram Rajya which Gandhiji expounded throughout his life time. Ram Rajya combines both democracy and welfare State. In Ram Rajya, the people are the masters, because they are the voters. Vote getters can never be masters. They are servants of the people and remain in power till they serve them. Democracy prescribe norms both for the electors and the elected. It is by their mutual understanding and co-operation that democracy is sustained. A serious obligation is cast on the welfare State to look after the lowest in the rung on the priority basis. Unless the common man in the lowest rung is raised and is provided with opportunities for self-expression and self-development, the base of democracy will be eroded by frustration. We have to make it convenient for the vast masses of people to make democracy a way of living. Their social and economic backwardness should not be allowed to be exploited. A perpetual dual between the virtues and weaknesses of democracy provides opportunities for demagogues to make people captives of slogans. The moment people surrender their reasoning the momentary impulses of frustration, weaknesses creep in. We have to guard ourselves against exploitation of any sort, consistent with the spirit of Ram Rajya.

Gandhiji's principle of non-violence needs to be interpreted properly. Why did Gandhiji stick to non-violence to the last? It was intended to prevent dictatorship. Democracy and violence internally cannot go together. Gandhiji's non-violence did not mean cowardice but it instilled courage and wiped out traces of slavery. Gandhiji defined "non-violence" as a "dynamic condition meaning conscious suffering". "It does not mean meek submission to the will of the evil-doer." He went further to say "Non-violence is not a cover for cowardice, but it is the supreme virtue of the brave. Exercise of non-violence requires far greater bravery than that of swordsmanship".

Proper Interpretation

The significance of the path of Truth advocated by Gandhiji has to be clearly understood. He insisted upon the right means to be adopted to secure right ends and attached greater importance to the means than to the ends. Truth ensures purity of means. In this age of mass media of communications, extreme care has to be taken to see that they are not converted into instruments to mislead the people. They must be utilised to keep the people well informed so that the people may not be deceived by wily politicians. Newspapers, films,

posters, books, column writers, leaders, politicians and platform speakers have to see that the creditability gap does not widen.

Socialism which ensures equality of opportunity is recognition of the dictum that "collective strength is always superior to individual strength". However powerful, the leadership may be and however rich a few men might be, no country can successfully compete in the world unless it has the widest base and its collective resources expand continually. This calls for hard work on the part of all sections of society. The days of a few rich living a life of luxury with their unearned wealth are gone. Concentration of economic power will be a danger to democracy. It is to avoid this contingency that planning should be from the bottom and the people in the lowest rung of the ladder have to be given top priority. Gandhiji wanted to wipe every tear from every eye.

Healthy Leadership

For building up healthy leadership and for sustaining it at all times, we have to remember that Gandhiji pleaded for tolerance at all levels,—religious, social and political. He clearly felt that evolution of democracy is not possible if we are not prepared to hear the other side because if intolerance becomes a habit, we run the risk of missing the truth. We have therefore to cultivate tolerance and also an ability to benefit by criticism. These two cardinal principles, which contribute to healthy leadership, strengthen the base of democracy. Equality of opportunity and recognition of talent, irrespective of pulls of patronage or power should be ensured. No society can survive unless it accepts and adheres to a moral base. It is socialism which provides a moral base. What is duty in religion becomes moral in socialism. To Tamil Nadu goes the credit for having created conditions in which Gandhian ideals of Ram Rajya, Truth and Non-violence, Democracy and Socialism can flourish and prosper.

If anybody asks us, "what is Indian Economy?" we give the reply 'It is mixed economy', meaning that it does not belong to any ideology and that it envisages the co-existence of public sector, joint sector, private sector, and so on.

My answer is that "Sarvodaya" is the real name of our economy and this concept was given by Mahatma Gandhi. This is an all comprehensive term, embracing many sectors and suited to our national genius. This is our distinctive contribution to economic thought.

Welfare of all

Sarvodaya means welfare of all. In essence, this consists of making the village the central focus of all planning and developing an industrial pattern which would revolve round the rural economy, rather than the other way round where the villages function as mere satellites of the adjacent urban areas. Sarvodaya ensures social justice, equality of opportunities and all-round development. The core of Sarvodaya is self-reliance and self-confidence.

Mahatma Gandhi's approach to rural economy and rural development, starting from the village as the basic unit, not only shows the path of self-reliance, but also strengthens the democratic fibre of the people. Soon after attaining freedom, we took up democratic decentralisation to strengthen the grass roots of democracy. Panchayat Raj and the Gandhian Sarvodaya present a purposeful and meaningful combination which makes our democracy unique in that the stress is on evolution and not on revolution. It is this combination which gives content to our democratic socialism. This system is backed by the sanction of the people and eliminates violent class struggles.

The people in the highly advanced and civilised countries are tired of their affluence, based on their cut-throat competitive economy and sophisticated ways dictated by a permissive society. India shows a way of life based on sobriety and simplicity, detachment and altruistic values without discarding, at the same time, the benefits of science and technology. Our democratic socialism is an eye-opener for the world, rooted as it is in Sarvodaya.

Gandhiji was a pragmatist. It was to give work and wages to the starving millions that Gandhiji started the Swadeshi movement and adopted khadi, hand-spinning and charka which are the symbols of self-reliance and self-help. It paves the way for economic freedom and equality. This approach of Gandhiji

caused misgivings in the mind of some that Gandhiji was totally opposed to science, but how could he have announced a prize of a lakh of rupees for the invention of a charka based on an improved technology suited to the village conditions in India if he were opposed to total mechanisation.

Gandhiji was unique in devising means and methods calculated to achieve simultaneously a number of objectives. His concept of education was so perfect that at every stage it nurtured the concept of casteless society, emotional integration and self-employment. His constructive programme was a unique instrument of Sarvodaya and public relationship. It enabled him to establish closest links with the people, helped the country to build up the economy of the poorest man and without creating tensions, brought about equality. On the one hand, he preached the ideal of trusteeship and on the other, insisted upon rural reconstruction. He converted weaknesses of wealth into virtues of democracy by simple living, service of the lowest and by exalting dignity of labour.

Let us return to Gandhiji and carry him to the younger generation. That is the only way to peace and prosperity.

WELFARE FUND FOR BEEDI WORKERS

The State Labour Ministers met to review the progress made in implementing the decision taken in January that the existing wages be raised to Rs. 3.25/3.50 for rolling 1,000 beedies without prejudice to the higher wages already prevailing in some States or areas.

It was explained at the meeting which was presided over by the Hon. Union Minister Thiru K. V. Raghunatha Reddy, that the decision had been implemented in most of the States including Tamil Nadu. Thiru Reddy told the meeting that he would pursue the matter with the remaining States.

The meeting also discussed the question of setting up a welfare fund for beedi workers to be financed by the levy of a cess on tobacco, and also of providing more stringent penalties under the Minimum Wages Act. The question of fixation of fall back wages was also discussed.

GANDHI | A WORLD LEADER

In a speech delivered at Gandhi Mandapam, Guindy during a symposium organised there on 5th October 1973, as part of this year's Gandhi Jayanthi Celebrations, Tamil Nadu Governor Thiru K.K. Shah said :

To describe Gandhiji as a world leader is neither an exaggeration nor an epithet chosen by blind followers. It is universally acknowledged and lovingly recognised. The Charter of the United Nations Organisation calls upon people all over the world to promote social justice, ensure better standards of living and secure freedom of action. This World Charter also reaffirms faith in fundamental human rights, in the dignity and human worth of a person, in the equal rights of men and women and of nations, large and small. A world where no country is subject to the tutelage of another is the goal of the Charter. Threat or use of force is to be avoided. Long before the United Nations Organisation came into being and gave its Charter, Mahatmaji asserted the dignity and worth of the human person and started the first passive resistance movement "Satyagraha" in South Africa at the beginning of this century. Gandhi believed that the weapon of truth, if firmly grasped and purposefully used, could lead to peaceful change without resort to violence. This was indeed one of the great ideas of our century which makes Gandhiji a world leader. The eminent British Historian Arnold Toynbee gives his impartial judgment in these words : "Gandhi was as great a benefactor of my country as he was of his own. Gandhi made it impossible for the British to go on ruling India, but at the same time, he made it possible for them to abdicate without rancour and without dishonour.



Thirumathi Madhuben K. Shah, presenting the awards to the winners in the oratorical contest held at Gandhi Mandapam on 7th October 1973 conducted in connection with the Gandhi Jayanthi Celebration.

Gandhi's objective was to raise the spiritual level of life in a spiritual slum—the slough of politics. Gandhi waded into the slough showed how the slough could be purified and remained personally uncontaminated by his immersion in it. This gives the measure both of Gandhi's own spiritual statue and of the magnitude of his service to mankind at a turning-point in human history.

Our plans have not fulfilled our expectations because we have started from the wrong end. Industrialisation on the basis of democratic socialism was exposed to weaknesses inherent in both the systems. Mixed economy made us victims of either concentration of wealth or of poor productivity as neither the employer nor the employees could be persuaded to co-operate for higher productivity resulting in rapid multiplication of resources. Gandhiji's concept of self-sufficiency of village economy based on planning at village level was intended to bridge the gap between the urban area and the rural area and to put local resources to maximum advantage. It would have ensured decentralisation and developed a co-operative base.

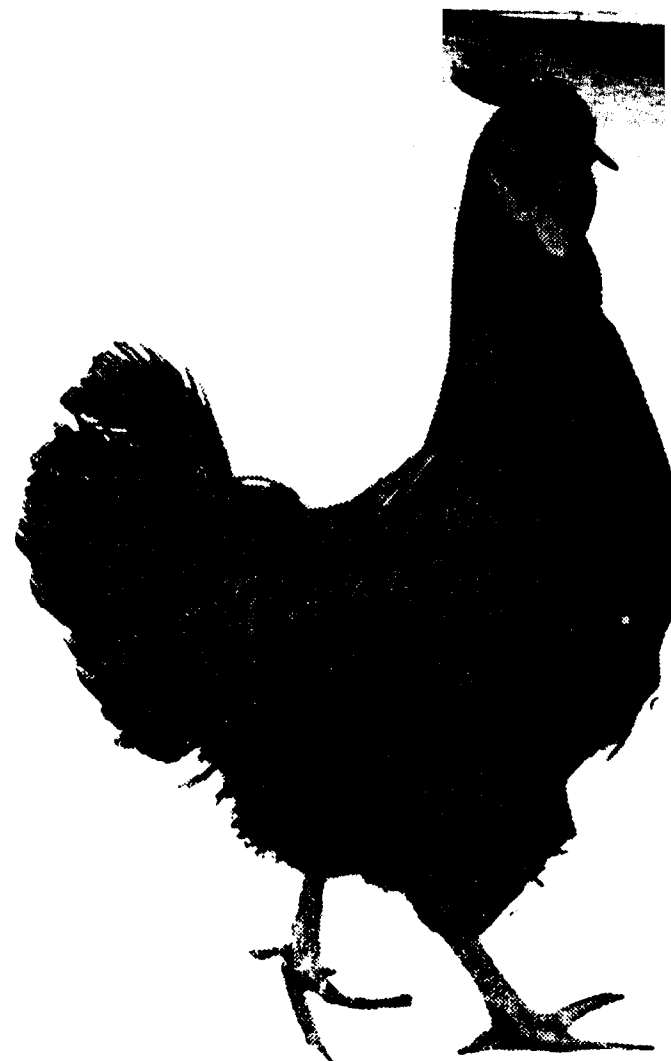
The subjects that are being discussed at the seminar are of particular value to a nascent democracy and a developing economy like ours.

I have every hope that this Seminar will succeed in suggesting ways and means which can correct imbalances and lead us to Gandhian path.

Bold Leadership

Crippled by mounting costs of defence weakened by jealousies and pressures of balance of power and worried by rising frustration, India, even with the dynamic and bold leadership, finds it very difficult to overcome internal pressures, sectional interests and to concentrate available resources for fighting poverty. With his usual wisdom, Gandhiji foresaw the inter-play of these national and international forces and the weaknesses and provided for collective strength being built up by first looking after the weaker sections spread all over the rural area and securing the welfare of the urban area by preventing the exodus and pressures on the urban area.

Gandhiji's concept of Gram Raj and villages being made self-sustained economic units, either singly or in a group, had a sound basis and great political wisdom. He was touched to the quick when Lionel Curtis described our villages as "dung-heaps" and was bent upon turning them into model villages. "India lives in her seven



Australorp breed is being developed for wide distribution as its eggs are brown in colour.

Hy-line, Rani Shaver, Arbor Acre are the talk of the day among the Poultry farmers of India. In the farmers' language they are high yielding strains with a productivity of 250 to 280 eggs during the first year of lay. Besides they mature early by 20 weeks and have a layer house livability 90 to 95 per cent.

These high yielding strains are in fact 'hybrids', i.e., cross between two pure strains or lines which by themselves are high yielding. The hybrid progeny have a superior performance than their best parent stocks. But they do not breed true. When the males and females of those hybrids are mated they produce offspring which are worse than their parent and even the grand parent stock.

Strains.—The pre-requisite for producing hybrids is high yielding strains and lines which breed true. When the females and males of a strain are mated the progeny very much resemble the parents in their performance traits such as livability, egg yield, efficiency of feed conversion, egg size, etc. According to the definition of the American Poultry Breeders Association a

'strain' is a closed flock of birds with inbreeding and selection for particular trait or traits for a period of five generations and given a name. A strain is always qualified by the degree of performance in respect of the economic traits. Why do strains breed true? The answer to this question is not very simple.

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Professor of Animal Genetics,
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Gene the determinant of character.
—A new individual develops from a single cell, 'zygote', formed by the union of the 'sperm' the male sex cell and the 'egg' the female sex cell at the time conjugation. This single microscopic cell has in it concealed the latent potentialities of the future grown up adult, whether it is going to be large or small, black or white, high or low yielding. Microscopic examination of the cell reveals thread like structures in it known as 'chromosomes'. The number of chromosomes is constant for a

EVOLVING SUPERIOR STRAINS FOR HIGH EGG PRODUCTION

given species 23 pairs for men and 39 pairs for poultry. Chromosomes are in pairs. The members of the pair are identical in shape and size. In poultry, therefore, there are 39 pairs or 2 sets of 39 each. One set is the contribution of the father through the sperm and the other set that of the mother through the egg. The father and mother contribute equally to the heredity of the off spring.

Further studies reveal that each chromosome has in it a number of factors. "genes", arranged in a linear order. The corresponding member pair has the same number of genes arranged in the similar order. A pair of genes, of which one the contribution of the father and other contribution of the mother, determine a particular character.

Causes of variation in a character.
The pair of genes which determine a character may be identical or one of them might be slightly different in its chemical structure, when it is called a mutant gene. When they are identical in an individual we call it homozygous (AA) for the character when dissimilar we call it heterozygous (Aa).

One of the special and natural phenomenon that laid the foundation for the science of heredity is that these two factors (genes) functioning together throughout the life of the individual, segregate in a pure form at the time of gamete (sex cell) formation and one each is assorted to any of the gametes. The gametes contain one half the number of chromosomes found in the body cell.

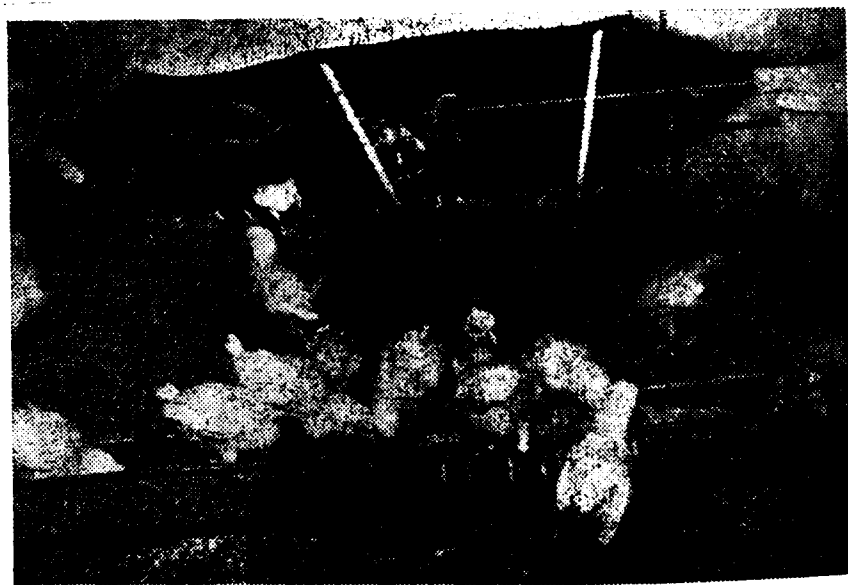
A homozygous individual will produce only one sort of gametes, but a heterozygous individual two sorts of gametes. Let us take a male and a female both homozygous for the same character, the gametes from them will be all alike and the offspring born of their matings will be similar to those of parents.

Suppose the parents are heterozygous for the character, there will be 2 kinds of gametes in the male and 2 kinds of gametes in the female. During fertilisation there is the possibility of 4 kinds of zygotic combinations and three kinds of individual AA; Aa; aa;

Thus heterozygosity leads to variation in character in the offspring and homozygosity leads to uniformity and predictability of character in the offspring. Homozygous individuals breed true. Heterozygous individuals do not breed true.

A high degree of homozygosity in these loci in the parents leads to a greater uniformity and high degree of heterozygosity in parents leads to variability in the offspring. Strains are highly homozygous for the traits under selection and this is the cause for their breeding true.

Victoria breed cock and hen.



Heat is essential for growing chicks and it is provided by means of electric lamp.

Breeding for high homozygosity—High homozygosity means a large number of loci have similar genes at each locus. This is attained by mating individuals which have similar genes, i.e., mating related individuals. Full sibs (brother and sister) have similar genes since they had their inheritance from the same parents. It can be mathematically stated that 50 per cent of the total number of genes in their body are similar. If we mate these full sibs there is the probability that half of the fifty per cent of the genes at least will become identical, i.e., 25 per cent of loci will become homozygous. Continued full sib matings will lead to further increase in homozygosity in each successive generation and the 10th generation 88.6 per cent of the loci become homozygous. This we call as highly inbred line. Mating of less closed related individuals e.g., half sibs, second cousins or distant relatives, leads to slower rate of inbreeding. It takes a longer time to attain a high degree of homozygosity.

Close inbreeding leads to homozygosity of both good and bad genes that exist in the foundation flock. The precaution to be observed in such mating system to develop high yielding strains to have the foundation flock with merit about average of the population and make rigorous selection for the traits.

The situation can be compared to a bag containing a mixture of silver and gold coins. When it contains 70 gold and 30 per cent silver coins, suppose you start blindly picking up two at a time. The chances of picking 2 gold coins are greater than when the bag contains 30 per cent gold and 70 per cent silver coin.

Hybridisation—When we cross two individuals which are highly homozygous each for different sets of genes

say BB and bb, the resultant offspring will be heterozygous Bb and this is called a hybrid. Sometimes this has a better performance than either of the parents. This phenomenon is called 'hybrid vigour'. The more the lines are inbred, the greater will be the heterozygosity of the hybrid and larger the hybrid vigour. Before we could understand the reasons for this 'hybrid vigour' we have to have a knowledge of the kinds of gene action.

Kinds of gene action—There is a strain of mice called the 'pygmy'. The trait is due to a pair of genes pp. The pure strain of normal mice is PP. The pygmy weighs 19 grams at birth and the normal variety 20 grams. A cross between the two, which is heterozygous (Pp) weighs 15 grams. This may be graphically represented as follows:

Normal Cross Pygmy		
Scale of merit		
PP	Pp	pp
20	15	10
Actual weight (in g)		
+5	0	-5
Gene value.		

Here the gene 'P' adds a value of 5 g. 'P' takes away a value of 5 g., a combination Pp results in the addition of this kind of gene action is called 'dominance' 'P' is dominant over 'P'.

Imagine a situation where the heterozygous individual weighs 25 grams the positions of the three individuals will be:

Pp	Pp	Pp
25	20	10
—6		

Here the heterozygote is much superior to the best homozygote. This kind of gene action is called 'over dominance'.

Just as genes at one locus interact to produce an additive action, dominance or over dominance, genes at one locus can interact with genes at another locus to produce similar results. There can be two loci interaction, three loci interaction and much complicated interaction of genes at many loci.

The economic traits like egg yield, egg size, etc., are controlled by genes at many loci. The kind of gene action is mostly additive and to a small extent dominance and overdominance also play a part.

Hybrid vigour is mainly due to the phenomenon of 'over dominance' a kind of gene action where heterozygote is superior to either of the homozygotes. It may also be due to a lucky combination of genes at one or more loci which occurs in specific crosses.

Producing hybrids—The prerequisite for producing hybrids, as has already been stated is highly inbred lines with high degree of homozygosity. Lines are developed from high yielding strains. Strains are less inbred than the lines, but more inbred than the individuals in the population of the breed.

A high yielding strain is developed from a foundation flock of a large number of birds say in hundreds, which have a higher average merit than the average of the breed. Usually it has a reasonable degree of variability. To illustrate let us say the average of the White Leghorn breed in Madras City is 140 eggs per annum. The foundation flock for developing the strain should have an average of, say, 180 eggs with a range from 140 to 230.

Closing of the flock for breeding purposes, standardisation of management and rigorous selection of breeding stock for high production in each generation, will result in a strain in a period of five generations or 7 to 8 years.

When a strain is well established further selection yields less and less response. Further improvement can be achieved only by a genetic analysis of the population, measurement of the kind of gene action, additive and dominance available and adoption of suitable breeding procedures.

The next step in this direction is development of highly inbred lines.

The strain birds may be divided into small families say of one cock and 10 hens and each is closely inbred by continued full or half sib mating until a high degree of inbreeding is attained. The greater the inbreeding the more advantageous would it be for investigation and progress.

There is no mixing of families; We need to have 50 to 100 lines. Many of the lines may die out during this process due to the phenomenon of 'inbreeding depression' which is the opposite of 'hybrid vigour'. When several lines are established, we resort to crossing between the lines and record of performance of the line crosses or hybrids.

For easy illustration let us begin with five lines and name them numerically as 1, 2, 3, 4 and 5. All possible crosses should be made among these lines, such as 1×2; 1×3; 1×4; 1×5; 2×3; 2×4; 2×5; 3×4; 3×5; and 4×5. The performance of each cross, the egg yield etc., is measured and tabulated as follows:—

Performance of the cross (Annual egg yield)					
	1	2	3	4	5
1		×	×	×	×
2			×	×	×
3				×	×
4					×
Total					965
Average of a single cross					193

The amount of additive gene action is measured by the general combining ability of the lines. The general combining ability of line 1 is indicated by the average performance of line 1 in its crosses with the rest of the lines. Similarly the general combining ability of line 2 is measured from the average of line 2 in its crosses with the rest and so on. This is illustrated in Table-1.

TABLE-1
General combining ability of the lines.

Line	Average no. of eggs per annum in all crosses.	Rank
1	200	3
2	205	2
3	210	1
4	180	4
5	170	5
Grand average		193

We find from the table that line 3 has the best combining ability with the rest; Next in order lie lines 2, 1, 4 and 5. If it is desired to improve the strain further lines 3, 2 and 1 can be pooled and bred together to form the improved strain. 4 and 5 may be discarded for this purpose.

Choosing lines for hybridisation—In this experiment, suppose lines 3 and 5 have given an average of 250 eggs per annum and it is the highest in all the crosses; Then there is something in this cross which results in a specific combination of genes leading to high yields. This is the specific combining ability of the two lines 3 and 5. This is capable of repeatability of performance as long as lines 3 and 5 are kept pure,

Line 3 × Line 5
(230)/(235)
Hybrid
(250)

Similarly we can have a 4 way cross based on the experimental results as follows.

A × B C × D Grand parent
lines (230) / (235) (240) / (245)
H1 × H2 Parent lines.
(250) | (255)
Hybrid
(280)

Conclusion—From the foregoing account one can understand how tedious and costly will it be before we can strike at the valuable hybrid chicken. It is a team work of scientists and it involves costly computer analysis of data. Arbor Acre, Hy-line, Rani Shaver are the results of hard work of entrepreneurs with lot of capital sunk in the business. Can our farmers afford to do the job? What the farmers are not able to do the Government should come for the assistance as in case of many other costly public undertakings. It may be questioned whether we cannot take advantage of the work already done by such big business concerns as the Unichick, Hy-line, etc? Yes, we can, provided we can afford to pay heavy prices for the chicken, permit the flow of capital to foreign companies and be perpetually dependent on foreign firms for our poultry business. If we can make it cheaper and competitive why not we make a try right now and immediately. I am fully confident that we can produce the hybrids for India by employing our capital and scientists.

Layers need airy, well ventilated and cool houses for efficient production. Each fowl should be provided a minimum of 3-4 square feet of floor space. The comfort zone for maximum production is from 60° F to 70° F. (15.5° C to 21° C).

Location.—The house should be located in an elevated ground with well drained soil, which will prevent stagnation of water and dampness.

(ii) Shady trees and green turf around the house will keep the house cool, and avoid the radiation heat.

(iii) The house should be at a reasonable distance from operators residence for all day efficient management.

Design of construction.—Poultry houses should be simple in design and cheap in construction, using the locally available materials. The long axis of the building should be oriented towards north-south, to remove much of the adversities of sun's rays in the morning and afternoon. It must be rat proof.

Foundation.—The foundation trench should be 1.5' in depth and 1.5' in width. Over 6" depth of brick and mortar or brick and cement foundation, a 9" foundation wall should be constructed to a height of 1.5', i.e. 6" above the ground level. Over this 4½" wall to a height of 1½" should be constructed all round. The height of the eave from the ground level is 6' and at the ridge it is 8'.

Wall.—The space between the wall and the eaves should be covered with ½" to 1" chicken wire mesh.

Roof.—The roof should be made out of light roofing material, asbestos or aluminium sheet. The height of the roof at the eaves and at the ridge can respectively be 6' and 8'.

Flooring.—A good concrete flooring is essential for the poultry house. Deep litter should be 6" thickness and it should be dry by periodical racking. Saw dust, wood shavings, paddy hulls, groundnut husk and chopped sugar cane tops can be used as littering materials. In general 3 to 4 square feet floor space can be provided for each layer.

POULTRY HOUSING

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Accommodation facilities are more important than anything else to get the best of results from Poultry Farming. Simple in design and cheap in construction, the long axis of poultry houses should be oriented towards north-south so as to remove much of the adversities of the sun's rays in the morning and afternoon. Above all, it must be rat-proof.

Lighting.—A 40 watts electric bulb for every 200 square feet floor space fixed at a height of 6' will provide the needed light for the night feeding.

Equipments :

(a) **Feeder.**—The feeder may be of the linear or circular type. It can be made out of wood or metal. The space requirement are as follows :—

Linear feeder.	Circular feeder.
3"-4"/bird.	1' to 1½' dia.
	1' for every 20 birds.

(b) **Waterer.**—Automatic water trough either a linear or circular type can be used. It can be made out of metal, polythene or cement-concrete. Each bird must be given 1" watering space (linear type) or one 18" diameter waterer for every 50 birds. The waterers, feeders should be protected by grills.

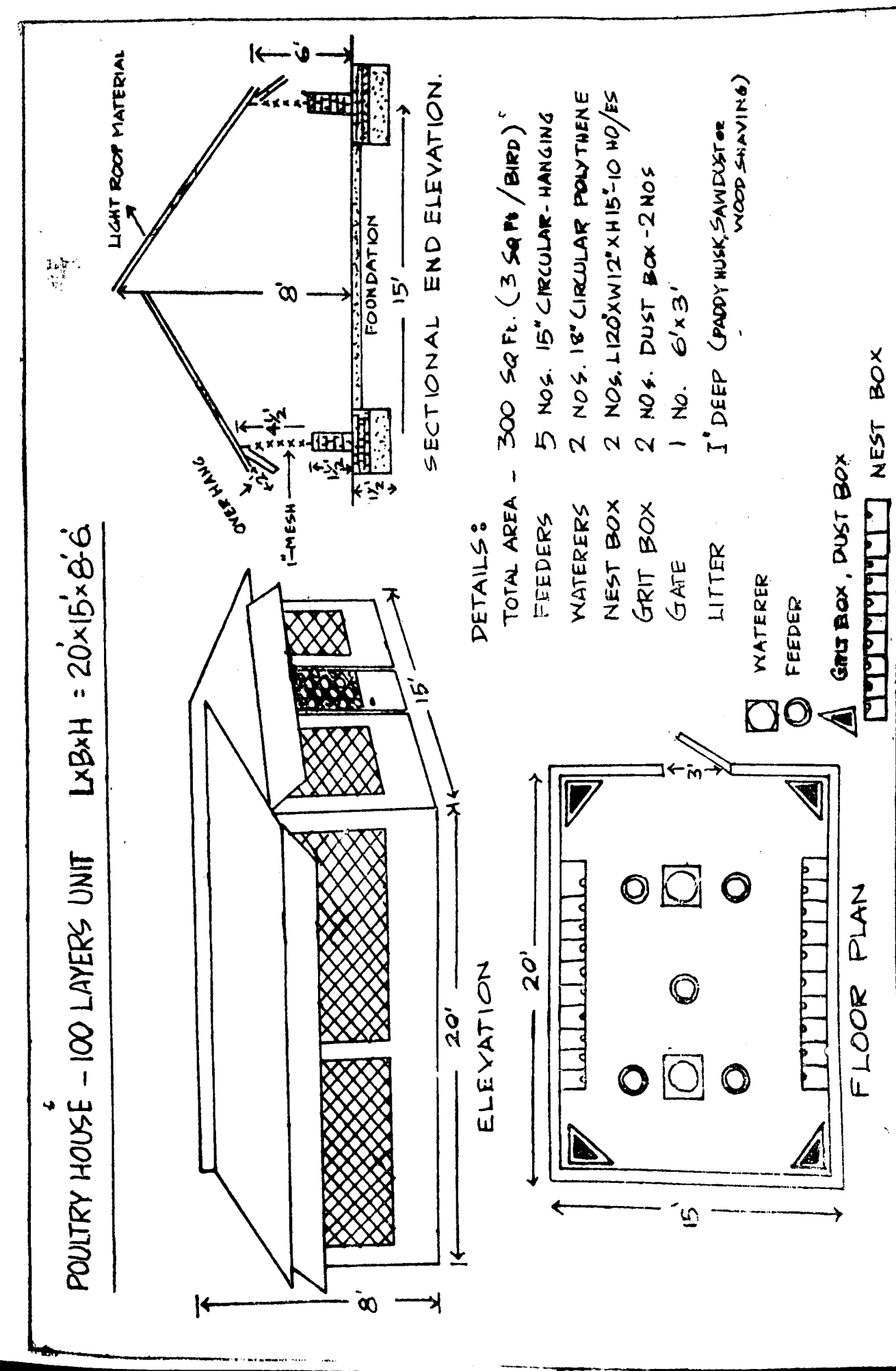
(c) **Nest boxes.**—These have to be used for collecting clean eggs without damage. Every five birds must be given one individual nest box or one community nest box for every fifty birds. It can be made out of wood or metal. Individual box is of 15" × 12" × 15" and community nest box is of 1' × W × H — 5' × 2' × 15".

(d) **Perches.**—These are fitted for giving comfort and roosting facility for the birds. Each perch should be made of hard strong wood of 2" × 1½", with edges rounded off and fixed at a height of 10" from the floor. Each bird must be given 6" — 9" of perching space.

(e) **Grit box.**—A small wooden or metal box containing shell grit should be provided at the rate of 1 for every fifty layers.

(f) **Dust bath.**—It is preferable to avoid ectoparasites by providing dust bath made out of wood or metal, filled with ash or sawdust suitably medicated with D.D.T. or Gamexane.

Suitable layer house plans for 10 back-yard layers, 50 and 100 layers unit in deep litter houses are given separately.



BACKYARD POULTRY KEEPING

Of late, thanks to the scientific method followed in poultry-keeping, it has become a paying hobby to those who are interested in it. But backyard poultry keeping demands from those engaged in the line extra amount of delicate and diligent care in the matter of collection of eggs from poultry homes in time and storing them in proper place, etc.

By

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Poultry-keeping in backyard is an useful and interesting hobby. It pays to keep a few fowls in the house, whether one is in the town or in the village. It involves a little cash investment and the home can make use of the products. The hens may be sheltered in a house of 6' x 3'. This small house can be located in any place in the open near the house or in the garden. One can even rear small sized flocks on the terrace of the house. Eggs in excess of the household requirements can be sold and this could provide the petty cash needed for the day-to-day expenses. It is at the same time educational and very much absorbing to care and manage your own birds and reap the harvest of the labour at home. Children will find it a pleasure to tend to the fowls.

Materials needed for the construction of house

The house can be of 6' x 3' dimensions. About 3' to 4' height from the flooring the house must be covered by wooden planks. Deep litter system of rearing can be followed. The planks needed for the house can be got from old unserviceable dealwood boxes. Flooring can be covered either by wooden planks or with 16 gauge wire mesh. If the flooring is covered by wire gauge the house can be kept in the garden. The droppings can form good manure. Just below the house a pit of 6' x 3' should be dug so that the droppings fall in it. The droppings should be covered with ash or saw dust periodically to prevent fly nuisance. Round the poultry house keeping of ornamental floor pots gives an added attraction. If one keeps the poultry house in the verandah the flooring material should be of wooden plank. Saw dust or paddy husk to about 6" can be laid to form the deep litter.

Materials —

Wooden reapers—
6' x 3' x 3' — 4.
6' x 3' x 2' — 4.
3' x 3' x 2' — 4.
Light roofing — 6.
3/4" gauge wire netting — 20.
Nails, hinges, padlock, etc.

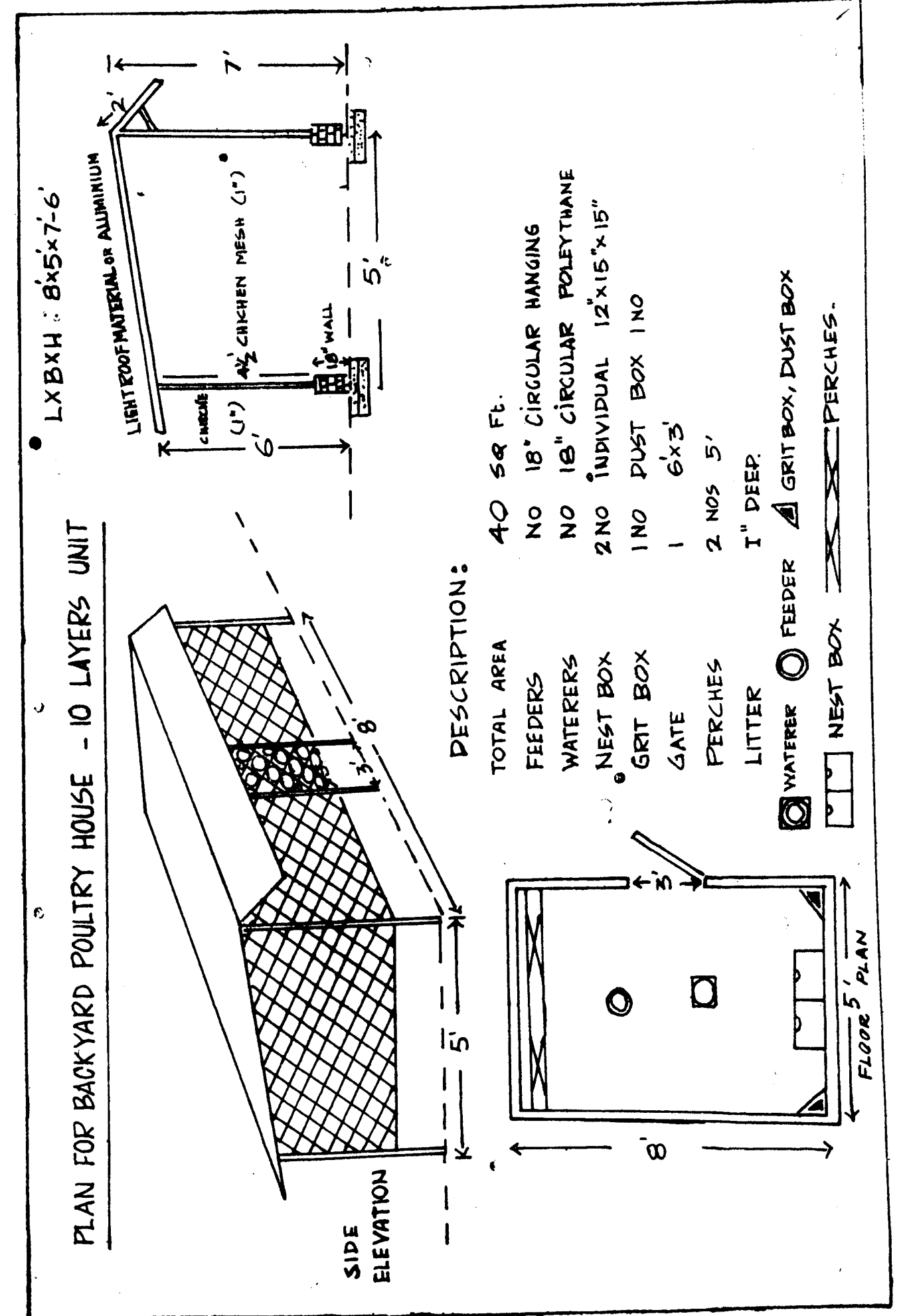
It is advisable to get 8-12 week old birds to start the farm of this

nature. These birds obtained from a Government farm or from recognized and reliable private farms are protected against all contagious poultry diseases and as such there may not be any difficulty in rearing them.

The pullets come to lay from about 20-22 weeks of age. It is profitable to maintain them for one year of laying. Usually the performance in the second year falls by 15-20 per cent compared to the initial year of lay. Normally, white leghorns lay about 15-18 eggs in a month. The receipts from the eggs thus, at 30 P. egg works to Rs. 4.50. The birds ordinarily consume about 3.33 kg. feed in a month. The cost of feeding a hen at Re. 0.75/kg. of feed will come to Rs. 2.47. The feed requirements can be obtained from the Government feed mixing units if near by. Shell grit in a box of 6' x 6' x 6" must be made available to the birds to avoid thin shelled eggs. To improve the quality of the yolk and egg greens at the rate of 50 gm. per bird need to be given. Ordinary kitchen garden greens can be made use of. Raddish leaves and leaves from the drum-strick trees form excellent substitutes.

The eggs laid during the day must be frequently collected from the poultry house, to avoid breakage and soiling of the eggs. Eggs are to be stored in a cool airy dark place. Eggs stored properly keep well for more than 5-6 days. Excess eggs above the household requirements may be disposed of then and there.

If those who are maintaining small poultry flocks will handle them more carefully and efficiently and thus increase their contribution to the food supply and those who do not now have poultry will obtain and properly care for small flocks, the total effect will be substantial.



MEYER STRAIN HYBRIDS

Poultry breeding has of recent times become a specialised industry. Years of research and labour has made it possible to produce fowls of superior productive capacity in regard to the number and size of eggs, as well as a better return from the investment. Under reasonably favourable conditions and with proper management, care and attention, it is possible to attain excellent return in proportion to the outlay. Commercial hybrids are being extensively used for their superior performance than the pure breeds. The results have been achieved after years of toil by adopting the correct genetic approach and proper breeding methods. Such attempts in the past have yielded valuable strain crosses like the Rani shavers, Babcocks, Dekalb, Hyline, Arbor acre, etc. These highly developed hybrids are capable of laying on an average of 200-250 eggs annually.

These hybrids are the results of extensive research in foreign countries and are available only from these sources. To get these birds into our country, we have to spend a lot of foreign exchange. Added to this, each of these hybrids sexed chicks cost more than Rs. 3-50. Further, these birds can be profitably reared for the first year of laying only. Another draw back in rearing these chicks is that they won't breed true. The performance of progeny is most unpredictable. This fact is well understood by the research workers. One is obliged to get his replacement stock every year

from the source from which he obtained it. The strain itself is kept as a trade secret for obvious reasons, by the commercial agencies. It is also noticed that many of these hybrids are more prone to Avian Lucosis Complex, a disease in the layers which throws a challenging preposition to the poultryman.

Considering these facts and with a view to be in a position to help the farmers who need pultry which can be obtained at reasonable rates and also be propagated, the Departments of Genetics and Poultry Science at the Madras Veterinary College, started research in evolving our own strain of white leghorn breeds. White leghorn bread of fowls are known for their egg production. By proper selection and in breeding different strains and ines can be developed. Two such strains when crossed give the progeny which are the hybrids. The singular achievement of Madras Veterinary College in evolving a pure strain of white leghorn birds gives a great opportunity to propagate this strain at a comparatively low cost to the poultry breeders. A sexed day-old chick in the Government farms cost only Rs 1-50. Added, this strain being a pure strain unlike he commercial hybrids, can be

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bred and propagated by the breeder. Thus, the breeder is in a position to meet his replacement stock at his farm itself. The performance of this strain of Mayer compared to many commercial hybrids have shown very feavourable results and throws up vast scope for utilisation. The average performance of the 'Meyer' strain birds under various private breeders and Government farms is given in the Table below.

Certain important characteristics of the 'Meyer' strain are—

- | | |
|---------------------------------|--------------|
| (1) Age at first egg | 155 days |
| (2) 50 per cent egg production. | 183 days |
| (3) Annual egg production. | 200 |
| (4) Mortality rate 0-20 weeks. | 12 percent |
| (5) Mortality rate 20-72 weeks. | 11-9 percent |

The achievement in developing a strain of our own, which can compare well with any other strain in this breed needs to be widely made us of to reap the benefits of the efforts over the years. The Government of Tamil Nadu is taking the necessary steps in this direction. Further, development and improvement of various strains of birds in the poultry farms are also going on simultaneously. Attempts are being made to evolve a strain cross hybrid of our own for the State.

COMPARISON BETWEEN MEYER STRAIN AND OTHER HYBRIDS.

Strain.	Flock number.	Number of birds.	0-20 weeks liability. (per cent)		Age at first egg. (per cent)	
			Range.	Mean.	Range.	Mean.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Meyer	5	514	91-99	96.2	145-169	155
Hybrids A	6	2,054	77-99	94.4	140-152	147
Hybrids B	2	260	75-81	78.8	134-142	138
Hybrids C	2	1,060	90-92	91.6	132-149	141
Hybrids D	1	638	..	83.5	..	134
Age at 30 per cent lay. (per cent)			20-36 weeks production of eggs.			
			Hen day basis. (per cent)		Hen housed basis. (per cent)	
			Range.	Mean.	Range.	Mean.
(8)	(9)		(10)	(11)	(12)	(13)
Meyer	170-176	174	..	75	..	69
Hybrids A	158-190	175	56-100	75	54-89	67
Hybrids B	152-168	160	50-77	64	49-77	63
Hybrids C	174-185	180	62-65	63	57-63	60
Hybrids D	..	162	..	71	..	70

POULTRY KEEPING

From time immemorial Poultry keeping has been a practice among farmers in our State. Many people keep a small flock of chickens for the pleasure or as a source of steady income. Many others, though having an interest to venture on this subsidiary industry, hesitate to do so for lack of proper knowledge on the know-how of rearing poultry. The cost of initial investment, tackling the managerial problems, etc., tend to puzzle a beginner.

It is advisable to start on a small scale. A start can be made by maintaining 100 layers.

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Reader in Poultry Science,
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Madras.

These 100 birds can be accommodated and reared in an area of 300 square feet. The land selected must be preferable on an elevated place where there can be no stagnation of water. A house for 100 birds can be easily be constructed using mostly the locally available material. The details of the materials that may be needed has been furnished below.

'Meyer' strain chicks from the Madras Veterinary College, or any of the commercial hybrids can be selected for the flock. It is economical to go in for the sexed female chicks, so that unnecessary rearing of the male stock can be avoided. Birds can be reared on the 'Deep litter' system of management, which is one of the best systems. Deep litter system reduces the labour cost. Chicks come to lay after 5 months of age. Hens lay best in the first year of lay. The economics of rearing 100 layers is given in detail. A profit of nearly Rs. 12 per bird per year is expected under average farming conditions.

The materials used in erecting a house for 100 layers in Madras.

Bricks	2,500.	Rafters	12' x 4' x 3"—6.
Cement	10 bags.		12' x 3' x 2"—8.
Sand	3 cart loads.	Reapers	2' x 1/2"—250.
Earth	3 cart loads.	Light roofing	—68.
3/4" wire net	180 feet.	Light roofing for ridges	—10.

ECONOMICS OF A 10 LAYER UNIT.

Strain of birds : White Laghorn Meyer.
System of Management : Deep litter system.
Stock : 1 to 2 day old sexed female chicks.

I. Cost upto point of lay—		Cost.
1. House (5' x 6') at Rs. 6 per sq. ft.	.. .. .	180-00
2. Equipment—		
Hover, 1 number	.. .. .	10-00
Feeder, small 1	.. .. .	12-00
Feeder, big 1	.. .. .	25-00
Water Troughs, small 1	.. .. .	10-00
Water Trough big 1	.. .. .	15-00
		72-00
3 Chicks 12 numbers at Rs. 2 each	.. .. .	24-00
4 Feed at 9 kg. per chick up to 20 weeks at Re. 0-90/kg.	.. .. .	97-20
5 Medicines	.. .. .	2-50
6 Litter materials— 1 bag of paddy husk	.. .. .	2-00
7 Miscellaneous expenditure	.. .. .	5-00
		382-70

Maintenance

II. Cost for Layers—		
1 Equipment—Nil.		
2 Feed 40 kg./bird per year at Re. 0-90/kg.	360-00	
Greens at Re. 0-02 per day	7-20	
Shell Grit 2 kg./bird/year at Re. 0-30 per kg.	6-00	
	373-20	373-20
3 Miscellaneous	5-00	
		378-20

35

Receipt —

By sale of	640.00
1 Eggs at 200 average hen boused prodn. (10×200 = 2000 at 32 Ps. each.	
2 Birds at Rs. 5 each for 9 birds	45.00
3 Manure	2.50
4 Gunnies at 0.75 each	9.30
	<u>696.80</u>

ECONOMICS OF A 100 LAYER UNIT

Strain of birds :—Commercial Hybrids
System of Management :—Deep litter system.
Stock :—1 to 2 days old sexed female chicks.

Cost.

Cost upto point of lay—	
1 House 300 sq. ft. (30'×10') (light roofing) at 6 Rs./sq. ft.	1,800.00
2 Equipments :	
0-4 weeks—	
Hover 1	30.00
Feeders 4	48.00
Water Trough 2	20.00
5-10 weeks—	
Feeders 4	72.00
Water Troughs 2	30.00
11-72 weeks—	
Feeders 4	100.00
Shall grit boxes 2	10.00
	<u>310.00</u>
	310.00

Net Cash income

Expenditure—	
1 Cost of chicks	24.00
2 Cost of feed for chicks	97.20
3 Medicines	2.50
4 Cost of Litter	2.00
5 Miscellaneous	5.00
6 Cost of layer feed	373.20
7 Miscellaneous exp.	5.00
8 Depreciation at 20 per cent in buildings..	36.00
9 Depreciation at 20 per cent in equipments.	14.40
10 Interest on investment at 7 per cent rate.	26.80

Total expenditure 586.10

Chicks at Rs. 3.50 each 112 numbers	392.00
Feed at 9 kg. per chick upto 20 weeks at 50 per/kg. (112×9×90).	907.20
Medicines	25.00
Litter materials 10 bags paddy husk	20.00
Miscellaneous Expenses	50.00
	<u>3,504.20</u>

2-72 Weeks expenses—

Feed 40 kg./bird/year at 0.90 kg.	3,600.00
Shell grit at 2 kg./bird/year at Rs. 0.30 P./kilo ..	60.00
Miscellaneous expenses	50.00
	<u>3,710.00</u>

5 Receipts—

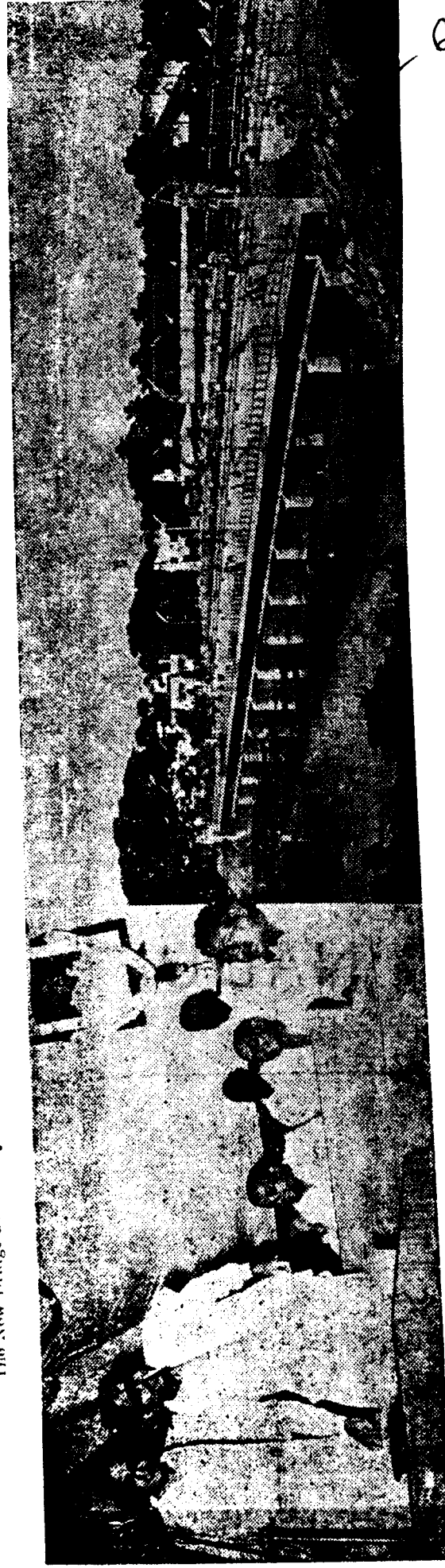
By sale of	
Eggs (at 200 eggs per bird and at) 0.32 per egg ..	6,400.00
Birds after laying year at Rs. 5 each for 85 pullets ..	425.00
Manure	30.00
Cost of gunnies 60×1.50	90.00
	<u>6,945.00</u>

Net Cash Income

Expenditure—	
1 Cost of chicks and cost in rearing up to 20 weeks ..	1,394.20
2 Maintenance of layers	3,710.00
3 Depreciation on Building at 20 per cent (1800×2=360).	360.00
4 Depreciation in equipments at 20 per cent Rs. 310. ..	62.00
5 Interest on investment at 7 per cent	205.28
	<u>Rs. 3,504</u>
	5,731.48

Net income=Rs. 1,213.52.

The New Bridge across Adyar named Thiru V. Ka. Bridge was declared open 20.10.73. This forms a fast link to Mahabalipuram Tourist Traffic.



CO-OPERATIVE MARKETING AND PROCESSING IN TAMIL NADU



The Minister for Food and Co-operation, Thiru Mannai Narayanaswamy, is seen going round the Exhibition conducted by the Kanchipuram Taluk Co-operative Society. Thiru Shanmugam, District Public Relation Officer, standing behind the Minister, is seen explaining the exhibits to the Minister.

The Co-operative marketing in this State is a two tier one, with the Tamil Nadu Co-operative Marketing Federation at the State level and 132 Primary Co-operative Marketing Societies at the taluk level. The Thanjavur Co-operative Marketing Federation at Tiruvarur is the only district level Co-operative Marketing Society.

In order to augment the working capital of the Co-operative Marketing Societies, the State Government have participated in the share capital of Co-operative Marketing Societies up to a maximum of Rs. 1 lakh each in the case of Primary Co-operative Marketing Societies and without limit in the case of higher level societies. So far, they have participated in the share capital of 121 societies to the extent of Rs. 96.80 lakhs. A sum of Rs. 13.00 lakhs is expected to be contributed during the year 1972-73.

The Co-operative Marketing Societies are also provided with managerial subsidy towards employment of the staff for a period of 3 years on a sliding scale. To encourage quality grading activities, financial assistance is given by way of subsidy to the extent of Rs. 7,500 (i.e. Rs. 2,500 towards the cost of trading equipment and Rs. 5,000

towards the cost of grading staff) spread over a period of three years.

With a view to encourage the Co-operative Marketing Societies to undertake outright purchase of produce on a large scale, Government contribute to the Special Price Fluctuation Fund of the societies at 2 per cent or 5 per cent. So far, a total sum of Rs. 1.75 lakhs has been contributed by Government to the Special Price Fluctuation Fund of the marketing societies. A sum of Rs. 1.67 lakhs is expected to be given in 1972-73.

Under the scheme of assistance for technical and promotional cell, Government are subsidising the cost of a Chief Accounts Officer, Civil Engineer, Marketing Officer, Chief Fertiliser Officer and a Processing Engineer employed by the Tamil Nadu Co-operative Marketing Federation on a tapering scale. The Tamil Nadu Co-operative Marketing Federation has also created a common cadre of personnel for being lent to the affiliated Co-operative Marketing Societies to work as secretaries or managers.

A value of agricultural produce handled by co-operatives which stood at Rs. 500 crores in 1971-72, rose to Rs. 20.70 crores in 1971-72.

Assistance has also been given by way of share capital contribution and loan for the setting up of processing units such as decorticators, rice hullers, oil mills, tapioca and pineapple processing units as adjuncts to Co-operative Marketing Societies. The following table indicates the processing units owned by Marketing Societies and under installation :-

Serial number and type of units.	Number of units.
1 Cotton ginning units	18
2 Goundnut decorticators.	25
3 Oil expeller	7
4 Rice hullers	31
5 Coffee curing plant.	1
6 Solvent extraction plant.	1
7 Fruit processing unit.	1
8 Tapioca processing unit.	1
9 Cardamom oil extraction unit.	1
10 Pineapple processing unit.	1

under installation.

Civil Supplies Corporation

The Civil Supplies Corporation is taking over all the Modern Rice mills run by Co-operative Marketing Societies and Thanjavur Co-operative Marketing Federation. The Tamil Nadu Co-operative Marketing Federation has prepared project reports for the establishment of a cotton seed oil mill and a groundnut oil refinery complex. It has also obtained the feasibility report for the setting up of sun flower seed oil extraction plants. The Government have also entrusted to Messrs. Development Consultants, the preparation of a feasibility report in connection with the establishment of a Farmers Co-operative Paper Mills. The Tamil Nadu Co-operative Marketing Federation has installed a granular fertilizer plant at Man-nargudi at a cost of about Rs. 25 lakhs. During 1972-73, it produced 18,476 tonnes of granulated fertilizers up to 31st December 1972 valued at Rs. 147.97 lakhs. The Tamil Nadu Co-operative Marketing Federation is also making arrangements for the early completion of a cold storage plant at an estimated cost of Rs. 9.00 lakhs with assistance from the National Co-operative Development Corporation.

Rice Bran Oil mill.

In order to make profitable use of the bran obtained from the Rice Mills in Thanjavur district in the

manufacture of rice bran oil which is a by-product capable of fetching foreign exchange, the Thanjavur Co-operative Marketing Federation has established a Rice Bran Oil Mill at a cost of Rs. 19.75 lakhs with the Government assistance of Rs. 14.81 lakhs.

Construction of Godowns

The National Co-operative Development Corporation has formulated a scheme for the construction of godowns under the Central Sector Scheme. Under this scheme, the National Co-operative Development Corporation provides financial assistance to the extent of 62½ per cent of the cost of loan to the State Government outside the "State Plan". The State Government have to meet the balance of 37½ per cent of the cost as subsidy under the State Plan Scheme. During the year 1972-73, financial assistance is proposed to be given under this scheme for construction of 360 village level godowns of 150 tonnes capacity each and three marketing godowns by the Tamil Nadu Co-operative Marketing Federation Limited, the capacity of the godowns ranging from 500 to 1,500 tonnes each. The scheme will be continued in 1973-74 also and when completed will add to 1.17 lakhs tonnes of storage capacity.

The Tamil Nadu Co-operative Marketing Federation in all the districts except Thanjavur and the Thanjavur Co-operative Marketing Federation in Thanjavur district purchase and distribute non-pool fertilizers through the co-operative marketing societies and the village credit societies. The co-operatives distributed pool and non-pool fertilizers to the value of Rs. 14.28 crores in 1970-71, Rs. 17.17 crores in 1971-72 and Rs. 11.12 crores (up to 30th September 1972) in 1972-73. Now they have been entrusted with the distribution of fertilizers to farmers in toto.

In order to provide the Tamil Nadu Co-operative Marketing Federation and the Thanjavur Co-operative Marketing Federation with necessary margin money for undertaking procurement and distribution of fertilizers, Government have given financial assistance by way of share capital contribution to the two institutions to the extent of Rs. 79 lakhs up to 1971-72. A further sum of Rs. 15 lakhs is likely to be given during 1972-73.

Promotion of Industrial Peace— Government Policy

Inaugurating the 11th Annual Conference of the Officers of the Tamil Nadu Labour Department, the Hon'ble Labour Minister Thiru K. Rajaram said that the Tamil Nadu Government had taken steps for the welfare of the working class outside their places of work and providing amenities to them apart from those they were entitled to under statutory regulations.

The Minister said that the Government's policy was to preserve and promote industrial peace and create a congenial climate in which industry can flourish and labour prosper. Government also wanted to secure the effective implementation of labour laws without distinctions between the private sector and the public sector.

He hoped that the new Labour Welfare scheme would improve the health and living conditions of the working class. The Tamil Nadu Labour Welfare Fund Act, which came into force from January 1, 1973 was enacted with a view to achieving the objective.

Regarding the difficulty experienced by conciliation officers in contacting the concerned officials in public sector undertakings for the settlement of industrial disputes in those undertakings, Thiru Rajaram said that to tackle this problem it was agreed at a recent meeting of heads of public sector undertakings that an officer of sufficiently high status, who could either take decisions or could obtain and convey immediately the decisions of the heads of these undertakings, should be deputed to attend the conciliation talks before the Officers of the Labour Department.

Government had sanctioned the creation of three Labour Legal Advisory cells in Madras, Coimbatore and Madurai to advise workers and small trade unions on the procedure to be followed for redress of their grievances and for securing relief. Each cell was to be manned by a retired judicial officer with experience of adjudication of industrial disputes and a retired Labour Officer.

The role of Co-operative Banks in the operation of kindling economic progress has now a days increased in Tamil Nadu. One among the chief example to be illustrated in this context is Ramanathapuram Co-operative Central Bank which took an active participation in financing for the prosperity of agriculture and hand-looms in its area. The bank has paid its attention in the fields of expanding production, control of prices and equal distribution of money among the public.

To cite an example of its efficiency, during 1920s, the bank was started in the name of Sri Villiputhur Co-operative Bank and extended financial help to Sri Villiputhur and Sathur Taluk Co-operatives alone. Gradually it has surrounded all the taluks within the jurisdiction of Ramanathapuram. Its golden jubilee in 1971 and the inauguration of its new office building were held on a grand scale.

Apart from other activities of the bank, the banks regular functions like operation of Fixed Deposits, Recurring Deposits and Savings Deposits, the bank attracts the customers by offering higher interest rates. The deposits position has been trebled during the past one decade; the assets of the bank itself is a proof to show the growing confidence of the public with the

Thiru N. V. Natarajan, Minister for Backward Community, is seen inaugurating the City cleaning campaign near Anna Statue on 21 October 1973.



THE SERVICE OF CO-OPERATIVE BANKS

bank. The deposits now have mounted to Rs. 315.12 lakhs which itself is authentic proof of the efficiency of the bank.

The villager receive the loans through Co-operative Societies as short-term and medium term loans for conducting agricultural activities. The amount of loan to be given is decided according to the size of the land and the method of cultivation. Not only that, these banks go in for a detailed estimate regarding the quality and variety of crops. To illustrate with an example if suppose a farmer owning four acres of land and if he wants to cultivate paddy he will be given Rs. 1,200 i.e. Rs. 300 per acre.

The bank, in this current financial year has decided to lend out Rs. 380 lakhs as short-term loan and Rs. 5 lakhs as medium term loans and in this respect the bank has so far lend out Rs. 33.93 lakhs and steps were taken seriously to distribute the loans as quickly as possible.

Through this process the bank facilitates small scale and large scale

farmers with finance. Not only that, it also extends its warm helping hands to the already indebted farmers and they receive their loans at a lower rate of interest compared to some other financial institution.

The bank's activity never ceases with agriculture alone but also premeated through handlooms sector also. The bank uses Co-operative Societies as an instrument through which the loans are distributed to the weavers. This operation leads not only to the expansion of production but also giving employment opportunity to the weavers.

There are about 68 weaver's Co-operative Societies functioning throughout the district. The bank took a special interest in weavers welfare and so it keeps a vigil on the master weavers to see that they pay normal wages to the weavers. In some cases it encourages the weavers by giving wages direct.

The bank lends money to the Co-operative Milk Societies and facilitates the individual man to join the Co-operative Societies and helps to buy milch cows. Every Co-operative Milk Society helps at least 100 individuals to buy cows for themselves and provide a permanent income of Rs. 50 every month. Through this operation the bank indirectly provides part-time job for the rural folks.

A simple illustration can explain how the bank's operation is successful and efficient in triggering the economic activity. Virudunagar Co-operative Milk Society earned a huge profit and through that receipts it has started one Boarding house which provides sumptuous food and tiffin to the public and it is also running in profit.

This bank, like any other bank provides its customers a quick transaction of bills, cheques and drafts and at a lesser commission compared with other banks. Now it has nearly 28 branches working all over the district.

Agricultural Growth In Area Development

P. Selvaraj, M. Soundappan and S. Varadarajan.

Department of Agricultural Economics, Tamil Nadu Agricultural University, Coimbatore.

In the course of development, it is observed that countries inevitably face regional inequality. A study by the United Nations Economic Commission for Europe observed: "The regional inequalities have been diminishing in the richer countries of Western Europe and the tendency has been the opposite in the poorer ones". Our own experience here in India is in no way different. We find developed areas to co-exist with pockets of poverty. Fruits of planned progress have not been equally shared by all the regions of the country.

Even within a State and a district, we find areas of progressive and less progressive development. Continuously growing disparity in the levels of living and size of income between different areas of the same country is a cause for concern. Deliberate economic policy and concrete expression of the same in the governmental activities can help removal of these inequalities. A progressively greater geographical dispersal of economic activity must be pushed as hard as possible.

It is in this context that the approach of 'Area Development' and the concept of growth centres have assumed significance. In this approach of Area Development, regional disparities can be easily identified and suitable localised development planning can be encouraged to remove the same. In this paper an attempt is made to list out the factors that generally contribute to regional inequalities and to develop a working tool to measure the same. Identifying and measuring the regional inequalities, is the first requisite for any concrete planning in this direction and this paper is just the first step in this direction.

The disparity in the living standards of the population in various areas of the nation stems from different economic and climatic factors:

Economic Factors

(a) Proportion between growth rates of industrial and agricultural production.

(b) Proportions between productive and non-productive spheres of the population.

(c) Development of a network of infrastructure facilities and social amenities within an area.

Natural Factors

(a) Differences in the natural resources between areas.

(b) Differences in the human resources between areas.

Identification of a backward area is a prerequisite for planning area development. There are many indices that can be used to measure regional prosperity. An obvious one is per capita income which is a favoured measure in developing countries. The other indicators are standard of living and economic and social overheads. The level of economic development of an area can be measured by certain specific indicators.

Socio-Economic Ranking Of Areas.

There are also some multiple criteria methods of socio-economic ranking for identifying socio-economic disparities among rural areas. The application of criteria in aggregate is more advantageous over single criterion method.

Three sets of data are to be collected from the areas by surveys. The indicators of (a) average household income (b) literacy percentage of the population and (c) percentage of population employed in various walks of life constitute the raw socio-economic scores for a particular area.

The overall socio-economic score can be calculated

areas from the standardised socio-economic scores. It is nothing but the arithmetic mean of the standardised income, education and occupation scores.

Lorenz Curve.

The areas can be arranged in ascending order of average per capita household expenditure. The number of households and the average per capita household expenditure can be cumulated and plotted in a graph.

The strategy of growth in most of the backward areas is essentially linked with the development of agriculture. Agriculture in the backward areas is handicapped by natural and location disadvantages. The prosperity in the agricultural sector will undoubtedly generate capital which is so essential for the overall development of an area in question. Agriculture provides raw materials to industries which find a market among cultivators who form the core of the population in a peasant economy. It is evident that priority for agriculture in development projects will be justifiable for many years to come.

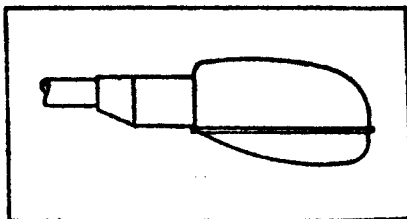
Before projects are formulated it is necessary to undertake detailed surveys of each area in regard to its development potential. These surveys should be followed up by preparation of more detailed technically and economically viable projects. The question of the choice of approach to the development of backward areas arises mainly because of constraints of financial and administrative resources.

The selection of a project for the rejection of alternate plans for development is based on benefit-cost ratio. The development project, and areas will start a reaction of development with far-reaching multiplier effects.

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Polio Can Be Prevented

Oral polio vaccine is most valuable as a prophylactic agent, though it has no curative value. Breast-feeding and taking hot drinks should be avoided for certain hours after the administration of oral polio vaccine.

POLIOMYELITIS is an acute infectious disease primarily of children, which affects the central nervous system and occurs both sporadically and epidemically. The virus causing the disease has been identified as an enterovirus, commonly known as the poliovirus, with three distinct types. This virus is rendered inactive by heat, drying up, formaline, chlorine and ultra-violet rays.

It is primarily an infection of alimentary tract with the virus multiplying in the regional lymph nodes. The incubation period is about 17 days. The infection does not manifest itself until the virus passes into the blood system and gets localised in the central nervous system. The laboratory investigations suggest that comparatively a small percentage of the infected persons suffer from a clinical disease and a smaller number of these have paralysis of meningo-encephalitis.

The laboratory diagnosis of poliomyelitis can be established by isolation of virus from stool and presence of an increasing antibody level in acute and convalescent phase sera. There is no specific treatment for the paralysis produced by poliovirus. Besides the general supportive measures that are recommended in any acute infectious disease, physiotherapy must be initiated in the affected limbs immediately. During the infection surgical measures like ear, nose, throat operations should be postponed. Personal hygiene, avoiding overcrowded places, sudden chillness of the body etc. will reduce the chances of developing clinical disease. It goes without saying that physiotherapy is of vital importance in acute and convalescent phases and must not be ignored under any circumstances.

The oral polio vaccine is most valuable as a prophylactic agent. It has no curative value. The vaccine may be administered to anyone including infants of 3—6 months of age. The administration of the vaccine has to be avoided during acute infectious disease, high fever, vomiting and dysentery. Also, patients suffering from acute leukaemia and lymphoma, generalised malignancy and receiving corticosteroids and antimetabolites may not be given the oral polio vaccines. One should avoid breast-

feeding at least 3-4 hours before and after the administration of the vaccine. It is also advisable to avoid administration of other immunizing agents the day oral vaccine is given. Hot drinks should not be taken within half-an-hour after the administration of the vaccine.

Oral polio vaccine comprises the three serotypes of polioviruses. This is a living vaccine and its efficacy depends entirely on the administration of live viruses to the individual. If, somehow or the other, any proportion of the live viruses of any of the serotypes is inactivated, the vaccine ceases to be an effective immunizing agent. With the use of such vaccine, the proportion of children, who have been successfully immunized against poliomyelitis, will be very small.

Stored at Sub-Zero Temperature

To prevent the inactivation of the vaccine before administration to the children, it is recommended that the vaccine should be stored at sub-zero temperature. It is imperative that the suppliers, distributors and the polio vaccine clinics store this vaccine at 20° C in a deep-freeze. In case a deep-freeze is not available, it might be stored in the freezing chamber of the refrigerator. During transport the vaccine must be kept either on dry ice (solid carbon dioxide) or a freezing mixture.

At the polio-vaccination clinic, the bottle containing the vaccine should not be frozen and thawed repeatedly since repeated freezing and thawing has deleterious effect on the potency of oral polio vaccines. Better still keep the vials of the vaccine in ice during its administration to children. Every child must be vaccinated with the appropriate volume of the vaccine. The person responsible for the distribution of vaccine in a clinic must ensure that the nurse is familiar with the quantity that has to be given to every child. In case the vaccine is being administered by spoons, disinfectants like dettol or lysol may not be used for the cleaning of spoons. The ideal way is to boil the spoons in water and then cool in ice water before it is used for administering polio vaccine.

By
Dr. (Mrs.) V. V. GUJRAL,
New Delhi.

A sizeable proportion of our population suffers from varying degrees of anaemia which is caused by poverty and the consequent inability to afford nutritious food plus the malaria and hookworm infestation. In this article the symptoms of anaemia and the simple method of treatment are put forth.

Anaemia Need Special Attention

All body cells are undergoing degeneration and building up uninterrupted. So also the cells in blood. The life span of red blood cells is about 120 days which means that every four months new red cells are built up and the earlier ones degenerate. Building up of red cells and their subsequent maintenance require some nutrients, deficiency of which causes anaemia. A sizeable proportion of our population suffers from varying degrees of anaemia. Apart from nutritional deficiency, malaria and hookworm infestation also can lead to anaemia. Poverty and consequent inability to afford nutritious food are the main causes for anaemia in our country. Some people are ignorant in their choice of good foods and anaemia might result from this as well. Excessive bleeding during accidents may cause anaemia. Closely spaced pregnancies and prolonged breastfeeding may also result in anaemia.

Every 100 millilitres of blood normally contain 14—15 grams of haemoglobin. Haemoglobin present in the red blood cells supplies oxygen to the body. Adult women with less than 12 g. of haemoglobin are considered anaemic. Women especially when pregnant, are often likely to become anaemic.

Symptoms of Anaemia

Feeling of exhaustion, headache, sleeplessness, loss of appetite, changes in nails and general weakness are the symptoms of anaemia. While they may not pose danger to life, the working efficiency does suffer.

Nutritional requirements of pregnant women are rather high. If there is not enough blood, oxygen supply for the body cells will not be

sufficient, which may cause a premature delivery. If the delivery is earlier than expected, the infant's life is in danger. Moreover, the mother's life may also be at risk as a result of the excessive strain on her.

If the mother is anaemic, she cannot provide enough blood to the body in her womb. Infants live on breast-milk alone for the first six months. But iron content of milk is rather low. With no iron stores in the body and only little of it in milk, infants are more exposed to getting anaemia.

Prevention of Anaemia

What are the nutrients which can prevent anaemia? Proteins, iron, vitamin-B and vitamin-C are essential for the formation of blood. Deficiency of any of these can lead to anaemia.

Milk, pulses, liver and eggs are rich in proteins and the body can have good quality proteins through a mixture of cereals and pulses. Next to proteins, iron is important. This mineral nutrient is available in leafy vegetables and liver.

Vitamins B and C Needed

Body needs some vitamins to absorb iron from food. To cite an example; unless vitamin C is present, iron cannot be absorbed properly. Generally, all fruits contain vitamin-C. It is also found in leafy vegetables.

B-vitamins are needed to maintain good blood. Whole grains, pulses, liver and milk give us these vitamins.

About half the number of pregnant women in our country are anaemic. One out of every four maternal deaths is due to anaemia. To avoid anaemia, the daily diet should contain milk, whole grains, leafy vegetables and liver. Vegetarians must eat a lot of leafy vegetables. ①

"MALARIA" DECLARED AS INFECTIOUS DISEASE.

Section 52 in Part I of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) deals with the infectious diseases and section 62 in Part II of the said chapter deals with the notified diseases. During the last decade or more, the incidence of Malaria has considerably decreased in the city of Madras, though it cannot be said that it has been eradicated once for all. But recently there has been a noticeable increase in the incidence of Malaria in the City, which is due to various factors. With a view to have an effective control over the spread of the disease, the Government considered it necessary to include "Malaria" in the list of infectious diseases as well as notified diseases, so that effective control measures could be undertaken. Accordingly, it was declared in the notifications issued with G.O. (Ms.) No. 2797, Health, dated 1st December 1972 that "Malaria" shall be an infectious disease and notified disease throughout the State for the purposes of Parts I and II respectively of Chapter VII of the Tamil Nadu Public Health Act, 1939 (Tamil Nadu Act III of 1939) the notifications having been published in Part II—Section I of the Tamil Nadu Government Gazette, dated 23rd February 1973. ②

Company Meeting

CHERAN TRANSPORT CORPORATION LIMITED

Regd. Office : 37, Mettupalayam Road,
Coimbatore-641011.

Statement made by Thiru M. S. Ram, I.A.S., Chairman, Cheran Transport Corporation Limited at the Second Annual General Meeting of the shareholders of the Corporation held on the 29th September 1973.

Gentlemen,

I have much pleasure in welcoming you to the Second Annual General Meeting. The Report of the Directors and the Audited Accounts for the year ended 31st March 1973 have been circulated to you and with your permission I shall take them as read.

Working Results for the Year

In 1972-73, the turnover was Rs. 2.03 crores and after charging all expenses including a depreciation of Rs. 25.66 lakhs, your Company made a net profit of slightly over Rs. 7.50 lakhs. After wiping out the previous year's loss of Rs. 7.50 lakhs completely, the company will carry forward a small surplus of Rs. 1,695.

Your company commenced its commercial operations on 1st March 1972 and therefore the First Annual Report for the period ending 31st March 1972 was only for one month's operation. The Audited Accounts now before you are for the first year of 12 months' operations of your company.

The Government of Tamil Nadu when it authorised the setting up of your company in January 1972 required that the company should take necessary steps to ensure that it is able to meet its requirements on fleet replacement from time to time from internally generated cash resources and should earn a minimum return of 6 per cent on capital invested after meeting the interest charges and earmarking

necessary funds for depreciation. I am pleased to inform you that your company has earned over three times the minimum return of 6 per cent on capital prescribed by the Government. During the year 1972-73, the paid up capital of the company was Rs. 2,100. But we received an amount of Rs. 15 lakhs from the Government of Tamil Nadu as advance towards the issue of shares. If we notionally treat this amount as equity, out of the pre-tax profit of Rs. 7.5 lakhs we would have been able to declare a dividend of 20 per cent after payment of taxes.

In a Government-owned company like ours, as the company could borrow funds to meet most of its requirements, the proper measure of financial performance may perhaps be return on capital employed. As the Audited Accounts before you would show the capital employed by your company during the financial year 1972-73 is just over Rs. 54 lakhs. The return on this has been Rs. 10.80 lakhs (net profit of Rs. 7.50 lakhs provided for in the accounts). This works out to a return of 20 per cent on the capital employed.

You would agree with me that this financial performance is outstanding for a public utility company like Transport measured by any standards. More so, as this was possible in a period of inflation when our costs escalated and our charges for use of our facilities remained constant. Instead of leaving it to the last, let me at the outset, on behalf of the Board of Directors, congratulate the

employees of the Corporation and its Managing Director Thiru N. Thirugnanasambandam, under whose dynamic leadership this excellent financial performance has been made possible.

Satisfaction to the community

While it is easy to measure financial performance, it is difficult to measure the amount of satisfaction we have given to the community at large in the area in which we operate. While laying down the financial performance expected of the Corporation in January 1972, the Government of Tamil Nadu also charged the Corporation "with the responsibility for maintaining an efficient, adequate, economical and viable system of road transport services in its area of operation". The services expected from the Corporation include elements such as capacity, frequency, reliability, speed, safety and financial viability. The broad aim of the Corporation would be to provide a comprehensive net work of services including certain routes that may individually not be economic propositions. The Government expect the company to function in accordance with the sound commercial principles as far as practicable consistent with its responsibility as a public utility concern dealing with a vital sector of great importance to the community as a whole.

As your Corporation is responsible only for about 25 per cent of the total number of buses operating in the districts of Coimbatore and the Nilgiris, there have been difficulties.

in its discharging some of the responsibilities entrusted to it. But even within the parameters the Corporation operates, there is plenty of scope for improving the Corporation's service to the community from the point of view of increasing capacity, frequency, reliability and speed. I want to assure you and through you the people of Tamil Nadu who are the real owners of the Corporation that the Management are fully conscious of the need for improvement of its services and would rededicate itself during the current financial year to the challenging task of providing better service to the community.

Bringing Rural Areas within Transportation Net Work

Apart from providing a letter service, we are at present preparing plans for connecting every village with motorable roads in our area of operation to our transportation net work. We know in the early years these routes would not be viable. We are prepared to treat part of the cost in running buses in the newly constructed rural roads as social costs or developmental costs.

All these measures are bound to affect our financial performance for the current year and for the coming years. It is for this reason that while reviewing the Company's financial performance for the year 1972-73, I did not indulge in the usual platitude and give you the hope that there is scope for improvement in the financial performance of the company. I want to take you into confidence and tell you that as we improve our services and connect hitherto unconnected villages within the net work of our transportation system and subsidise such operations the percentage of return on the capital employed is likely to come down. But we hope to continue to maintain reasonable and satisfactory financial performance even after incurring the social costs proposed. I believe that creation of surplus, whatever be its form 'for future investment' is a basic obligation of a company like ours. While a public sector company may plead incurring of social costs as a reason for creating less surplus from out of its investments, it would be a sad day for our overall economic development, if any of our public sector companies

plead incurring of social costs as an alibi for creating no surplus at all.

Corporation's Growth

The Directors have reported to you about a growth of nearly 200 per cent, both in the fleet strength and monthly average collections during the financial year ending 1972-73. During the year 203 vehicles were added to the fleet strength. This was made up of 124 acquired in the Nilgiris district as a result of nationalisation, 32 acquired from the Co-operative Societies which were taken over by your company, 24 bought from private operators who volunteered to sell their buses to the company and 23 directly purchased by the company for augmentation. You would appreciate that while this growth rate was possible for the first year on a lower base, it cannot be sustained during the current financial year or in future years. During the current year, the company has so far added 43 more vehicles. Before the end of March 1974, we hope to add 100 more vehicles thereby achieving a growth rate of approximately 50 per cent. A similar growth rate of 50 per cent is also expected in the monthly average collections.

With an increase in fleet of 50 per cent, the Corporation hopes to increase the total kilometrage run by about 75 to 80 per cent.

Your company has taken a number of steps to prepare themselves for the eventual take over of the passenger bus services in its area of operation. It has a massive programme of construction of depots in a number of places involving an outlay of Rs. 20 lakhs during 1973-74. Proposals are also under consideration for installation of modern machinery for ensuring proper maintenance of vehicles.

The company has also undertaken a scheme for training employees at various levels including training of III qualified technicians as drivers.

EMPLOYEES' PARTICIPATION IN THE EQUITY CAPITAL OF PUBLIC SECTOR UNDERTAKINGS.

As you are aware, employees' participation in equity capital and management of companies, both in public and private sectors, has

been discussed in our country for a number of years. The public sector have experimented with association of workers in management. The private sector in some cases have also experimented with reservation of certain number of shares to be exclusively sold to their employees. But, once such shares are purchased by an employee, he has no obligation to hold on to the shares.

The scheme of the "Employees Participation in the Equity Capital and Management in the State Owned Transport Corporations" announced by the Tamil Nadu Government is a unique one in many respects. Under the scheme the employees are issued with convertible debentures bearing 8 per cent interest. Convertible debentures do not give the ownership to the employee immediately. He is a lender to the Corporation; but a lender with an option to acquire ownership. The debentures are convertible into ordinary shares of the Corporation during a period of ten years. The employee would continue to get interest at 8 per cent on his investment as long as he keeps his debentures, even if the company works on loss. If there is profit and a dividend of more than 8 per cent is declared, the employees have the option to convert his debentures into shares and get better returns on his investment.

The scheme permits employees who get a salary up to Rs. 500 p.m., to purchase debentures worth Rs. 500 and those who get a salary of Rs. 500 and more, to purchase debentures up to Rs. 1,000. The purchase money can be paid in small monthly instalments. The scheme is optional in the case of existing employees, but in the case of new recruits, it is compulsory. The employee will not be permitted to transfer the convertible debentures during the period of service with the Corporation.

The scheme has been hailed as a bold socialistic experiment. The hope is that conditions would be created under which an industrial worker will look upon ownership of a piece of industry and develop attachment to that industry in the same manner in which he or his forefathers have been attached to the piece of land which they cultivated.

In introducing this scheme, the Tamil Nadu Government hoped that "the least it would do, would be to unleash latent forces that would be responsible ultimately for a new kind of revolution in our public sector industry, a revolution in terms of increased productivity, profitability and harmonious labour relation". They also hoped that "this would set a chain reaction and would inspire others to launch similar or modified schemes of worker participation in ownership of industry".

Your Company had the good fortune of being selected as the first public sector undertaking in Tamil Nadu to introduce this scheme. The scheme is in operation in your Company from May 1973. It is a tribute to the social responsibility and farsightedness of the employees of your Company that out of 1,500 regular employees, 1,300 have voluntarily joined the scheme. The Board of Directors have nominated two employee debenture holders as Directors of the Company. These Directors are serving bus drivers who are the king pins of any transport organisations. There are very few parallels either in the public or private sector in our country where employees at the so-called working level have been nominated and asked to take their seats along with the management in the Board of the Corporation.

PROFIT SHARING

Your Board also recently introduced a "Profit Sharing Scheme" to cover all employees of the Corporation except the Managing Director. The drivers and conductors in most of the transport organisations in the private sector and in some of the transport organisations in the public sector were getting what is known as 'collection batta'. This batta usually is a percentage of the daily collections and provided an incentive for the driver and conductor to increase the collections by picking up passengers at the appropriate places and maintaining regularity of services. The drivers and conductors in your company were also getting this collection batta. We found from experience that practically every one in a transport organisation will have to pull his weight to enable the organisation to earn profits. Therefore, we have

devised a 'Profit Sharing Scheme' to cover all employees of your Corporation excepting the drivers and conductors who are governed by the existing incentive scheme. The basic element in the new scheme is there will be no sharing without profits being made. The standard profit the Corporation expects to make after meeting all its expenses including interest charges, depreciation, etc., is 10 paise per kilometer. If during any month, the profit goes down below 10 paise per kilometer, there would be no profit sharing. During the months the profits are 10 paise or more per kilometer, 0.5 per cent of the collections for the month will be shared equally by all the employees.

We are conscious that this is not a very refined profit sharing scheme. But, we are making a beginning and we hope this measure along with the employees participation in equity capital and management, which we have introduced, would give a stake to the employees in the profitable operations of the Corporation.

With your permission, I would like to refer also to some of the particular problems of passenger transportation industry. The industry now comprises of 47 Nationalised Undertakings which include 16 State Road Transport Corporations, 12 Departmental enterprises, 14 Municipal Services and 5 companies under the Companies Act of 1956.

The pace of nationalisation of the Bus transportation industry in our country has been slow. After 25 years of efforts at Nationalisation we have succeeded in nationalising only 37 per cent of the industry. Though the total number of passenger buses in the country have increased from 34,000 in 1950-51 to 95,000 in 1969-70, the number of houses under Public Sector in 1969-70, is only 35,193. An important reason for the slow progress of Nationalisation has been lack of an appropriation instrument for speedy and progressive nationalisation.

The Motor Vehicles Act of 1939, inspite of important subsequent modifications, remains basically a 'Magna Carta' of free enterprise. Some sections of the Act, no doubt, vest discretion in the State Trans-

port Undertakings to nationalise routes and areas. Interpretations of these sections, the manner in which route nationalisation and area nationalisation can be resorted to under these sections continue to be the subject of vexatious litigation between the Bus Operators and the various State Transport Undertakings. Private Operators have invariably succeeded in getting stay orders on the operation of particular sections of the Act and got temporary permits to ply on the routes nationalised under the provisions of the Act. The legal battle is on still. While it would be for the historian of the future to record the frustrations of the nationalised transportation industry in detail in the history of nationalisation in our country. I know of no parallel where nationalisation has been as slow and cumbersome process as nationalisation under the provisions of the Motor Vehicles Act of 1939.

The permits i.e., licences to ply buses on roads constructed at public cost is still treated as sacrosanct private property even after the expiry of the period of the permit. The operator has a right to renew the permit. The State Transport Undertaking has no preference as against the private operator either in getting permit for a new route or in getting an expired permit allocated to itself. It would look paradoxical, but nevertheless it is true that a newly formed State Transport Undertaking is at disadvantage in getting a new permit as against a private operator under the provisions of the Act, because the State Transport Undertaking has no experience in running a transport industry!

It is in recognition of these problems the Government of Tamil Nadu promulgated The Stage Carriages and Contract Carriages (Acquisition) Ordinance 1973. The Ordinance later became an act. The Ordinance/Act authorised Government to notify and take over all buses with employees and routes and to pay compensation in accordance with the Schedule prescribed in the Ordinance/Act. The High Court of Madras held the Ordinance and the Act as void. An appeal on this has been filed with the Supreme Court by the Government of Tamil Nadu and is still pending with that Court. I am glad to inform you that some of the bus

operators in the Nilgiris District have voluntarily given up their right to challenge the Tamil Nadu Act except in respect of the compensation prescribed in that Act and have settled their claims with the Government.

ELIMINATION OF WASTEFUL COMPETITION AND SAVING OF FOREIGN EXCHANGE

Apart from ideology, there are some important practical reasons for a total nationalisation of bus transportation industry at this stage. An empty passenger seat is one of the most perishable commodities in economic terms. Unlike in any other industry, a passenger seat not occupied in a trip is a wasted asset. In theory, the regulations under the Motor Vehicles Act are expected to ensure the operation of an efficient and economic system by eliminating wasteful competition. But in practice, wasteful competition arising out of running a larger number of buses in routes where a smaller number would adequately cater to the needs for passenger transportation is common. It is also common wherever a route is nationalised for the private operator as well as for the nationalised undertaking to run parallel operations in that route, till the need and the legality of the nationalisation is established invariably in the highest Courts of the land.

I want to pose this question with all earnestness at my command. Can a country with the availability of limited investment capital which imports most of its petroleum products by paying scarce foreign exchange afford the luxury of this competition in passenger transportation? Organisation of the entire transportation system under the auspices of the State may not completely eliminate this wastage but there are reasonable prospects of most of the wastage being eliminated.

I hope the Government of India who are now concerned with increase in crude oil prices in an effort to save the import bill on petroleum products would soon take the initiative to set in motion a study on the prospects of saving diesel oil by eliminating wasteful competition in passenger transport.

CONCLUSION

Gentlemen, let me now hasten to perform the happy task of expressing my deep gratitude to the Hon'ble Minister for Transport, Government of Tamil Nadu and his colleagues for this wholehearted and continued support and the freedom with which they permitted the Management of your Company to operate within the parameters of Government's policies and directions. If the Corporation has been able to live up to the expectations of the Government, this has been mainly due to the auto-

nomy it enjoyed in its day-to-day operations.

I would also like to record my thanks for the co-operation of the Officers and Staff of the Comptroller and Auditor-General of India and the Statutory Auditors, Thiruvalluvar C. S. Seethapathy and Krishnamurthy for the completion of their audit and for their valuable comments.

I would like to end this statement with a personal note. Your Company, by standards of Transport Companies in this country, is a small one with a fleet of over 300 buses. Nevertheless, I consider it to have been my privilege to be associated with your Company as its Chairman during the last 18 months. It has given me great personal satisfaction to have participated in evolving implementing some of the new schemes such as Employees' Participation in Equity Capital and Management and the Employees Profit Sharing in your Company. I am grateful for the co-operation I have received from all the employees of the Company and my colleagues in the Board.

Gentlemen, I now move that the Directors' Report, Audited Balance Sheet and the Profit and Loss Account be approved and adopted.

Note.—This does not purport to be a record of the proceedings of the Annual General Meeting.

When two drivers of Cheran Transport Corporation were nominated Directors of the Corporation, they were taken in procession along with Transport Minister.



DEPARTMENT OF TECHNICAL EDUCATION, TAMILNADU.

GOVERNMENT TECHNICAL EXAMINATIONS

MAY 1973

Following is the provisional list of register numbers of successful candidates in the Government Technical Examinations in Accountancy, Commercial Practice, Banking, Commercial Geography, Shorthand, English and Tamil Typewriting—English and Tamil Lower and Higher Grades, including Intermediate Grade in Shorthand—English, Shorthand—English and Tamil—High Speed Tests, Typewriting—English and Tamil High Speed Tests held in May 1973.

The certificates of the successful candidates in the above examinations will be despatched to them shortly. Discrepancies, if any, in the publication of results in the different Dailies may be got clarified by addressing this office.

Necessary notification inviting application from eligible candidates for admission to the Government Technical Examinations in Commerce subjects to be held in November 1973 will be published shortly.

TYPEWRITING—ENGLISH (LOWER)

FIRST CLASS

129, 534, 548, 569, 753, 774, 777, 806, 831, 834, 1247, 1583, 1584, 1586, 1596, 1611, 1622, 1644, 1659, 1758, 1947, 1952, 2364, 2690, 2709, 2717, 2877, 2997, 3045, 3110, 3199, 3606, 3611, 3873, 4095, 4279, 4483, 4597, 4615, 4707, 4710, 4937, 5139, 5168, 5265, 5298, 5302, 5309, 5311, 5319, 5320, 5330, 5487, 5552, 5579, 5689, 5836, 5837, 5991, 6211, 6423, 6533, 6600, 6836, 6910, 7003, 7029, 7104, 7260, 7270, 7595, 7617, 7837, 7879, 7890, 8126, 8143, 8144, 8185, 8204, 9248, 9890, 9962, 10012, 10026, 10234, 10302, 10318, 10320, 10428, 10469, 11009, 11011, 11016, 11057, 11061, 11354, 11376, 11377, 11379, 11393, 11399, 11404, 11566, 11620, 11642, 11713, 11740, 11935, 12004, 12006, 12462, 12467, 12564, 12653, 12755, 12778, 12779, 12783, 13214, 13379, 13481, 13509, 13564, 13631, 13736, 13753, 13989, 14248, 14323, 14465, 14474, 14475, 14476, 14478, 14487, 14546, 14600, 14841, 14899, 15220, 15344, 15504, 15515, 15575, 15632, 15649, 15662, 15780, 15816, 16229, 16271, 16356, 16378, 16486, 16492, 16494, 16523, 16544, 16554, 16562, 16597, 16723, 16924, 16953, 17064, 17084, 17105, 17196, 17324, 17355, 17414, 17452, 17501, 17569, 17721, 17980, 18027, 18086, 18123, 18126, 18276, 18313, 18456, 18512, 18727, 18810, 18823, 18890, 18942, 18946, 18974, 19010, 19018, 19026, 19036, 19106, 19211, 19236, 19264, 19267, 19270, 19302, 19310, 19315, 19327, 19339, 19461, 19676, 19743, 19754, 19759, 19835, 19878, 19901, 19950, 19976, 20047, 20099, 20100, 20321, 20342, 20362, 20508, 20565, 20804, 20885, 20895, 20902, 21173, 21211, 21326, 21611, 21612, 21713, 21730, 21838, 21945, 21969, 22055, 22057, 22224, 22259, 22308, 22990, 23036, 23093, 23199, 23236, 23326, 23372, 23896, 23973, 24188, 24489, 24568, 24733, 24753, 25084, 25134, 25183, 25355, 25712, 25756, 25787, 25810, 25917, 26088, 26129, 26217, 26228, 26271, 26440, 26446, 26530, 26535, 26622, 26783, 26812, 26846, 26863, 26920, 26958, 26998, 27009, 27019, 27045, 27091, 27113, 27140, 27158, 27165, 27215, 27382, 27603, 27620, 27705, 27765, 27819, 28042, 28368, 28379, 28385, 28386, 28389, 28427, 28457, 28463, 28476, 28572, 28629, 28676, 28709, 28876, 28904, 29296, 29298, 29301, 29367, 29462, 29674, 29677, 29754, 29840, 29886, 29901, 29904, 29923, 29941, 29962, 29975, 29987, 29990, 30005, 30186, 30474, 30584, 30585, 30614, 30774, 31027, 31319, 31409, 31418, 31423, 31443, 31448, 31633, 31715, 31846, 31876, 31973, 31982, 32084, 32133, 32162, 32231, 32589, 32601, 32662, 32672, 32709, 32805, 32824, 32990, 32994, 34059, 34071, 34098, 34153, 34158, 34446, 34503, 34517, 34522, 34528, 34540, 34550, 34591, 34816, 34910, 35043, 35433, 35460, 35472, 35500, 35626, 35679, 35687, 35731, 35773, 35788, 35826, 35859, 35867, 35895, 35936, 36227, 36257, 36329, 36344, 36656, 36682, 36803, 37048, 37092, 37125, 37134, 37249, 37296, 37402, 37593, 37600, 37616, 37638, 37659, 37663, 37666, 37685, 37703, 37720, 37724, 37871, 38089, 38106, 38167, 38210, 38211, 38294, 38372, 38832, 38947, 38949, 39132, 39223, 39326, 39401, 39471, 39500, 39505, 39846, 39886, 39960, 40401, 40468, 40596, 40605, 40717, 40834, 40858, 40927, 41002, 41010, 41282, 41291, 41500, 41564, 41764, 41970, 42017, 42049, 42235, 42280, 42311, 42340, 42344, 42360, 42367, 42394, 42444, 42488, 42522, 42538, 42548, 42570, 42572, 42580, 42624, 42674, 42837, 43160, 43412, 43461, 43463, 43470, 43517, 43541, 43631, 43672, 43675, 43739, 43747, 43968, 43982, 43996, 44045, 44166, 44298, 44365, 44457, 44710, 44712, 44777, 44823, 44887, 44918, 44923, 44925, 44941, 44954, 44978, 45000, 45015, 45031, 45047, 45059, 45116, 45154, 45173, 45203, 45207, 45229, 45387, 45391, 45512, 45525, 45548, 45655, 45694, 45715, 45724, 45800, 45888, 45997, 46169, 46306, 46395, 46458, 46638, 46649, 46653, 46851, 46864, 46871, 46881, 46930, 46933, 47076, 47111, 47176.

SECOND CLASS

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TYPEWRITING—ENGLISH—LOWER—cont.

Second Class—cont.

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12104, 5, 8, 17, 23 to 25, 29, 33, 45, 63, 67, 74, 81, 82, 98, 99, 12212, 18, 22, 33, 34, 37, 49, 54, 65, 68, 12303, 52, 53, 56, 60, 64, 66, 68, 69, 71, 75, 79, 84, 89, 92, 93, 99, 12400, 4, 8, 10, 12, 20, 24, 30, 37, 38, 45, 52, 59, 65, 66, 88, 92, 94, 12501, 3, 9, 10, 16, 19, 21, 22 to 24, 26, 29, 62, 70, 77, 78, 81, 88, 90, 92, 94 to 96, 12631, 33, 35, 37, 39, 44, 46, 57, 72, 84, 87, 89, 90, 12704, 5, 9, 13, 16, 18, 19, 25 to 27, 43, 44, 58, 59, 63, 64, 71, 75, 80 to 82, 85, 90, 95, 12801, 5, 6, 11, 15, 20, 25, 26, 29, 32, 33, 42, 44, 45, 49, 53, 54, 56, 59, 62, 65, 70, 74, 78, 81, 82, 90, 93, 98, 12911, 12, 21, 25, 35, 46, 54, 55, 58, 62, 64, 69, 73, 74, 87, 13000, 2, 12, 18, 26, 49, 61, 65, 71, 79, 85, 91, 93, 98, 13102, 4, 13206, 17, 26, 27, 32, 36, 46 to 52, 57, 58, 62, 64, 70, 73, 98, 13316, 32, 33, 36, 54, 69, 87, 90, 13403, 11, 18, 26, 47, 51, 55, 56, 59, 64, 91, 92, 97, 13525, 28, 33, 37, 43, 45, 47, 48, 56, 60, 73, 81 to 83, 88, 89, 91, 93, 99, 13625, 27, 35, 42, 43, 54, 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TYPEWRITING—ENGLISH (LOWER)—cont.

Second Class—cont.

14900, 3, 21, 23, 27, 31, 34, 50, 53, 58, 64, 65, 71, 72, 74, 77, 94, 95, 15002, 28, 34, 44, 48, 52, 65, 84, 92, 94, 15109, 13, 23, 32, 35, 42, 43, 47, 55, 57, 68, 70, 71, 74, 75, 79, 95, 97, 15202, 5, 9, 12, 15, 16, 19, 27, 38, 43, 44, 50, 52, 64, 78, 82, 86, 88, 92, 93, 96, 15302, 5, 6, 12, 14, 25, 29, 32, 33, 45, 53, 55, 59, 66, 70, 72, 80, 81, 87, 93, 96, 98, 15403, 14, 15, 16, 18, 20, 24, 30, 33, 36, 37, 38, 41, 44, 46, 59, 81, 85, 15505, 6, 12, 16 to 18, 20, 24, 25, 32, 37, 44 to 46, 48 to 50, 57, 59, 68, 76, 77, 79, 15607, 8, 12, 13, 14, 19, 21, 31, 33, 44, 59, 64, 68, 77, 80, 83, 86, 88, 90, 91, 93, 96, 15702, 9, 11, 26, 34, 36, 38, 45, 52, 53, 65, 67, 68, 74, 76, 84, 87, 94, 99, 15800, 7, 10, 11, 20, 21, 23, 27, 28, 31, 34, 35, 42, 44, 68, 71, 77, 78, 83, 84, 85, 86, 89, 96, 15900, 45, 56, 58, 61, 63, 67, 70, 93, 96, 16000, 27, 37, 38, 44, 53, 54, 57, 58, 65, 67, 68, 70, 73, 78, 16116, 24, 28, 33, 34, 41, 42, 53, 57, 58, 61, 76, 79, 82, 89, 16203, 10, 12, 13, 16, 19, 23, 26, 28, 34, 35, 38, 39, 40, 44, 48, 49, 74, 88, 97, 99, 16307, 11, 16, 18, 20, 26, 33, 37, 38, 52, 58, 61, 70, 74, 83, 84, 86, 93, 94, 97, 99, 16404, 9, 11 to 13, 17, 24, 27, 28, 34, 35, 42, 46, 58, 61, 64, 67, 70, 73, 79, 93, 98, 16504, 7, 8, 10, 18, 25, 31, 36, 37, 45, 47, 49, 57, 64, 76, 79, 84, 85, 99, 16600, 16, 17, 21, 30, 33, 37, 62, 70, 74, 77, 78, 79, 81, 90, 95, 16701, 7, 12, 24, 40, 46, 49, 50, 56, 95, 97, 16800, 1, 3, 12, 15, 18, 25, 27, 31, 32, 39, 42, 77, 85, 16901, 14, 17, 20, 49, 57, 63, 69, 85, 92, 98, 17000, 1, 6 to 8, 10, 18, 30, 39, 42, 50, 55, 56, 61, 72, 74, 82, 88, 90, 91, 93, 94, 97, 17101, 3, 21, 24, 35, 40, 44, 48, 50, 74, 78, 92, 17201, 3, 9, 10, 11, 20, 23, 29, 32, 34, 38, 40, 45, 47, 53, 57, 59, 60, 63, 71, 73, 77, 83, 87, 89, 91, 96, 17303, 5, 6, 8, 14, 17, 21, 23, 26, 27, 67, 68, 75, 80, 82, 86, 87, 17400, 2, 3, 10, 15, 27, 30, 36, 53, 54, 56, 63, 67, 77, 78, 82, 84, 87, 90, 17502, 3, 5, 22, 24, 27, 29, 52, 55, 62, 63, 80, 90, 17602, 3, 6, 16, 23, 30, 32, 37, 38, 42, 45, 56, 60, 68, 70, 75, 82, 17705, 10, 13, 14, 22, 24, 36, 37, 39, 50, 58, 61, 63, 71, 74, 76, 80, 81, 85 to 88, 93, 94, 17805, 7, 13, 36, 63, 67, 69, 76, 78, 82, 93, 94, 17902, 3, 18, 21, 22, 24, 33, 43, 44, 45, 46, 84, 85, 88, 96, 98, 99, 18004, 7, 10, 23, 28, 42, 51, 58, 64, 67, 73 to 75, 78, 80, 81, 89, 91, 96, 18102, 3 to 5, 13, 25, 50, 63, 71, 73, 76, 78, 80, 88, 95, 18205, 25, 32, 38, 49, 63, 67, 68, 69, 75, 79, 87, 92, 93, 95, 18307 to 10, 19, 22, 25 to 30, 34, 39, 40, 47, 51, 54, 69, 88, 18415, 82, 18525, 56, 81, 85, 90, 18602, 11, 18, 22, 24, 28, 33, 40, 45, 46, 48, 49, 50, 53, 60, 62, 65, 66, 69, 77, 82, 83, 85, 92, 97, 98, 19400, 7, 10, 14, 17, 24, 29, 33, 35, 37, 40, 45, 46, 48, 49, 50 to 53, 60, 62, 69, 73, 77, 78, 82, 85, 92, 97, 98, 19701, 8, 44, 49, 57, 58, 59, 60, 66, 67, 70, 79, 19802, 4, 27, 36, 51, 58, 59, 68, 77, 86, 89, 90, 95, 19900, 3, 13, 18, 44, 45, 46, 49, 52, 53, 59, 58, 66, 67, 70, 79, 19802, 4, 27, 36, 51, 58, 59, 68, 77, 86, 89, 90, 95, 19900, 3, 13, 18, 44, 45, 46, 49, 52, 53, 59, 61, 63, 66, 71, 75, 78, 81, 82, 92, 20002, 5, 12, 38, 39, 45, 48, 79, 20102, 4, 6, 12, 30, 35, 40, 59, 60, 66, 80, 83, 58, 66, 67, 70, 79, 19802, 4, 27, 36, 51, 58, 59, 68, 77, 86, 89, 90, 95, 19900, 3, 13, 18, 44, 45, 46, 49, 52, 53, 59, 61, 63, 66, 71, 75, 78, 81, 82, 92, 20002, 5, 12, 38, 39, 45, 48, 79, 20102, 4, 6, 12, 30, 35, 40, 59, 60, 66, 80, 83, 88, 89, 20203, 6, 15, 19, 26, 27, 40, 41, 55, 80, 82, 83, 85, 94, 95, 20306, 13, 17, 22, 30, 31, 32, 34, 35, 45, 47, 49, 52, 53, 54, 56, 64, 65, 66, 84, 93, 97, 20411, 16, 52, 53, 54, 59, 69, 70, 77, 79, 81, 92, 95, 20501, 5, 17, 18, 19, 20 to 22, 24, 28, 49, 51, 54, 64, 72, 74, 75, 86, 20600, 1, 9, 17, 25, 29, 32, 33, 34, 41, 54, 56, 57, 58, 64, 65, 73, 75, 78, 85, 88, 97, 20715, 24, 52, 53, 57, 61, 64, 74, 86, 89, 98, 99, 20810, 11, 13, 14, 32, 33, 35, 37, 43, 47, 54, 63, 67, 77, 82, 83, 87, 89, 91, 92, 96, 97, 20907, 9, 19, 40, 41, 49, 60, 66, 68, 74, 86, 88, 91, 92, 93, 99, 21018, 20, 29, 30, 39, 44, 46, 61, 68, 73, 82, 92, 97, 21134, 39, 41, 42, 43, 47, 51, 54, 62, 76, 82, 83, 87, 88, 91, 93, 94, 21205, 13, 14, 19, 21, 22, 23, 29, 34, 39, 42, 43, 44, 63, 82, 85, 93, 21306, 7, 10, 27, 32, 36, 42, 44, 45, 48, 59, 60, 61, 71, 74, 78, 83, 86, 98, 21401, 3, 9, 71, 77, 78, 80, 81, 83, 85, 92, 21500, 1, 9, 11, 18, 19, 44, 45, 48, 59, 60, 61, 71, 74, 78, 83, 86, 98, 21600, 6, 10, 18, 22, 26, 28, 37, 45, 46, 57, 69, 83, 92, 99, 21702, 17, 27, 28, 33, 37, 46, 56, 60, 76, 87, 88, 96, 21804, 8, 12, 18, 23, 27,

TYPEWRITING—ENGLISH (LOWER)—cont.

Second Class—cont.

24, 31, 35, 38, 43, 49, 51, 53, 56, 67, 71, 76, 82, 83, 84, 87, 89, 90, 91, 96, 27209, 14, 19, 21, 28, 36, 38, 42, 43, 56, 58, 75, 27332, 33, 54, 55, 58, 59, 60, 62, 63, 65, 66, 68, 73, 74, 76, 78, 83, 27400, 13, 29, 30, 32, 35, 38, 46, 50, 52, 55, 56, 73, 91, 27506, 23, 43, 63, 65, 73, 85, 27602, 4, 11, 16, 27, 40, 43, 48, 51, 52, 69, 81, 86, 88, 27708, 18, 20, 21, 23, 29, 31, 33, 41, 44, 47, 52, 55, 62, 64, 66, 67, 72, 73, 77, 84, 27856, 60, 66, 72, 82, 84, 27905, 22, 27, 29, 31, 33, 41, 48, 50, 52, 55, 64, 70, 74, 80, 91, 94, 99, 28011, 12, 21, 22, 23, 24, 31, 32, 50, 56, 62, 93, 95, 96, 28108, 9, 41, 69, 97, 99, 28200, 11, 36, 43, 52, 54, 55, 95, 28310, 21, 30, 44, 50, 54, 59, 64, 66, 69, 75, 76, 88, 90, 98, 28413, 17, 18, 20, 24, 26, 31, 37, 38, 42, 44, 55, 61, 68, 70, 72, 75, 78, 84, 98, 28500, 6, 10, 14, 23, 35, 39, 41, 61, 64, 65, 68, 75, 78, 79, 80, 88, 95, 98, 28601, 10, 37, 44, 49, 57, 58, 60, 62, 63, 66, 70, 72, 75, 86, 87, 93, 28700, 6, 18, 34, 35, 38, 46, 49, 28839, 42, 44, 53, 54, 56, 57, 65, 79, 84, 92, 28906, 8, 11, 12, 17, 26, 31, 57, 61, 64, 65, 66, 68, 84, 87, 29013, 33, 39, 41, 46, 48, 53, 56, 67, 68, 82, 84, 90, 93, 98, 29100, 2, 3, 8, 9, 11, 12, 14, 31, 41, 44, 54, 65, 91, 29204, 9, 10, 28, 29, 30, 71, 73, 77, 92, 93, 29312, 24, 27, 39, 41, 42, 45, 62, 63, 72, 29401, 7, 14, 19, 23, 24, 31, 34, 41, 44, 45, 48, 49, 52, 53, 55, 69, 73, 77, 86, 88, 90, 94, 29518, 21, 34, 37, 42, 52, 55, 57, 60, 72, 29627, 29, 33, 48, 53, 76, 79, 80, 85, 87, 92, 93, 97, 99, 29700, 5, 6, 15, 18, 20, 22, 23, 24, 61, 62, 75, 92, 93, 29809, 14, 28, 33, 43, 44, 51, 56, 57, 59, 68, 70, 81, 83, 90, 29900, 12, 19, 26, 31, 42, 45, 48, 49, 56, 58, 64, 66, 78, 85, 97, 98, 30008, 9, 11, 17, 25, 30, 42, 46, 50, 68, 72, 73, 77, 79, 87, 89, 94, 96, 99, 30100, 2, 12, 17, 21, 26, 27, 32, 39, 44, 48, 51, 91, 92, 30219, 35, 55, 56, 57, 59, 60, 63, 65, 67, 71, 91, 92, 94, 30302, 6, to 8, 10, 15, 17, 28, 61, 66, 72, 76, 83, 30404, 9, 10, 17, 27, 48, 62, 30523, 39, 42, 53, 71, 72, 75, 81, 30602, 6, 25, 26, 35, 42, 50, 53, 76, 77, 81, 82, 83, 85, 88, 89, 91, 93, 98, 30707, 8, 52, 54, 57, 61, 68, 70, 77, 80, 82, 99, 30804, 6, 9, 10, 11, 17, 24, 30, 31, 41, 43, 45, 64, 71, 72, 75, 80, 81, 82, 30972, 73, 79, 81, 85, 94, 31011, 32, 78, 83, 84, 31103, 16, 21, 33, 37, 58, 74, 82, 86, 94, 31200, 4, 12, 25, 28, 55, 56, 65, 31306, 11, 14, 27, 28, 30, 32, 33, 44, 58, 65, 66, 69, 77, 80, 92, 97, 31401, 5, 10, 11, 13, 16, 31, 33, 38, 41, 42, 44, 45, 49, 50, 52, 56, 58, 62, 64, 67, 68, 72, 75, 83, 95, 31515, 64, 74, 78, 89, 91, 96, 31606, 11, 14, 15, 17, 26, 28, 30, 32, 36, 51, 53, 57, 60, 61, 68, 73, 75, 80, 83, 97, 31703, 4, 10, 12, 13, 24, 30, 34, 42, 51, 53, 65, 66, 69, 75, 76, 79, 83, 89, 31800, 6, 12, 21, 33, 39, 55, 68, 78, 83, 85, 99, 31921, 29, 32, 33, 70, 76, 77, 78, 92, 32001, 4, 7, 25, 26, 28, 31, 36, 48, 55, 66 to 68, 71, 72, 74, 89, 32100, 11, 16, 22, 36, 37, 42, 43, 46, 61, 75, 76, 77, 88, 96, 98, 32203, 5, 8 to 11, 16, 18, 20, 21, 23, 36, 37, 38, 39, 48, 50, 51, 54, 68, 72, 74, 78, 90, 92, 93, 97, 32310, 14, 15, 26, 27, 34, 40, 47, 49, 61, 70, 89, 94, 32432, 59, 62, 67, 69, 76, 78, 82, 97, 32500, 1, 3, 7, 9, 31, 32, 44, 72, 74, 81, 86, 90, 97, 98, 32600, 3, 12, 15, 16, 17, 22, 30, 52, 63, 64, 70, 73, 83, 84, 85, 95, 32710, 24, 38, 42, 44, 51, 55, 56, 63, 64, 66, 91, 92, 98, 32802, 13, 40, 43, 48, 54, 55, 62, 67, 88, 91, 93, 95, 97, 32900, 5, 9, 11, 16, 17, 20, 22, 23, 25, 28, 31, 32, 46, 96, 97, 33010, 37, 53, 54, 57, 58, 61, 76, 34011, 17, 20, 21, 24, 26, 30, 32, 35, 45, 89, 92, 99, 34100, 9, 10, 16, 19, 21, 33, 34, 43, 49, 64, 65, 67, 93, 94, 99, 34287, 38, 43, 45, 46, 47, 54, 76, 78, 81, 96, 34302, 22, 30, 31, 32, 33, 37, 39, 46, 56, 72, 73, 81, 83, 92, 34426, 29, 31, 33, 42, 45, 49, 51, 52, 55, 85, 86, 87, 90, 99, 34504, 9, 12, 18, 23, 24, 27, 32, 34, 36, 44, 45, 49, 51, 52, 69, 71, 74, 75, 79, 81, 87, 88, 89, 95, 98, 34625, 31, 43, 48, 49, 53, 68, 69, 70, 76, 80, 90, 94, 96, 99, 34703, 13, 15, 24, 27, 37, 38, 40, 47, 49, 60, 34800, 21, 23, 28, 31, 33, 35, 40, 47, 49, 50, 56, 58, 59, 69, 72, 77, 84, 88, 34911, 12, 15, 25, 27, 35, 39, 45, 50, 51, 53, 60, 64, 65, 83, 97, 98, 35009, 11, 13, 16, 36, 39, 49, 93, 35127, 34, 42, 55, 35210, 34, 81, 86, 35335, 36, 48, 53, 54, 55, 63, 64, 67, 73, 83, 91, 35410, 32, 34, 45, 52, 58, 62, 66, 67, 68, 81, 83, 85, 88, 91, 35502, 4 to 6, 11, 13, 29, 33, 37, 57, 59, 61, 62, 66, 71, 81, 83, 90, 35605, 13, 21, 33, 37, 39, 50, 55, 57, 59, 60, 63, 65, 67, 73, 76, 77, 80, 82, 83, 86, 97, 99, 35703, 13, 16, 21, 25, 37, 59, 61, 62, 69, 70, 71, 76, 78, 79, 84, 87, 95, 96, 35809, 30, 35, 45, 52, 55, 60, 63, 64, 65, 69, 70, 81, 89, 90, 35903, 43, 45, 46, 55, 63, 68, 73, 78, 90, 36011, 19, 20, 24, 25, 42, 47, 59, 60, 71, 89, 91, 92, 93, 36145, 56, 57, 90, 36203, 10, 17, 21, 26, 29, 30, 41, 52, 55, 56, 64, 73, 82, 36304, 5, 11, 12, 13, 22, 25, 31, 33, 37, 42, 46, 52, 57, 74, 75, 92, 36435, 37, 47, 67, 70, 74, 76, 82, 36635, 37, 38, 50, 55, 70, 79, 81, 85, 87, 88, 99, 36702, 8, 9, 13, 33, 38, 46, 53, 57, 59, 70, 85, 87, 92, 95, 99, 36801, 25, 26, 32, 56, 87, 91, 96, 36912, 47, 52, 91, 95, 37001, 7, 8, 16, 18, 22, 34, 40, 44, 49, 53, 64, 94, 95, 98, 37105, 9, 11, 15, 21, 22, 30, 31, 40, 41, 44, 45, 52, 66, 76, 80, 82, 83, 84, 99, 37201, 6, 20, 23, 24, 25, 39, 46, 54, 59, 60, 70, 73, 80, 87, 95, 97, 37301, 4, 7, 10, 13, 15, 18, 21, 22, 26, 32, 44, 57, 60, 62, 70, 85, 88, 89, 90, 91, 92, 37401, 8, 16, 23, 28, 37524, 28, 31, 35, 37, 39, 40, 41, 45, 55, 58, 59, 63, 65, 70, 80, 81, 83, 37603, 4, 6, 10, 13, 15, 23, 25, 31, 37, 39, 46, 51, 54, 55, 57, 75, 79, 86, 37706, 8, 9, 11, 14, 17, 22, 23, 32, 41, 56, 69, 70, 71, 77, 83, 98, 99, 37830, 38, 41, 56, 57, 59, 66, 73, 76, 78, 83, 90, 92, 37903, 40, 62, 69, 74, 91, 93, 94, 98, 99, 38007, 8, 15, 22, 23, 35, 36, 38, 54, 60, 61, 66, 71, 80, 81, 88, 94, 38111, 14, 16, 17, 27, 31, 47, 48, 49, 57, 60, 70, 71, 72, 77, 81, 98, 38221, 30, 35, 42, 50, 66, 67, 74, 83, 90, 93, 95, 38304, 6, 8, 10, 13, 20, 27, 39, 51, 58, 59, 65, 69, 73, 82, 86, 87, 94, 97, 38406, 10, 20, 23, 24, 44, 47, 49, 52, 54, 55, 58, 60, 74, 75, 84, 86, 90, 91, 38500, 10, 11, 13, 15, 16, 25, 27, 30, 34, 37, 39, 45, 50, 53, 66, 74, 92, 94, 97, 38601, 4, 5, 7, 11, 16, 22, 24, 27, 29, 30, 37, 40, 44, 38714, 64, 65, 85, 91, 38822, 28, 37, 38, 39, 40, 53, 68, 73, 84, 85, 89, 95, 99, 38911, 19, 21, 23, 24, 27, 34, 35, 42, 49, 50, 54, 65, 67, 68, 74, 75, 76, 77, 78, 86, 39007, 9, 38, 44, 53, 56, 57, 63, 65, 71, 73, 85, 88, 91, 39113, 19, 25, 28, 30, 35, 36, 42, 44, 46, 48, 53, 68, 69, 70, 73, 84, 87, 94, 95, 99, 39216, 17, 21, 30, 55, 58, 63, 69, 77, 80, 83, 85, 97, 99, 39301, 7, 9, 11, 13, 16, 22, 28, 29, 36, 39, 45, 57, 59, 63, 67, 75, 76, 81, 84, 85, 86, 95, 96, 99, 39408, 13, 15, 20, 24, 26, 32, 35, 36, 41, 51, 58, 60, 61, 68, 70, 72, 73, 82, 84, 86, 95, 96, 39501, 2, 7, 10, 11, 12, 14, 17, 19, 20, 23, 25, 32, 33, 43, 50, 62, 64, 66, 68, 70, 71, 74, 76, 87, 89, 90, 96, 39605, 6, 7, 14, 24, 29, 38, 39, 41, 46, 60, 63, 64, 85, 39706, 12, 21, 25, 29, 31, 33, 48, 51, 65, 66, 69, 70, 82, 84, 85, 86, 94, 39804, 9, 10, 16, 17, 21, 24, 25, 26, 27, 32, 35, 38, 40, 41, 42, 49, 56, 58, 69, 73, 77, 83, 90, 39900, 3, 11, 14, 17, 29, 41, 43, 44, 46, 58, 68, 78, 86, 93, 98, 40000, 3, 14, 15, 28, 29, 62, 71, 40128, 70, 79, 90, 92, 40207, 19, 23, 29, 34, 52, 65, 40305, 21, 25, 71, 96, 40427, 29, 39, 55, 72, 92, 99, 40506, 15, 28, 33, 37, 44, 57, 66, 67, 68, 89, 40609, 14, 17, 32, 33, 40, 42, 52, 58, 62, 67, 68, 70, 78, 82, 83, 84, 87, 91, 40706, 10, 12, 18, 28, 40820, 43, 50, 56, 62, 63, 77, 40901, 4, 34, 39, 43, 46, 48, 53, 56, 64, 91, 94, 41008, 9, 21, 24, 30, 35, 36, 41, 51, 61, 62, 66, 72, 80, 91, 98, 99, 41111, 12, 30, 52, 56, 72, 75, 79, 80, 97, 99, 41207, 9, 13, 14, 18, 30, 31, 33, 35, 68, 72, 75, 79, 94, 97

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Second Class—cont.

41302, 3, 10, 12, 34, 35, 43, 50, 53, 71, 73, 74, 41401, 9, 11, 13, 16, 24, 25, 26, 29, 33, 37, 38, 39, 50, 52, 56, 58, 62, 63, 78, 80, 88, 89, 41509, 11, 15, 19, 24, 35, 46, 68, 70, 93, 98, 99, 41601, 2, 7, 22, 27, 46, 53, 55, 63, 65, 68, 97, 41701, 5, 7, 12, 31, 44, 48, 50, 51, 54, 57, 59, 74, 76, 81, 82, 88, 97, 41800, 1, 19, 25, 54, 41961, 72, 74, 78, 87, 89, 93, 94, 96, 42000, 2, 12, 19, 22, 25, 37, 39, 42, 44, 51, 55, 58, 61, 77, 78, 79, 89, 90, 95, 97, 42102, 6, 18, 36, 39, 42, 74, 78, 81, 86, 91, 42203, 16, 18, 20, 26, 37, 39, 41, 46, 47, 54, 56, 59, 70, 75, 78, 79, 84, 88, 97, 99, 42301, 17, 25, 26, 30, 37, 39, 41, 42, 46, 48, 51, 58, 61, 69, 86, 87, 90, 97, 42405, 7, 25, 27, 36, 43, 49, 50, 52, 53, 56, 57, 63, 69, 76, 84, 89, 95, 99, 42500, 5, 9, 13, 14, 24, 26, 34, 37, 42, 50, 51, 54, 56, 58, 59, 64, 65, 76, 78, 82, 90, 97, 42608, 10, 15, 32, 42, 50, 67, 75, 76, 77, 80, 81, 91, 42703, 5, 10, 16, 24, 40, 42, 47, 49, 54, 55, 58, 62, 71, 73, 77, 79, 42812, 15, 16, 24, 26, 30, 46, 59, 69, 75, 82, 90, 91, 98, 99, 42902, 3, 6, 7, 13, 20, 23, 24, 38, 40, 51, 72, 81, 86, 88, 89, 91, 94, 98, 99, 43002, 11, 14, 31, 42, 70, 98, 43106, 10, 15, 16, 20, 22, 32, 37, 43, 44, 49, 66, 79, 43200, 1 to 5, 39, 41, 99, 43310, 28, 41, 76, 43403, 4, 10, 14, 16, 21, 22, 24, 29, 30, 41, 44, 45, 46, 51, 68, 71, 80, 84, 85, 92, 93, 94, 95, 96, 97, 99, 43500, 1, 5, 6, 9, 10, 15, 28, 31, 36, 44, 62, 63, 84, 86, 89, 91, 98, 43605, 6, 12, 15, 19, 35, 41, 46, 50, 54, 58, 65, 67, 69, 76, 77, 79, 89, 43712, 21, 22, 24, XX, 29, 34, 36, 42, 50, 51, 53, 58, 10, 15, 16, 29, 33, 37, 52, 54, 43802, 9, 18, 53, 56, 64, 70, 71, 79, 43907, 8, 42, 71, 73, 81, 91, 92, 97, 44004, 10, 15, 16, 29, 33, 37, 52, 54, 66, 85, 89, 44118, 39, 42, 57, 60, 69, 77, 81, 83, 86, 44200, 8, 38, 42, 44, 48, 61, 67, 71, 74, 81, 83, 97, 44310, 12, 18, 45, 57, 44438, 42, 45, 46, 53, 70, 74, 95, 98, 44503 to 5, 10, 21, 37, 38, 39, 44, 50, 56, 69, 44675, 83, 84, 87, 93, 99, 44700, 6, 13, 15, 24, 29, 34, 36, 40, 41, 45, 50, 53, 66, 67, 76, 78, 81, 82, 84, 86, 91, 92, 44800, 7, 17, 21, 22, 25, 41, 42, 44, 45, 46, 48, 49, 55, 58, 62, 63, 80, 81, 85, 88, 89, 91, 92, 93, 95, 44901, 10, 12, 14, 15, 17, 19, 22, 26, 30, 32, 34, 39, 47, 49, 60, 62, 64, 65, 67, 75, 77, 84, 87, 92, 95, 98, 45002, 12, 13, 16, 17, 23, 26, 28, 41, 45, 61, 66, 75, 76, 83, 84, 86, 92, 45102, 4, 7, 8, 11, 12, 15, 18, 24, 36, 48, 51, 52, 57, 71, 75, 86, 87, 95, 96, 45212, 14, 16, 19, 23, 39, 47, 49, 60, 62, 64, 65, 67, 75, 77, 84, 87, 92, 95, 98, 45402, 04, 11, 13, 20, 27, 29, 30, 39, 53, 57, 60, 64, 67, 75, 82, 85, 89, 95, 45502, 04, 10, 11, 13, 17, 23, 37, 38, 42, 49, 53, 64, 68, 47, 45336, 37, 46, 49, 61, 68, 76, 79, 80, 92, 96, 45806, 19, 23, 29, 35, 40, 44, 46, 68, 73, 79, 82, 91, 90, 93, 95, 97, 45612, 14, 30, 34, 41, 42, 43, 45, 51, 65, 71, 78, 84, 85, 86, 89, 90, 96, 97, 45701, 14, 35, 41, 60, 69, 71, 82, 92, 96, 97, 45806, 19, 23, 29, 35, 40, 44, 46, 68, 73, 79, 82, 91, 95, 98, 45901, 18, 30, 50, 56, 59, 61, 62, 65, 70, 71, 88, 89, 94, 98, 46003, 05, 09, 29, 36, 40, 42, 47, 53, 61, 73, 76, 46307, 22, 23, 34, 36, 41, 82, 95, 99, 46105, 13, 14, 38, 44, 45, 55, 76, 46201, 05, 09, 29, 36, 40, 42, 47, 53, 61, 73, 76, 46307, 22, 23, 34, 36, 41, 43, 45, 50, 52, 70, 73, 74, 84, 88, 93, 99, 46422, 30, 34, 48, 53, 56, 66, 80, 82, 85, 92, 93, 94, 99, 46504, 06, 12, 33, 38, 39, 48, 49, 52, 62, 79, 89, 46610, 41, 44, 45, 50, 54, 56, 57, 59, 63, 70, 80, 85, 88, 89, 46705, 20, 24, 33, 52, 53, 60, 64, 65, 67, 68, 69, 74, 75, 88, 97, 46817, 19, 20, 22, 29, 30, 31, 40, 47, 54, 56, 57, 58, 69, 75, 76, 77, 78, 86, 89, 91, 94, 97, 46917, 18, 26, 36, 38, 49, 50, 59, 69, 80, 47002, 08, 15, 18, 21, 24, 26, 27, 34, 44, 50, 54, 57, 59, 62, 65, 70, 73, 77, 80, 87, 95, 96, 98, 47100, 08, 13, 14, 34, 43, 46, 55, 58, 60, 64, 65, 68, 79.

The results of the candidates with register numbers 21351 and 24480 are withheld.

TYPEWRITING—ENGLISH (HIGHER.)

First Class.

671, 1513, 2050, 2599, 2734, 3027, 3858, 4784, 4797, 5282, 5287, 5327, 5512, 5736, 5931, 6428, 6475, 6497, 9200, 10138, 10823, 10827, 10857, 10869, 10872, 11101, 11132, 11807, 11816, 12807, 13542, 13558, 13723, 13988, 14497, 15640, 15791, 16353, 16880, 17363, 18515, 18704, 19008, 19314, 20129, 20408, 20858, 20899, 20978, 21034, 21126, 21569, 22373, 22578, 2291

TYPEWRITING—ENGLISH (HIGHER)—cont.

Second Class—cont.

21, 28, 29, 32, 39, 48, 53, 60, 67, 74, 82, 92, 5804, 25, 29, 39, 40, 45, 47, 49, 53, 54, 66, 80, 91, 5929, 32, 43, 76, 81, 89, 90, 6066, 73, 83, 87, 6119, 76, 6200, 26, 35, 40, 61, 76, 86, 6343, 63, 81, 87, 89, 6409, 15, 34, 66, 84, 89, 91, 92, 99, 6532, 48, 52, 81, 97, 98, 6631, 95, 6725, 37, 6830, 80, 6911, 36, 39, 50, 63, 85, 7004, 6, 24, 25, 32, 37, 41, 46, 59, 80, 87, 7154, 88, 99, 7201, 3, 23, 25, 37, 38, 48, 63, 72, 73, 75, 7308, 14, 30, 60, 79, 83, 7406, 9, 60, 62, 97, 7563, 86, 7634, 7729, 32, 33, 41, 71, 86, 87, 7832, 51, 74, 7938, 41, 47, 49, 79, 89, 8033, 34, 60, 66, 77, 93, 8109, 19, 8293, 8300, 37, 54, 79, 92, 8413, 21, 24, 26, 31, 35, 48, 88, 90, 8502, 15, 72, 8603, 9, 54, 75, 80, 86, 8736, 54, 61, 71, 74, 81, 8811, 31, 70, 71, 91, 8911, 9002, 29, 54, 55, 99, 9118, 42, 74, 78, 94, 98, 9202, 7, 38, 70, 72, 89, 9366, 70, 9413, 51, 61, 67, 74, 80, 94, 98, 9510, 13, 15, 55, 9607, 11, 16, 17, 47, 50, 9748, 9874, 75, 81, 84, 85, 9917, 70, 10004, 19, 27, 55, 81, 95, 10125, 89, 10223, 24, 56, 63, 71, 10371, 78, 90, 10406, 14, 15, 16, 17, 61, 70, 71, 10500, 2, 36, 40, 48, 10662, 78, 10717, 61, 10814, 16, 30, 31, 32, 33, 42, 46, 55, 59, 66, 75, 82, 10913, 19, 27, 30, 31, 43, 55, 84, 96, 11005, 19, 20, 27, 35, 39, 41, 48, 72, 95, 11115, 21, 23, 38, 91, 11224, 33, 42, 61, 95, 11316, 69, 87, 91, 95, 11420, 82, 91, 11521, 55, 81, 91, 11605, 10, 15, 16, 23, 31, 38, 47, 75, 86, 87, 90, 91, 93, 94, 11704, 10, 23, 31, 76, 98, 11812, 37, 43, 48, 11944, 55, 60, 65, 66, 75, 81, 12007, 69, 77, 91, 12115, 30, 32, 54, 68, 12202, 50, 58, 62, 67, 12367, 74, 86, 12401, 17, 29, 33, 36, 53, 61, 63, 71, 82, 96, 12506, 12, 68, 12600, 56, 70, 95, 96, 12702, 36, 38, 56, 68, 91, 93, 98, 12839, 47, 12902, 23, 31, 66, 91, 95, 13007, 8, 17, 20, 27, 40, 64, 72, 75, 81, 13110, 26, 82, 98, 13200, 10, 19, 42, 56, 13314, 30, 35, 41, 62, 84, 96, 13400, 39, 44, 66, 73, 80, 87, 90, 96, 13544, 62, 66, 67, 68, 75, 86, 13603, 21, 29, 13747, 55, 64, 13877, 83, 85, 13912, 19, 52, 58, 73, 82, 14008, 30, 47, 63, 69, 78, 98, 14102, 13, 17, 21, 34, 96, 14214, 16, 18, 23, 69, 77, 14328, 45, 49, 51, 94, 99, 14404, 6, 18, 29, 58, 63, 73, 80, 84, 91, 92, 98, 14516, 32, 36, 41, 44, 48, 54, 90, 93, 94, 14603, 52, 68, 89, 14744, 61, 14832, 36, 47, 48, 51, 53, 63, 14907, 11, 16, 33, 35, 55, 63, 15007, 49, 61, 68, 15107, 12, 22, 44, 83, 93, 96, 15204, 7, 66, 69, 71, 74, 99, 15315, 67, 75, 79, 15407, 25, 60, 63, 15529, 30, 31, 35, 40, 53, 58, 71, 73, 82, 83, 84, 88, 15600, 9, 23, 45, 55, 57, 15706, 15, 30, 32, 56, 59, 93, 15814, 22, 30, 39, 46, 66, 76, 15920, 25, 37, 50, 55, 75, 16007, 59, 63, 91, 16140, 60, 67, 73, 16206, 8, 36, 46, 76, 80, 92, 93, 98, 16310, 14, 51, 60, 67, 68, 71, 91, 92, 16403, 7, 21, 26, 30, 31, 38, 47, 60, 69, 72, 77, 87, 95, 16509, 11, 14, 34, 51, 69, 72, 16603, 13, 32, 54, 83, 92, 93, 16703, 17, 34, 36, 92, 94, 16807, 34, 47, 70, 83, 89, 96, 16911, 33, 41, 67, 76, 84, 96, 17020, 22, 24, 27, 49, 53, 58, 87, 95, 96, 99, 17125, 30, 55, 63, 69, 73, 85, 86, 95, 17227, 37, 44, 61, 76, 84, 99, 17316, 19, 53, 74, 94, 17434, 55, 59, 60, 62, 91, 17507, 9, 12, 31, 32, 60, 64, 73, 75, 78, 88, 17600, 8, 9, 11, 13, 51, 55, 62, 67, 72, 79, 94, 98, 17701, 38, 46, 51, 59, 66, 69, 75, 78, 91, 17819, 54, 86, 17916, 29, 56, 73, 87, 97, 18002, 9, 15, 22, 34, 94, 18106, 8, 57, 67, 83, 84, 18220, 26, 29, 65, 66, 70, 72, 80, 81, 94, 18337, 46, 18400, 24, 44, 86, 18517, 68, 79, 83, 86, 93, 95, 18608, 10, 16, 25, 30, 34, 48, 57, 77, 78, 83, 94, 97, 18709, 10, 15, 61, 78, 18814, 18, 43, 44, 56, 58, 62, 85, 91, 97, 18902, 3, 6, 7, 13, 20, 65, 85, 91, 94, 19014, 27, 35, 41, 50, 64, 19112, 16, 18, 71, 19200, 1, 3, 4, 10, 43, 44, 46, 68, 71, 72, 76, 79, 84, 19309, 11, 23, 34, 44, 56, 19415, 52, 69, 73, 91, 19500, 28, 44, 47, 88, 91, 92, 93, 19604, 7, 9, 29, 47, 48, 77, 78, 19720, 23, 24, 28, 29, 41, 80, 19838, 40, 56, 60, 64, 75, 91, 19910, 27, 39, 20032, 77, 82, 20115, 26, 51, 63, 67, 78, 87, 93, 20212, 47, 49, 67, 79, 20309, 25, 27, 39, 59, 67, 76, 86, 87, 90, 92, 20401, 2, 7, 27, 29, 56, 67, 68, 80, 85, 20506, 35, 36, 48, 57, 61, 78, 81, 83, 92, 95, 20603, 11, 20, 21, 36, 37, 39, 50, 67, 71, 76, 77, 20730, 91, 20828, 30, 34, 38, 59, 73, 84, 86, 20916, 17, 21, 37, 77, 81, 82, 97, 21008, 60, 84, 88, 90, 99, 21103, 16, 18, 23, 27, 32, 55, 57, 58, 72, 98, 21206, 18, 20, 28, 31, 41, 53, 58, 86, 87, 94, 98, 21311, 34, 40, 65, 67, 77, 95, 21407, 42, 89, 21502, 4, 15, 22, 28, 35, 39, 65, 80, 91, 92, 21604, 8, 9, 13, 14, 17, 35, 38, 54, 67, 89, 21700, 55, 79, 91, 21801, 9, 16, 21, 37, 42, 61, 66, 69, 21906, 7, 9, 12, 22, 46, 48, 49, 61, 67, 70, 97, 22059, 65, 73, 83, 84, 99, 22116, 24, 25, 35, 40, 41, 51, 64, 71, 73, 81, 82, 84, 22211, 39, 41, 22301, 6, 14, 22, 25, 67, 69, 72, 74, 76, 77, 83, 84, 85, 92, 22406, 24, 72, 82, 97, 22501, 40, 43, 45, 66, 72, 80, 93, 22604, 27, 30, 35, 37, 50, 59, 93, 98, 22768, 77, 22924, 52, 26, 40, 53, 54, 68, 76, 84, 88, 23005, 14, 32, 54, 56, 68, 23105, 31, 34, 55, 66, 67, 78, 81, 97, 23202, 9, 22, 23, 32, 46, 47, 53, 58, 79, 89, 23307, 11, 18, 28, 36, 42, 61, 64, 66, 23404, 36, 54, 74, 85, 97, 99, 23502, 49, 68, 70, 86, 23613, 14, 16, 18, 26, 33, 34, 44, 51, 70, 76, 79, 23730, 42, 44, 58, 23884, 92, 23920, 33, 24007, 32, 41, 43, 53, 24138, 57, 62, 96, 98, 24220, 24, 36, 81, 24303, 11, 15, 16, 26, 30, 72, 94, 24400, 26, 44, 49, 54, 57, 65, 95, 97, 24519, 38, 72, 76, 80, 84, 88, 89, 92, 24605, 82, 99, 24705, 6, 15, 25, 30, 38, 40, 43, 50, 52, 61, 62, 72, 24801, 25, 44, 56, 72, 77, 24902, 15, 17, 42, 52, 53, 86, 88, 25021, 37, 42, 43, 79, 90, 25113, 33, 39, 43, 65, 84, 25202, 3, 7, 22, 35, 63, 69, 70, 73, 81, 86, 25313, 20, 21, 30, 33, 43, 65, 87, 91, 25427, 50, 62, 25544, 53, 56, 62, 79, 25603, 6, 7, 10, 19, 24, 27, 57, 63, 67, 72, 81, 25708, 9, 28, 78, 83, 92, 94, 25802, 25, 85, 25910, 22, 26, 50, 66, 82, 26016, 34, 48, 53, 57, 64, 65, 86, 91, 94, 26101, 21, 46, 48, 89, 96, 99, 26201, 3, 6, 10, 21, 31, 33, 46, 50, 99, 26502, 11, 21, 25, 43, 63, 64, 65, 90, 95, 26665, 66, 68, 73, 81, 97, 26703, 27, 32, 26824, 38, 55, 72, 74, 26900, 18, 24, 28, 29, 35, 36, 50, 60, 64, 88, 91, 93, 94, 96, 27006, 21, 46, 48, 50, 55, 59, 94, 96, 27106, 14, 19, 34, 48, 81, 92, 94, 27224, 31, 40, 47, 85, 27349, 64, 72, 75, 27428, 34, 72, 77, 82, 88, 97, 27511, 19, 28, 35, 49, 52, 59, 80, 90, 27621, 22, 24, 70, 75, 27700, 10, 13, 36, 40, 53, 63, 78, 85, 27857, 62, 64, 70, 73, 27914, 17, 28, 36, 37, 39, 44, 45, 67, 71, 86, 98, 28000, 3, 5, 13, 14, 34, 59, 66, 67, 85, 87, 28117, 22, 35, 43, 58, 64, 75, 91, 28250, 22, 28306, 16, 19, 28, 43, 49, 83, 28409, 10, 14, 46, 52, 54, 56, 77, 87, 28515, 17, 30, 63, 67, 69, 28602, 4, 9, 17, 18, 20, 25, 35, 34, 38, 41, 51, 65, 84, 28702, 3, 4, 11, 17, 21, 47, 50, 57, 77, 86, 89, 28831, 43, 50, 55, 28928, 62, 29004, 10, 11, 30, 44, 74, 29120, 23, 71, 79, 97, 29222, 74, 78, 29303, 31, 32, 87, 88, 29405, 22, 25, 29512, 19, 24, 29, 33, 35, 36, 41, 45, 68, 70, 29613, 25, 30, 91, 95, 29707, 33, 68, 71, 73, 77, 38, 40, 72, 78, 82, 83, 29812, 16, 36, 46, 47, 57, 71, 74, 89, 95, 30000, 58, 61, 64, 98, 30109, 34, 36, 37, 40, 50, 66, 17, 22, 26, 63, 71, 29906, 23, 29, 62, 30303, 5, 33, 46, 47, 50, 68, 71, 30411, 75, 30510, 99, 30609, 16, 20, 21, 29, 35, 37, 38, 80, 85, 30764, 67,

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72, 30801, 18, 32, 46, 49, 68, 76, 98, 30911, 37, 90, 31028, 33, 39, 58, 62, 73, 31102, 11, 73, 31207, 10, 20, 32, 94, 31300, 07, 20, 71, 72, 73, 90, 96, 31432, 51, 78, 93, 31526, 82, 85, 98, 31638, 41, 46, 47, 55, 65, 67, 71, 79, 88, 92, 31701, 23, 31, 32, 73, 90, 94, 99, 31815, 29, 40, 51, 31900, 1, 34, 39, 89, 93, 32018, 21, 40, 69, 76, 32187, 93, 95, 32206, 07, 13, 15, 19, 33, 34, 47, 55, 57, 60, 79, 98, 32303, 18, 21, 67, 73, 87, 32452, 61, 70, 32505, 14, 28, 40, 45, 50, 62, 73, 76, 32607, 23, 71, 81, 92, 97, 32705, 22, 28, 95, 32810, 12, 39, 66, XX, XX, XX, XX, XX, 68, 77, 83, 84, 32913, 63, 66, 33044, 49, 55, 34012, 14, 31, 34, 38, 41, 54, 56, 68, 70, 82, 97, 34103, 6, 12, 18, 26, 35, 38, 48, 51, 52, 54, 59, 70, 82, 83, 95, 96, 34204, 11, 15, 17, 28, 34, 80, 34308, 24, 36, 41, 49, 54, 74, 86, 34410, 15, 16, 25, 35, 36, 38, 47, 54, 57, 58, 83, 94, 95, 34501, 16, 19, 37, 41, 61, 64, 86, 97, 34600, 14, 16, 66, 67, 85, 86, 91, 34701, 02, 04, 07, 10, 19, 21, 31, 34, 35, 39, 42, 48, 93, 34834, 36, 38, 41, 78, 86, 96, 34916, 23, 24, 37, 40, 57, 67, 70, 76, 79, 89, 35000, 20, 29, 32, 79, 86, 89, 35132, 54, 58, 35225, 36, 35303, 39, 51, 84, 86, 88, 96, 99, 35407, 21, 22, 27, 50, 57, 61, 71, 73, 74, 76, 80, 86, 35503, 15, 45, 35604, 36, 51, 62, 69, 35734, 43, 64, 65, 93, 98, 35814, 16, 32, 36, 40, 61, 71, 35901, 2, 40, 42, 62, 65, 69, 36005, 17, 21, 39, 40, 44, 36183, 93, 95, 36214, 33, 50, 66, 67, 97, 36307, 17, 23, 24, 30, 35, 53, 59, 80, 82, 91, 94, 98, 36401, XX, XX, XX, 9, 10, 27, 34, XX, XX, XX, 40, 56, 57, 60, 66, 88, 89, 98, 36572, 79, 36602, 32, 42, 36701, 12, 18, 50, 60, 65, 66, 67, 74, 75, 76, 97, 36819, 21, 22, 34, 37, 40, 50, 58, 67, 75, 83, 36900, 8, 15, 17, 24, 32, 43, 45, 54, 72, 74, 78, 85, 87, 90, 92, 99, 37003, 41, 56, 59, 69, 74, 82, 37103, 7, 20, 27, 62, 67, 37207, 8, 45, 48, 55, 58, 72, 86, 89, 37323, 24, 33, 45, 56, 63, 64, 93, 37406, 15, 29, 42, 56, 75, 78, 37521, 36, 38, 72, 37612, 41, 45, 52, 77, 37710, 18, 25, 35, 48, 59, 66, 68, 93, 37833, 34, 65, 74, 37910, 16, 23, 40, 46, 61, 68, 70, 77, 80, 84, 85, 38009, 18, 31, 42, 57, 65, 69, 72, 73, 77, 38100, 24, 26, 30, 45, 53, 62, 91, 38238, 46, 59, 70, XX, XX, 85, 89, 38302, 26, 36, 50, 63, 66, 68, 38400, 05, 08, 09, 27, 37, 56, 59, 70, 92, 99, 38517, 69, 82, 87, 38608, 20, 21, 32, 87, 92, 38705, 06, 26, 38, 69, 38824, 51, 69, 38906, 17, 29, 32, 33, 37, 92, 39000, 01, 20, 21, 24, 39, 41, 55, 59, 66, 78, 82, 89, 95, 99, 39108, 10, 11, 15, 17, 18, 21, 34, 49, 58, 86, 39206, 19, 43, 86, 88, 94, 39303, 14, 24, 31, 61, 62, 72, 93, 39404, 05, 10, 11, 12, 17, 22, 23, 31, 52, 59, 67, 77, 90, 92, 39503, 04, 06, 09, 24, 29, 30, 31, 41, 44, 58, 60, 63, 65, 95, 97, 99, 39600, 02, 08, 16, 33, 47, 54, 90, 39700, 10, 14, 37, 56, 62, 63, 39808, 11, 28, 43, 48, 57, 80, 87, 91, 39933, 42, 72, 81, 40022, 57, 95, 40163, 82, 89, 91, 40210, 16, 24, 25, 30, 40353, 83, 40449, 58, 69, 79, 80, 84, 90, 93, 40500, 03, 08, 23, 38, 82, 55, 63, 75, 79, 82, 93, 40602, 08, 19, 25, 44, 50, 60, 79, 40776, 40825, 38, 53, 71, 74, 92, 40916, 19, 26, 44, 45, 52, 66, 68, 73, 78, 89, 96, 41000, 03, 07, 16, 20, 23, 25, 34, 38, 54, 67, 76, 85, 90, 97, 41105, 41, 64, 41208, 32, 38, 41, 63, 74, 81, 95, 41306, 25, 30, 49, 52, 64, 68, 77, 91, 94, 96, 97, 41412, 15, 21, 30, 31, 60, 61, 82, 83, 41504, 59, 65, 72, 79, 89, 90, 92, 41610, 54, 60, 82, 84, 86, 89, 41717, 21, 27, 56, 75, 87, 93, 41868, 83, 41976, 83, 98, 99, 420021, 14, 20, 21, 24, 56, 73, 74, 91, 42105, 08, 19, 25, 57, 62, 63, 79, 42211, 30, 36, 63, 64, 71, 98, 42305, 15, 32, 57, 89, 42409, 14, 26, 29, 38, 39, 61, 68, 82, 86, 96, 42511, 18, 19, 63, 69, 70, 83, 42804, 32, 34, 42, 78, 79, 42925, 30, 62, 77, 71, 84, 96, 42700, 02, 25, 26, 28, 29, 31, 38, 45, 48, 52, 59, 63, 69, 70, 83, 42804, 32, 34, 42, 78, 79, 42925, 30, 62, 77, 43024, 54, 62, 67, 73, 43101, 02, 05, 84, 90, 94, 43209, 59, 79, 43380, 83, 89, 97, 43405, 19, 31, 35, 52, 55, 56, 62, 77, 79, 43511, 13, 82, 43644, 53, 59, 68, 81, 84, 86, 93, 94, 96, 43714, 15, 16, 18, 27, 31, 38, 70, 74, 43865, 73, 78, 90, 98, 43915, 24, 47, 74, 93, 44017, 28, 31, 39, 46, 50, 59, 64, 96, 44105, 32, 62, 44211, 15, 19, 44313, 46, 56, 63, 67, 68, 74, 89, 44427, 56, 63, 68, 79, 84, 87, 44502, 11, 16, 48, 51, 98, 44637, 71, 72, 81, 85, 92, 44721, 23, 26, 56, 59, 60, 62, 63, 72, 89, 90, 44810, 28, 29, 30, 47, 67, 68, 78, 94, 44900, 20, 24, 43, 45, 56, 66, 83, 90, 91, 45201, 08, 10, 26, 31, 81, 45312, 34, 36, 39, 43, 54, 55, 58, 60, 64, 68, 72, 77, 93, 96, 97, 45146, 50, 58, 66, 83, 90, 91, 45201, 08, 10, 26, 31, 81, 45312, 45, 59, 89, 90, 45414, 18, 21, 26, 32, 36, 51, 84, 86, 45501, 03, 07, 29, 71, 74, 77, 86, 89, 45603, 38, 48, 75, 82, 45700, 12, 31, 36, 47, 62, 66, 91, 45817, 25, 26, 30, 38, 53, 54, 76, 77, 84, 45912, 54, 63, 74, 84, 46039, 64, 66, 93, 46159, 46208, 12, 18, 32, 33, 38, 62, 72, 93, 94, 46310, 11, 19, 71, 80, 83, 97, 46401, 07, 10, 12, 19, 29, 40, 43, 70, 71, 96, 46508, 18, 22, 28, 54, 56, 71, 88, 93, 46616, 40, 66, 73, 92, 46706, 15, 25

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Second Class—cont.

20818, 30, 31, 49, 57, 59, 74, 75, 79, 20954, 21004, 6, 13, 23, 40, 42, 80, 21108, 36, 75, 21206, 18, 50, 61, 63, 76, 83, 98, 21308, 15, 25, 38, 53, 54, 21508, 16, 23, 44, 47, 48, 56, 71, 86, 90, 21603, 21, 45, 72, 79, 21704, 73, 21811, 25, 44, 49, 52, 58, 79, 81, 87, 96, 21909, 31, 34, 35, 82, 22017, 31, 41, 69, 76, 96, 22104, 6, 12, 34, 81, 90, 93, 22244, 45, 51, 65, 80, 22307, 61, 62, 65, 22412, 41, 97, 99, 22503, 10, 13, 46, 56, 72, 89, 22600, 11, 17, 23, 32, 33, 36, 39, 45, 58, 98, 22734, 22935, 46, 47, 83, 85, 92, 23008, 30, 31, 79, 85, 88, 98, 23110, 53, 23206, 20, 56, 58, 66, 68, 94, 23300, 6, 15, 42, 45, 76, 92, 23454, 90, 23504, 23, 30, 36, 39, 44, 49, 77, 95, 23606, 8, 42, 44, 49, 51, 23701, 44, 52, 77, 92, 95, 23888, 90, 92, 93, 23917, 18, 30, 39, 48, 60, 73, 24005, 8, 23, 32, 38, 56, 24120, 42, 46, 51, 63, 75, 76, 82, 24243, 49, 51, 58, 73, 76, 85, 91, 99, 24303, 28, 29, 49, 81, 24434, 35, 63, 66, 24523, 35, 37, 45, 46, 58, 75, 91, 24606, 17, 23, 24, 40, 24728, 37, 39, 52, 78, 79, 86, 95, 24840, 47, 51, 56, 88, 98, 24900, 25021, 22, 84, 93, 94, 21538, 50, 86, 94, 25201, 24, 30, 45, 50, 53, 64, 92, 25325, 37, 39, 44, 60, 25421, 26, 31, 44, 45, 54, 58, 71, 25531, 88, 89, 96, 25624, 39, 57, 60, 61, 68, 81, 25700, 5, 12, 16, 24, 38, 41, 43, 77, 85, 25803, 9, 12, 38, 45, 57, 71, 25531, 88, 89, 96, 25624, 39, 57, 60, 61, 68, 81, 25700, 5, 12, 16, 24, 38, 41, 43, 77, 85, 25803, 9, 12, 38, 45, 57, 63, 70, 83, 95, 99, 25918, 35, 51, 78, 26041, 64, 81, 26149, 89, 90, 92, 26203, 16, 34, 35, 50, 52, 64, 94, 26329, 58, 61, 26454, 61, 71, 77, 26506, 49, 71, 26626, 31, 42, 50, 57, 86, 26702, 25, 31, 26821, 38, 51, 62, 64, 26935, 40, 43, 50, 63, 74, 81, 87, 90, 27050, 68, 69, 87, 27103, 45, 27207, 71, 83, 27307, 57, 58, 59, 71, 72, 27402, 18, 19, 26, 40, 65, 71, 73, 77, 78, 95, 27512, 26, 49, 75, 76, 80, 82, 83, 27619, 20, 49, 50, 95, 27709, 26, 36, 45, 48, 27805, 6, 65, 78, 27905, 6, 20, 35, 36, 37, 66, 67, 28024, 44, 51, 60, 28107, 13, 39, 41, 44, 97, 28252, 618, 28308, 42, 28403, 37, 44, 28520, 23, 33, 37, 50, 54, 75, 77, 94, 99, 28654, 55, 71, 85, 93, 94, 95, 98, 28710, 19, 33, 34, 39, 52, 63, 74, 28831, 39, 47, 82, 96, 98, 99, 28921, 31, 32, 40, 49, 59, 60, 29002, 3, 19, 66, 79, 29127, 30, 41, 47, 52, 78, 97, 29276, 79, 85, 98, 29453, 68, 75, 29508, 16, 29616, 21, 60, 91, 29789, 29804, 23, 48, 78, 29907, 9, 12, 63, 74, 77, 84, 30045, 52, 53, 77, 30116, 35, 36, 41, 53, 61, 62, 72, 30202, 8, 12, 16, 23, 40, 45, 46, 80, 81, 30320, 34, 42, 53, 92, 30403, 64, 67, 83, 87, 30516, 19, 30644, 64, 70, 30705, 54, 61, 70, 71, 73, 30814, 17, 31, 39, 61, 64, 71, 73, 79, 30911, 15, 37, 42, 76, 93, 31003, 4, 14, 33, 42, 54, 68, 70, 81, 83, 84, 85, 87, 89, 90, 91, 31107, 21, 29, 68, 85, 98, 31200, 9, 12, 20, 24, 25, 82, 92, 31309, 35, 50, 93, 31451, 96, 31515, 66, 68, 75, 80, 84, 85, 99, 31622, 25, 27, 35, 40, 43, 62, 71, 82, 88, 95, 31713, 14, 84, 98, 31817, 27, 31930, 43, 47, 60, 63, 64, 85, 91, 32012, 14, 40, 43, 44, 58, 59, 65, 90, 32136, 38, 54, 63, 32224, 27, 39, 44, 48, 70, 87, 89, 94, 95, 32300, 6, 28, 51, 57, 59, 32452, 55, 70, 73, 74, 79, 87, 88, 89, 32504, 5, 28, 31, 77, 32656, 57, 73, 32713, 22, 36, 85, 88, 32884, 32942, 64, 73, 33012, 47, 75, 79, 34056, 57, 34122, 34250, 34308, 12, 34406, 34552, 57, 80, 34733, 67, 72, 95, 34803, 7, 90, 98, 34907, 14, 93, 35073, 35132, 39, 43, 63, 96, 35212, 24, 35308, 10, 34, 35413, 25, 38, 70, 80, 96, 35554, 35616, 20, 43, 35754, 35838, 49, 58, 35911, 93, 36003, 13, 37, 45, 95, 96, 36105, 8, 26, 65, 36202, 28, 90, 36319, 36520, 46, 99, 36727, 62, 94, 36828, 53, 59, 67, 36916, 17, 30, 83, 37073, 74, 91, 37112, 14, 64, 69, 90, 92, 37286, 37453, 64, 84, 37536, 38, 43, 96, 37601, 87, 98, 37707, 22, 30, 89, 37811, 24, 50, 84, 37910, 35, 65, 87, 38031, 58, 85, 86, 38122, 38319, 62, 38402, 25, 51, 92, 38536, 47, 38608, 14, 43, 68, 96, 38740, 52, 38869, 38996, 39029, 31, 33, 39218, 74, 39342, 91, 39425, 50, 39534, 35, 54, 67, 39726, 53, 83, 39845, 39988, 40095, 40122, 37, 40225, 40, 71, 40379, 40414, 64, 40502, 47, 88, 95, 40622, 38, 54, 93, 40726, 45, 46, 40841, 72, 73, 40903, 32, 68, 84, 92,

TYPEWRITING—TAMIL (HIGHER)—*cont.*

First Class.

Second Class.

13. 45, 46, 66, 125, 94, 209, 31, 34, 89, 306, 88, 443, 64, 587, 613, 82, 705, 33, 76, 99, 801, 910, 11, 1000,
22, 76, 1114, 50, 123, 1317, 329, 354, 1444, 445, 452, 1509, 510, 513, 561, 575, 1603, 605, 616, 643, 655, 673, 688,
693, 1704, 723, 728, 733, 739, 748, 751, 760, 797, 1814, 856, 864, 891, 1940, 973, 975, 990, 2000, 36, 45, 2108, 120,
157, 182, 2213, 276, 2366, 367, 374, 384, 395, 2403, 417, 459, 466, 477, 478, 480, 482, 490, 491, 497, 2506, 520,
521, 529, 534, 550, 561, 582, 592, 598, 2602, 609, 612, 625, 627, 630, 639, 646, 667, 675, 2707, 714, 732, 740.

TYPEWRITING—TAMIL (HIGHER)—cont.

Second Class—cont.

741, 745, 746, 754, 758, 764, 784, 799, 2801, 806, 812, 830, 833, 839, 841, 866, 869, 884 to 86, 2906, 907, 967, 968, 974, 3023, 57, 64, 67, 88, 3136, 3260, 3309, 323, 334, 338, 370, 387, 3401, 402, 424, 432, 448, 463, 464, 474, 3537, 3602, 605, 607, 609, 617, 648, 3753, 768, 3853, 4010, 77, 4137, 4249, 4331, 380, 4408, 499, 4509, 523, 538, 566, 578, 4810, 819, 828, 4944, 946, 972, 981, 5003, 16, 20, 5120, 129, 135, 167, 5267, 297, 5307, 310, 317, 354, 363, 5435, 458, 469, 474, 475, 483, 494, 5503, 521, 522, 530, 537, 551, 582, 5602, 603, 654, 660, 662, 667, 672, 677, 691, 5719, 736, 754, 768, 778, 784, 798, 5810, 830, 848, 850, 854, 891, 6073, 89, 6222, 229, 234, 237, 254, 257, 268, 6314, 319, 325, 330, 6415, 421, 425, 467, 475, 478, 6506, 515, 522, 528, 576, 6609, 674, 699, 6768, 779, 6838, 849, 879, 883, 888, 6925, 7025, 33, 35, 36, 47, 72, 76, 83, 7164, 7205, 240, 277, 296, 7320, 340, 384, 7406, 409, 443, 456, 461, 7528, 556, 557, 567, 7621, 625, 662, 674, 7709, 728, 7939, 945, 8051, 93, 8108, 145, 8298, 8327, 338, 387, 392, 8415, 8511, 521, 537, 8701, 707, 777, 8878, 9026, 35, 44, 53, 55, 62, 84, 9115, 156, 9294, 9314, 327, 368, 378, 9480, 491, 9513, 529, 560, 595, 9692, 9720, 723, 9949, 959, 10070, 79, 80, 99, 10116, 10247, 285, 291, 10360, 366, 385, 10416, 430, 10527, 10655, 10738, 772, 774, 10834, 840, 856, 10989, 11038, 93, 11133, 40, 182, 187, 188, 11248, 54, 89, 11307, 08, 45, 80, 91, 11423, 61, 66, 11530, 87, 11603, 610, 611, 15, 21, 23, 26, 38, 43, 90, 97, 11711, 95, 11800, 42, 68, 11921, 72, 12092, 12136, 12210, 13, 19, 12319, 20, 74, 81, 12427, 31, 42, 47, 56, 57, 72, 74, 91, 12600, 656, 88, 99, 12708, 34, 66, 72, 93, 12841, 863, 66, 91, 97, 12966, 79, 13004, 55, 83, 13219, 21, 25, 66, 79, 86, 13312, 14, 35, 40, 13474, 79, 13567, 569, 13608, 11, 21, 29, 37, 52, 13744, 13850, 83, 87, 98, 13951, 53, 58, 68, 72, 73, 98, 99, 14006, 37, 44, 70, 73, 88, 98, 14115, 17, 22, 30, 33, 39, 89, 14208, 17, 40, 41, 46, 69, 79, 91, 97, 14300, 04, 39, 73, 87, 14417, 23, 35, 43, 59, 67, 80, 86, 93, 14508, 10, 16, 25, 27, 30, 32, 36, 41, 43, 45, 47, 48, 76, 79, 88, 90, 98, 14616, 17, 22, 48, 60, 90, 14712, 41, 43, 45, 59, 71, 75, 14826, 62, 65, 76, 83, 84, 15008, 36, 38, 51, 58, 15106, 12, 58, 60, 80, 83, 84, 99, 15211, 40, 55, 60, 70, 15317, 40, 41, 75, 89, 15407, 10, 13, 17, 19, 26, 50, 96, 15509, 22, 63, 71, 15610, 58, 73, 15712, 70, 15824, 25, 58, 15923, 31, 91, 16023, 16101, 43, 50, 69, 87, 16221, 22, 16302, 17, 54, 77, 16422, 39, 43, 62, 16516, 39, 40, 61, 82, 16605, 28, 65, 98, 16716, 21, 33, 37, 43, 60, 63, 16858, 72, 79, 16926, 47, 52, 17068, 92, 96, 17120, 39, 43, 53, 54, 59, 65, 88, 98, 17206, 17435, 39, 98, 17526, 48, 60, 17612, 36, 50, 17715, 19, 20, 53, 65, 17845, 17962, 18127, 37, 82, 18259, 18430, 18587, 18609, 69, 96, 18734, 36, 18814, 34, 39, 55, 58, 61, 65, 76, 83, 18909, 21, 60, 19053, 87, 19104, 12, 18, 19259, 78, 19325, 29, 59, 68, 76, 19411, 13, 52, 19606, 14, 27, 42, 45, 86, 19724, 19832, 39, 50, 19967, 77, 20024, 96, 20101, 37, 44, 45, 20205, 18, 76, 84, 20309, 11, 50, 69, 20427, 466, 20527, 31, 59, 85, 20666, 81, 20730, 37, 20819, 60, 65, 70, 93, 20955, 21059, 86, 21148, 21260, 75, 21301, 12, 47, 52, 75, 81, 82, 91, 21418, 40, 21506, 7, 20, 31, 84, 21609, 17, 25, 21893, 21924, 22056, 59, 66, 71, 91, 22124, 46, 52, 62, 65, 89, 22202, 38, 61, 82, 97, 22311, 12, 95, 98, 22400, 29, 39, 22588, 22607, 16, 30, 31, 37, 40, 57, 22842, 22911, 28, 36, 43, 94, 97, 23020, 37, 39, 62, 23112, 52, 59, 63, 23233, 81, 23328, 37, 53, 81, 89, 23426, 23455, 76, 23524, 27, 69, 72, 76, 23646, 58, 23726, 42, 23816, 80, 23901, 4, 12, 14, 21, 77, 88, 24041, 67, 81, 24166, 70, 73, 93, 24217, 25, 36, 74, 24315, 21, 47, 96, 24404, 51, 75, 24541, 47, 71, 89, 24615, 82, 98, 24841, 73, 24906, 13, 27, 25037, 79, 25117, 26, 63, 25225, 36, 25324, 77, 25446, 58, 62, 75, 76, 25503, 42, 80, 81, 25672, 25709, 25, 52, 60, 94, 25843, 77, 79, 80, 90, 97, 26034, 43, 45, 51, 73, 80, 26144, 26215, 25, 30, 32, 36, 87, 26344, 46, 83, 26439, 93, 98, 26546, 87, 88, 26602, 44, 59, 60, 80, 81, 82, 97, 26714, 29, 34, 26800, 42, 58, 70, 79, 26925, 28, 33, 51, 27060, 66, 27117, 41, 27259, 78, 98, 27304, 52, 27437, 48, 67, 72, 27510, 35, 40, 48, 81, 27614, 15, 73, 27700, 7, 27801, 3, 51, 87, 90, 99, 27925, 26, 44, 97, 28059, 83, 91, 28111, 20, 23, 59, 68, 71, 91, 28246, 85, 28347, 28402, 10, 28529, 72, 73, 78, 80, 28616, 24, 35, 28714, 28810, 52, 77, 85, 89, 28915, 22, 27, 29030, 73, 29170, 71, 29245, 86, 99, 29371, 89, 29485, 93, 29556, 29650, 57, 78, 29745, 60, 91, 29853, 29921, 28, 37, 53, 72, 30122, 80, 98, 30221, 37, 87, 30305, 47, 68, 69, 81, 30419, 38, 46, 50, 73, 94, 95, 30508, 12, 26, 34, 43, 95, 96, 30631, 34, 61, 79, 96, 30706, 30821, 35, 51, 53, 59, 68, 69, 70, 91, 94, 30904, 14, 74, 77, 86, 88, 90, 91, 92, 31024, 67, 77, 99, 31123, 39, 70, 73, 79, 31208, 52, 61, 63, 68, 70, 83, 84, 86, 96, 31301, 4, 5, 61, 63, 78, 31518, 48, 62, 81, 98, 31638, 66, 79, 31719, 21, 90, 96, 31831, 48, 31945, 49, 54, 32011, 13, 45, 56, 80, 32129, 49, 91, 95, 32217, 45, 32333, 69, 32430, 54, 81, 86, 32512, 17, 19, 50, 32636, 32786, 32829, 33, 32933, 36, 39, 48, 54, 59, 33085, 91, 34040, 79, 34182, 91, 34286, 34326, 77, 34400, 8, 21, 50, 58, 34500, 7, 13, 30, 34662, 34712, 15, 18, 20, 76, 34825, 34937, 44, 35002, 35177, 35211, 19, 22, 28, 35371, 75, 79, 81, 35407, 35545, 35658, 66, 35798, 35818, 25, 28, 56, 36292, 36321, 36518, 44, 45, 47, 36720, 21, 83, 36931, 42, 51, 70, 77, 78, 37308, 23, 39, 63, 71, 37719, 47, 51, 37809, 15, 97, 37901, 64, 88, 38020, 50, 38161, 38251, 38303, 56, 75, 38426, 38660, 64, 38707, 33, 50, 75, 92, 94, 39112, 54, 39213, 39378, 39405, 29, 39542, 57, 92, 39743, 40259, 64, 40359, 40494, 40517, 51, 82, 40612, 40750, 59, 40914, 41019, 22, 90, 41108, 50, 55, 41224, 83, 89, 41361, 84, 93, 41453, 41522, 41605, 32, 41, 64, 41718, 92, 41842, 42081, 42150, 59, 42424, 42770, 42878, 43026, 43228, 43377, 80, 93, 43556, 43876, 93, 43984, 44047, 44113, 44241, 60, 44401, 18, 44728, 35, 44, 44834, 76, 44906, 8, 45003, 5, 6, 9, 52, 67, 45100, 41, 44, 45291, 45335, 53, 45410, 47, 45623, 25, 45953, 46108, 27, 84, 46235, 46379, 82, 46416, 47, 63, 79, 96, 46510, 31, 63, 75, 82, 46613, 15, 46729, 47, 50, 73, 99, 46984, 47235, 59, 71.

SHORTHAND—ENGLISH (LOWER).

First Class.

548, 3076, 13789, 18057, 21923, 22662, 23259, 24227, 28423, 35244, 88, 36878, 37405, 37705, 38127, 38917, 40185, 42043, 42372, 44215, 44979, 45938, 46233, 46426, 46893,

SHORTHAND—ENGLISH (LOWER)—cont.

Second Class.

1606, 1913, 25, 41, 2135, 39, 48, 59, 2629, 3743, 4500, 9, 49, 62, 70, 75, 5282, 5483, 5885, 99, 6802, 7087, 8297, 8461, 8515, 8769, 9064, 9130, 44, 81, 9650, 9721, 27, 10157, 10237, 80, 10484, 10611, 11827, 67, 12456, 12929, 13402, 13535, 49, 58, 62, 13718, 23, 13849, 14312, 14545, 14670, 14753, 58, 65, 84, 14998, 15146, 15504, 87, 16879, 92, 16919, 26, 37, 17376, 17470, 17702, 17899, 18341, 18411, 18603, 30, 48, 18713, 19511, 93, 19688, 19788, 20111, 21785, 21986, 22016, 60, 22154, 67, 97, 22208, 22, 23212, 23725, 24372, 24725, 37, 93, 25047, 25282, 25520, 26150, 94, 26218, 26357, 26809, 26993, 27008, 19, 91, 27115, 27486, 28066, 28123, 28768, 29813, 30709, 31263, 99, 31302, 31905, 32679, 32700, 2, 31, 71, 34145, 60, 34244, 66, 34464, 34561, 83, 34633, 77, 34704, 14, 34844, 52, 34932, 35208, 54, 87, 35377, 35520, 35706, 35910, 36112, 92, 99, 36215, 36366, 91, 36477, 36527, 37, 96, 36656, 68, 36706, 29, 36819, 89, 90, 36944, 37434, 38, 37593, 37600, 3, 37821, 37907, 38213, 74, 91, 38542, 51, 61, 63, 78, 38695, 38747, 51, 83, 39123, 39250, 39378, 83, 39412, 37, 39762, 39891, 39901, 74, 40173, 75, 40439, 40536, 41205, 41332, 41460, 97, 41677, 41850, 76, 41901, 28, 86, 42013, 21, 63, 42115, 31, 42703, 7, 43072, 79, 81, 43316, 85, 43476, 43644, 57, 90, 92, 43703, 7, 43823, 40, 44056, 44124, 44225, 44, 44335, 83, 88, 97, 44560, 44622, 44757, 62, 89, 98, 44820, 28, 44927, 44, 66, 45125, 40, 45217, 45368, 45567, 71, 91, 92, 45855, 56, 45903, 10, 46036, 46120, 57, 46269, 46324, 46852, 47083, 47222, 47321.

SHORTHAND—ENGLISH (INTERMEDIATE GRADE).

First Class.

5625, 26376, 30720, 33093, 35517, 69, 37072, 38736, 40459, 43277, 43302, 36, 43.

Second Class.

1808, 1911, 38, 44, 4521, 4989, 5025, 5375, 92, 94, 97, 6320, 28, 6792, 8772, 8941, 9159, 9706, 90, 9803, 10136, 10558, 10678, 82, 85, 11420, 12616, 13138, 13640, 13833, 14635, 14747, 15135, 16088, 16641, 53, 17252, 17322, 18203, 17, 23, 18323, 91, 18413, 27, 43, 18509, 28, 19664, 20432, 20644, 47, 22087, 22152, 85, 22227, 22457, 59, 74, 22707, 20, 92, 22826, 23351, 55, 25491, 98, 25512, 26338, 48, 27280, 95, 27302, 27548, 27780, 92, 28160, 29237, 29591, 29733, 30500, 31253, 67, 95, 31849, 72, 32149, 32383, 32627, 32722, 76, 33073, 86, 34052, 34135, 34425, 34954, 35215, 40, 41, 35519, 21, 27, 36514, 36766, 36970, 37448, 37579, 37913, 14, 38541, 79, 38675, 38749, 37, 39082, 39450, 39759, 76, 39910, 16, 40070, 40615, 53, 40905, 41540, 41808, 42306, 8, 42434, 42501, 7, 42789, 91, 42941, 46, 43296, 43313, 17, 21, 50, 43460, 44106, 44332, 44796, 44972, 46161, 46216, 46912, 47201.

SHORTHAND—ENGLISH (HIGHER.)

First Class.

42571 only

Second Class.

2283, 5017, 5659, 5881, 89, 5902, 7997, 8762, 9160, 9785, 10577, 13628, 55, 14647, 17269, 19666, 22801, 25484, 25516, 30, 27822, 28195, 28215, 25, 29742, 30726, 31206, 32421, 32703, 50, 84, 34058, 34124, 36, 34863, 35193, 35270, 37432, 38685, 40079, 40132, 40512, 40771, 41708, 41810, 42384, 42549, 91, 42894, 43925, 43247, 43344, 44070, 44341, 59, 44402, 44572, 44813, 45011, 20, 45339, 45412, 45631, 36, 45940, 46305, 47292.

SHORTHAND—TAMIL (LOWER).

First Class.

1387, 1885, 88, 1967, 7920, 9762, 88, 13253, 88, 13329, 14549, 18440, 20390, 22676, 22761, 22827, 23984, 24355, 25483, 25537, 35209, 35308, 36065, 37308, 20, 37458, 40088, 41881, 42433, 43214, 26, 44583, 89, 44604, 41, 48, 44835.

Second Class.

1100, 1873, 1965, 66, 2135, 50, 55, 2280, 3211, 4078, 4416, 5366, 9710, 16, 9801, 11781, 13256, 86, 13300, 13419, 13636, 63, 68, 14626, 18375, 19254, 19813, 20420, 22690, 95, 22702, 95, 99, 22803, 23159, 23225, 23983, 26337, 26734, 26809, 27737, 93, 27824, 27951, 30452, 31872, 32424, 32548, 32707, 13, 45, 46, 33082, 94, 35190, 35226, 35, 36068, 81, 36557, 81, 37316, 37470, 38046, 47, 38413, 38727, 68, 39163, 39388, 39403, 46, 40061, 40103, 09, 40434, 40786, 40992, 41201, 16, 41837, 41, 45, 41907, 30, 32, 42274, 43282, 43305, 15, 44564, 77, 80, 93, 44605, 24, 43, 45412, 45625, 46122, 46467, 47315.

SHORTHAND—TAMIL—(HIGHER).

First Class—Nil.

Second Class.

647, 1193, 1665, 1912, 46, 55, 69, 78, 2148, 51, 53, 79, 3207, 13, 4071, 4111, 16, 9791, 99, 9980, 10749, 13303, 35, 13427, 13561, 13656, 57, 61, 67, 14673, 18454, 19616, 22662, 22704, 13, 42, 67, 80, 92, 94, 22841, 42, 25513, 28154, 29554, 30429, 30722, 23, 32408, 31, 32725, 33091, 35255, 35307, 36539, 98, 37485, 98, 38948, 40087, 41224, 41848, 55, 84, 90, 43309, 44278, 44404, 44633, 45277, 46129, 47336.

ACCOUNTANCY—(LOWER).

First Class.

7236, 9739, 56, 31538, 34726, 41, 36185, 37012, 37209, 40897, 44705, 45824, 41.

Second Class.

7, 132, 52, 493, 548, 51, 52, 77, 86, 603, 4, 6, 14, 18, 48, 815, 16, 23, 26, 27, 42, 49, 54, 63, 1027, 29, 31, 33, 1116, 37, 61, 90, 2258, 72, 4021, 36, 4141, 47, 67, 70, 4274, 4482, 4502, 10, 28, 33, 54, 69, 4605, 34, 76, 4750, 55, 79, 80, 90, 4828, 4913, 28, 35, 87, 88, 95, 5001, 8, 11, 18, 5623, 6021, 6401, 17, 6775, 7118, 20, 21, 28, 37, 43, 45, 49, 7610, 16, 25, 32, 36, 37, 43, 8131, 38, 39, 8308, 8471, 8507, 31, 8930, 47, 9105, 68, 9603, 11, 70, 9709, 24, 26, 37, 38, 44, 9905, 15, 22, 52, 62, 84, 88, 10029, 83, 89, 96, 10314, 10752, 10801, 70, 11036, 38, 43, 57, 11163, 11275, 93, 11564, 72, 11783, 11877, 12283, 84, 315, 815, 13152, 13836, 45, 14244, 14618, 27, 41, 69, 79, 14731, 82, 15038, 41, 42, 54, 60, 97, 15140, 73, 301, 20, 15887, 16760, 17400, 20, 18073, 18101, 18365, 81, 18425, 47, 18511, 630, 852, 95, 19141, 77, 19303, 19351, 19515, 16, 17, 19, 84, 85, 95, 19610, 13, 26, 33, 20705, 7, 10, 71, 20815, 95, 20989, 98, 21066, 21101, 21268, 21447, 48, 94, 21631, 21973, 85, 22007, 25, 69, 22104, 30, 22204, 22453, 62, 69, 82, 87, 22691, 99, 22747, 63, 81, 22802, 23594, 23671, 23724, 27, 24195, XXXXX, XXXXX, XXXXX, XXXXX, XXXXX, 24223, 95, 24309, 23, 57, 61, 64, 75, 24452, 64, 82, 24928, 51, 25119, 24, 59, 60, 69, 25271, 78, 25333, 83, 25495, 25616, 87, 26007, 20, 26303, 21, 51, 59, 26545, 26722, 27391, 27726, 28, 28190, 28302, 6, 28, 28645, 28790, 28904, 29183, 29234, 44, XXXX XXXX XXXX 29352, 29449, 77, 29576, 92, 29657, 29734, 30247, 76, 77, 30341, 91, 30444, 30714, 19, 24, 85, 30907, 31501, 3, 11, 14, 31, 32, 31706, 78, 81, 87, 88, 31804, 27, 40, 60, 92, 32147, 32392, 32719, 75, 77, 33074, 84, 92, 34110, 66, 34384, 34405, 69, 34529, 34636, 38, 48, 73, 34701, 1, 5, 23, 28, 34827, 97, 34902, 9, 16, 19, 28, 34, 55, 59, 96, 35004, 27, 35206, 53, 67, 94, 35739, 36101, 44, 63, 84, 92, 36255, 36334, 36509, 42, 67, 36633, 51, 53, 60, 63, 65, 72, 74, 82, 88, 89, 99, 36837, 36908, 37031, 43, 52, 75, 77, 79, 85, 87, 37116, 31, 58, 77, 87, 37210, 11, 37434, 38, 40, 47, 50, 52, 55, 71, 81, 37689, 37741, 45, 67, 85, 37807, 46, 49, 37963, 79, 90, 38003, 8, 21, 53, 38196, 38228, 45, 75, 38316, 38543, 81, 38626, 58, 94, 38722, 30, 41, 38857, 76, 83, 92, 94, 38929, 84, 39307, 10, 14, 35, 39667, 69, 75, 80, 83, 93, 94, 39820, 73, 91, 39905, 11, 40007, 8, 15, 22, 31, 42, 49, XXXXX, 63, 40102, 29, 31, 67, 40225, 32, 38, 50, 51, 77, 283, 86, 89, 91, 93, 95, 96, 40310, 12, 27, 30, 49, 57, 60, 65, 66, 67, 74, 77, 84, 85, 93, 98, 40402, 4, 11, 17, 40630, 78, 40735, 67, 81, 40876, 40912, 18, 33, 41002, 93, 41100, 3, 15, 38, 41257, 98, 41309, 26, 41704, 68, 77, 83, 86, 41834, 40, 78, 96, 41912, 20, 22, 63, 42036, 62, 83, 97, 42105, 38, 42301, 82, 42439, 42544, 42611, 17, 56, 57, 66, 42701, 3, 42805, 8, 42906, 10, 13, 49, 65, 74, 80, 43018, 43104, 13, 53, 54, 59, 43229, 32, 45, 68, 88, 97, 43312, 23, 24, 43529, 43682, 87, 92, 95, 97, 99, 43701, 2, 4, 43941, 45, 48, 49, 67, 75, 85, 44023, 34, 35, 37, 38, 44, 51, 44348, 65, 70, 84, 85, 44409, 14, 21, 59, 65, 75, 44528, 36, 51, 55, 44625, 92, 44700, 3, 4, 6, 8, 9, 48, 44838, 46, 47, 44983, 45034, 43, 53, 96, 45135, 82, 45287, 92, 96, 45301, 13, 45607, 10, 45743, 57, 45818, 50, 61, 64, 67, 86, 46028, 70, 72, 73, 46134, 59, 61, 71, 78, 46205, 7, 16, 30, 91, 46460, 46503, 25, 44, 60, 46651, 71, 81, 91, 46707, 47119, 47233, 38, 56, 65, 96

ACCOUNTANCY—(HIGHER).

First Class.

656, 9694, 29262.

Second Class.

539, 628, 1125, 41, 69, 2240, 77, 4413, 93, 5026, 5367, 6771, 8144, 8226, 27, 32, 39, 53, 9573, 9696, 9713, 14, 53, 74, 10527, 11167, 11772, 13846, 14110, 42, 52, 14738, 18361, 82, 18465, 67, 68, 69, 18519, 19558, 74, 76, 90, 96, 19605, 64, 21422, 22040, 22314, 22671, 75, 22839, 23809, 25528, 28217, 48, 29752, 30428, 30504, 30896, 30900, 10, 17, 19, 25, 28, 35, 31484, 89, 31516, 39, 46, 47, 31808, 59, 32381, 32401, 27, 34692, 35174, 79, 35214, 35300, 35907, 36137, 64, 66, 74, 37061, 66, 37179, 38686, 38856, 40016, 97, 40161, 97, 40320, 23, 44, 90, 40755, 58, 64, 40881, 41274, 96, 41770, 41801, 41929, 42763, 42894, 43183, 43231, 44043, 44130, 44351, 44403, 44571, 44743, 44811, 39, 45302, 45566, 45815, 46426, 46863, 47189, 47243, 47329.

COMMERCIAL PRACTICE—(LOWER).

First Class—Nil.

Second Class.

633, 8230, 11160, 18505, 25528, 38, 29261, 31485, 36225, 39886, 87, 90, 91, 96, 98, 99, 39900, 05, 16, 40000, 15, 54, 43047, 43223, 44619, 47200.

BANKING—(LOWER).

First Class—Nil.

Second Class.

6791, 8230, 13136, 18505, 20022, 20713, 53, 20807, 21416, 25379, 25528, 38, 27727, 29253, 30457, 32399, 36192, 36225, 36500, 37438, 40, 37502, 38876, 39869, 90, 96, 39911, 14, 40054, 43223, 51, 43534, 43949, 67, 44594, 45855, 45994.

COMMERCIAL GEOGRAPHY—(LOWER).

First Class—Nil.

Second Class.

6788, 10870, 13136, 20744, 64, 73, 82, 25375, 79, 25495, 25538, 29253, 31485, 36192, 40110, 47200.

COMMERCIAL PRACTICE—(HIGHER).

First Class—Nil.

Second Class.

6781, 9745, 54, 13156, 19664, 20430, 20808, 22487, 25463, 95, 36523, 37904, 38665, 38787, 40070, 72, 43972, 44419, 44613, 40, 45040, 47325.

BANKING—(HIGHER).

First Class—Nil.

Second Class.

539, 633, 1116, 60, 4996, 99, 5002, 13, 5631, 6767, 85, 9754, 55, 80, 13156, 14108, 18375, 18498, 19139, 20705, 21, 23, 20801, 08, 22481, 82, 87, 22703, 08, 76, 24389, 25470, 86, 27791, 29580, 92, 29742, 44, 30425, 79, 99, 30551, 31501, 31826, 33072, 90, 34641, 36219, 36523, 37904, 38164, 38669, 76, 40070, 93, 41923, 38, 42789, 43956, 78, 44125, 31, 44419, 44508, 91, 44640, 98, 44708, 45040, 45264, 46118, 47196, 47278, 47325.

COMMERCIAL GEOGRAPHY—(HIGHER).

First Class—Nil.

Second Class.

2277, 5013, 7372, 8230, 9754, 15320, 20808, 22481, 22708, 59, 22805, 25463, 86, 29742, 30785, 36523, 37904, 38669, 76, 46175.

TYPEWRITING—ENGLISH—(HIGH SPEED TEST).

First Class.

1470, 4147, 5082, 13152, 21458, 31890, 35205, 43337.

TYPEWRITING ENGLISH (HIGH SPEED TEST)—cont.

Second Class.

4420, 7423, 9693, 10600, 994, 11142, 808, 33, 12508, 13650, 57, 14686, 772, 117765, 18784, 19988, 22665
762, 23357, 24178, 459, 27618, 28242, 29105, 32412, 36526, 40751, 42789, 43298, 728, 44056, 46524.

TYPEWRITING—TAMIL (HIGH SPEED TEST).

First Class.

4147 only.

Second Class.

7423, 11142, 906, 13166, 650, 57, 14638, 772, 18956, 19612, 988, 22762, 24459, 25466, 551, 29105
460, 47220.

SHORTHAND ENGLISH (HIGH SPEED TEST).

150 words per minute.

First Class—Nil.

Second Class.

47191, 98, 47219, 52, 47330.

180 words per minute.

None Passed.

SHORTHAND—TAMIL (HIGH SPEED TEST).

100 words per minute.

First Class—Nil.

Second Class.

47215, 41 51, 58, 77, 47313, 22, 46 48, 49, 50.

120 words per minute.

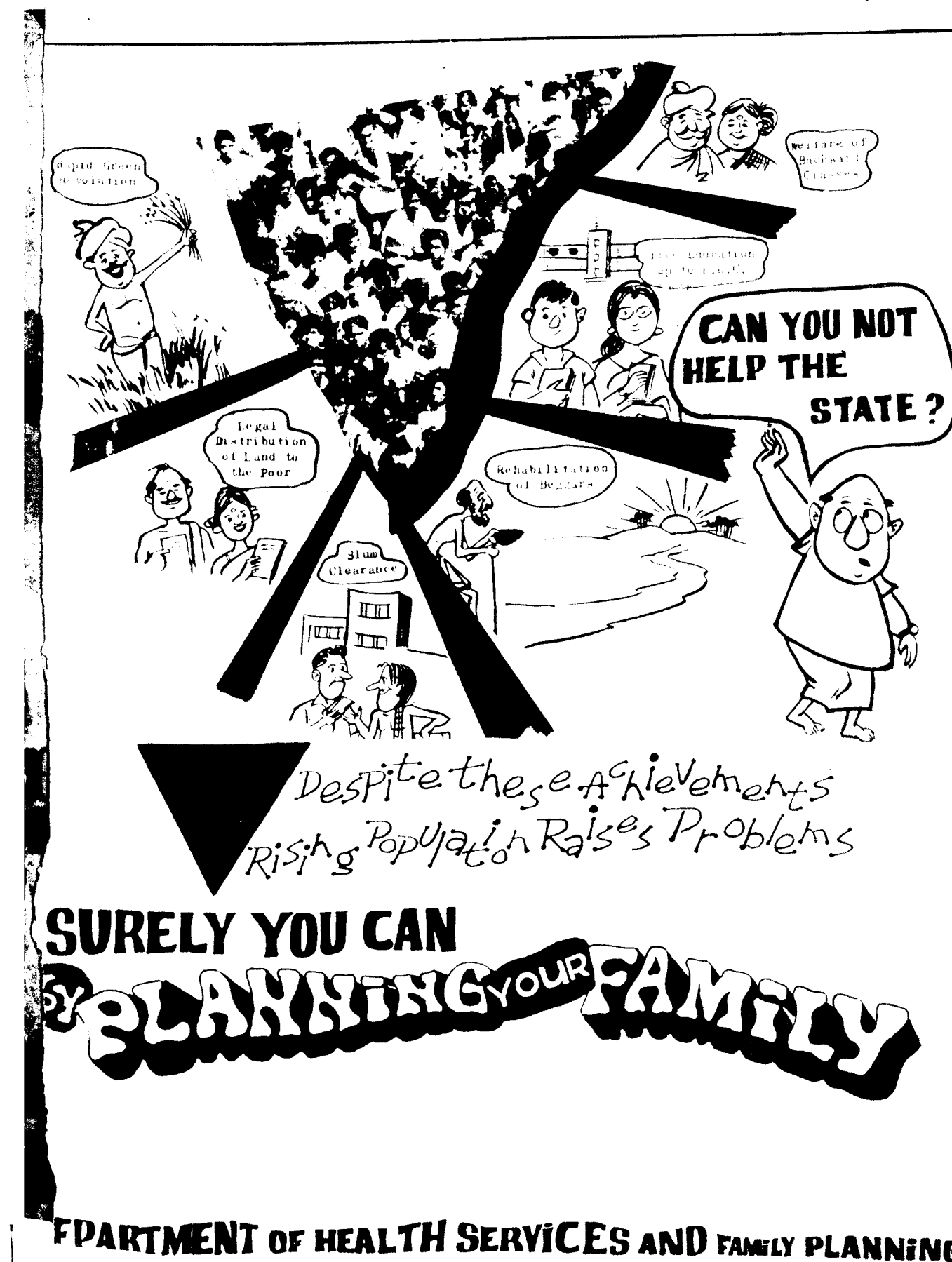
First Class—Nil.

Second Class.

47194, 95, 47308, 10.

P. SIVALINGAM,
Director of Technical Education,
and
Chairman Board of Examinations,
Madras-25.

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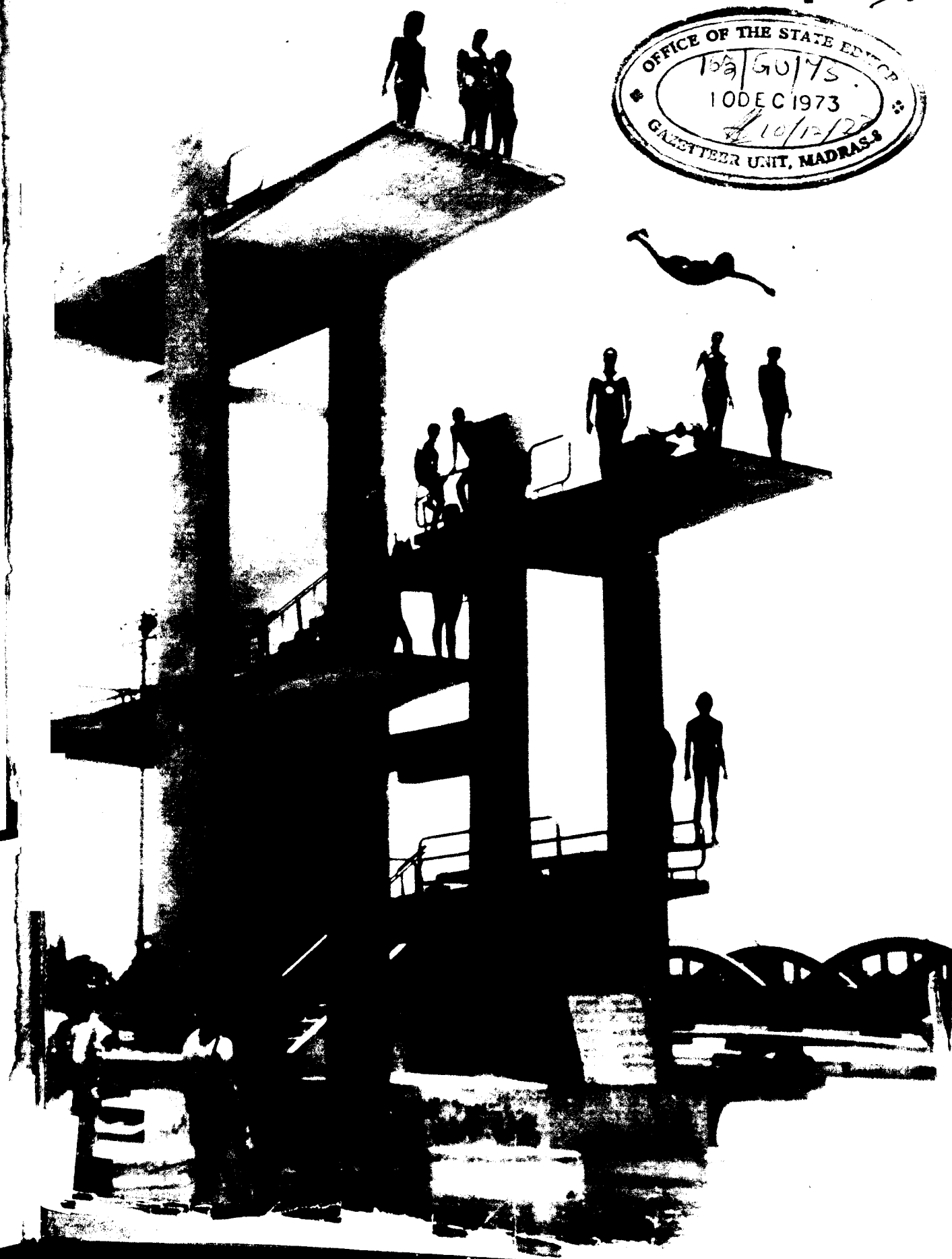
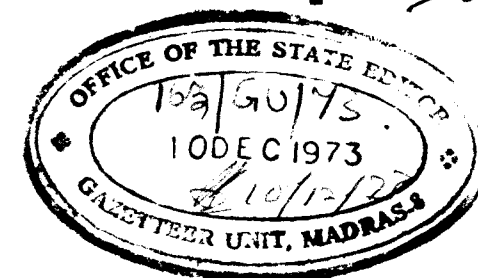
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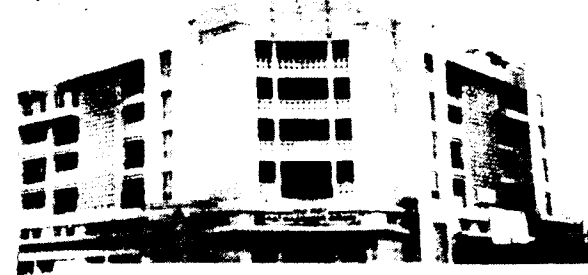
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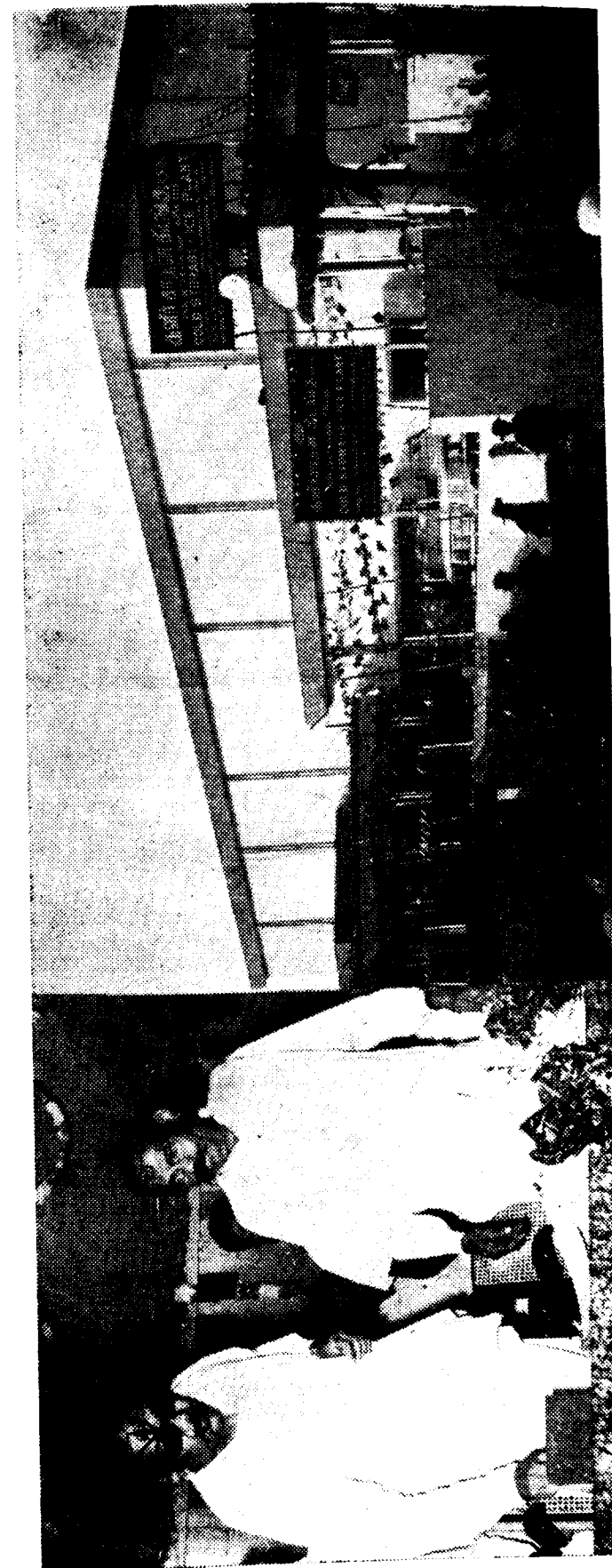


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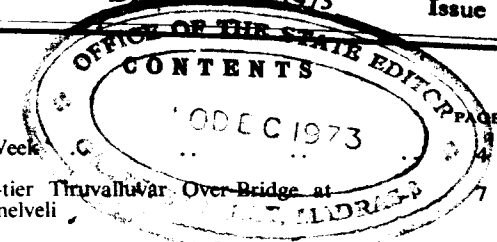


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Tamil Arasu

Vol. IV DECEMBER 1973 Issue 6



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MORE APPLES FOR MADRAS

A Cold Storage Plant costing Rs. 9.25 lakhs has been established at the goods terminal in Madras by Tamil Nadu Co-operative Marketing Federation, with financial assistance from the State Government and National Co-operative Development Corporation for storing fruits, vegetables, etc. The capacity of the plant is 1,250 tonnes consisting of 2 chambers of 625 tonnes each with rack arrangements in four tiers consisting of 393 bays. Agreements have been entered into with the Kashmir Apple Growers Co-operative Federation for the supply of apples for distribution in our State. Outsiders can also avail these cold storage facilities.

This Cold Storage Plant was declared open by the Chief Minister during Co-operation Week celebrations. The main objectives of the Federation are the supply of agricultural inputs arrangement for the marketing of surplus agricultural produce, starting of processing plants, construction of storages, etc. It has drawn up ambitious schemes for establishing sun-flower oil and groundnut oil extraction plants at Vriddhachalam and Tiruvannamalai.



The week-long 'Plan Week' celebrations in Tamil Nadu concluded on 21-11-1973 with a symposium in which students of all city Colleges participated. College students all over the State and the elite of cities throughout Tamil Nadu thronged the large variety of media adopted to focus attention on the Plan. The City, however, went a step further and arranged a 'Poets Meet' to discuss the Plan in poetry. With former Minister Thiru K. Vezhavendan and two other top rung poets of Tamil Nadu giving the lead, as many as 48 college students read out their poetic eulogies of the Plan. The Rajaji Hall, the venue of this interesting feature, possible only in Tamil Nadu, because of her poetic tradition, was well attended by an appreciative audience.

Moreover, the City had the additional benefit of the Members of the State Planning Commission and its Deputy Chairman giving the discussions a purposive lead. The media units of the Government of India publicity wing gave powerful support to the efforts of the State

Planning Commission and the Information Department to generate the Plan consciousness among the intelligentsia.

FIFTH PLAN-A MAJOR STEP

Calling the Fifth Plan (1974-79) as a major step in the country's determination to march towards definite progress, Dr. Malcom Adiseshiah, Member, State Planning Commission, described the grounds covered by the four previous plans as the foundation for future progress.

Detailing the process of planning as one of striking a clear balance sheet of achievements and set backs, and going ahead after identifying the constraints the well known Educator-Economist described the Plan as a potent instrument for improving the wellbeing of the people.

ACHIEVEMENTS

Dr. Adiseshiah listed the following as the major achievements of Indian Planning :

1. Achievement of a remarkable breakthrough in food-grains production ;

2. Development of a sturdy infrastructure for Industry, Agriculture, etc. The achievements in the sphere of rural roads, Minor Irrigation, etc., have been really worth-while ;

3. Development of Education and Health facilities. We have performed some qualitative achievements in these social service spheres.

As against these, we have to face the following difficulties also :

1. Hyper inflation,
2. Power shortage throughout the country,
3. Massive unemployment and
4. The ever widening poverty line.

CONSTRAINTS

One of our major constraints against progress has been our traditional social structure. Another constraint is that our technologies in agriculture and industry lead to unemployment and underemployment. Low savings is yet another serious constraint and coupled with the population explosion the situation seems to be disheartening.

But with proper planning and implementation, we are bound to go ahead and succeed. Failure of any plan is always rightly traced to failure in proper implementation.

ROLE OF COLLEGES

Characterising the approach document as a serious and salient study of the objectives and major thrusts of the Vth Plan, Dr. Malcom S. Adiseshiah detailed the definite role of the colleges in helping the plan to succeed.

1. The college students should form study circles to study the 5th Plan carefully and analyse the approach paper which contains many remarkable ideas.

2. The college students can definitely fill up the gaps of knowledge and information. Whole areas on which investigations and surveys that would help the planners greatly, are there to be exploited usefully by the College Planning Forums. Each

college can undertake scientific studies and supply vital information to the Planning Commission.

3. By sustained social service action and community service the college students can make the villagers plan-minded and can explain to the people at large, the various benefits of social service legislation and the major objectives of the Plan.

Dr. Adiseshiah concluded his address by congratulating the organisers of the symposium and calling on the participants to participate on an 'Equal Footing' as the symposium is a meeting of equals.

There was a very interesting and lively discussion in which students and professors took an active part.

The major goal of Vth Plan "Eradication of Poverty" was acclaimed and various college delegates detailed the ways of implementing these ideas.

SUMMING UP - 697

At the end Thiru M. G. Raja Ram summed up the discussions and stated that "the Fifth Plan is much more than a mere mathematical exercise. It is conceived as the rallying point for a supreme national effort in a decisive phase of our march towards a self reliant economy and for fuller social justice. It is another war—so to say—this is a war against poverty and stagnation and this has to be won at all costs."

Thiru M. G. Rajaram, Deputy Chairman, State Planning Commission and Thiru V. Namadeven, Deputy Director, Information Department of Tamil Nadu Government, gave the State-wide celebrations their personal attention and goaded the enthusiasm of students as also guided them to a realistic appraisal of the Plan for removing regional imbalances.

GOVERNOR AT POOMPUHAR ART GALLERY



"Intelligently planned, exquisitely executed and made universally acceptable as a true mirror of SILAPPATHIKARAM, a unique epic" said Thiru K. K. Shah, Governor, during his visit to the Poompuhar Art Gallery on 29th October, 1973. The Reception Officer, S. Nallarasu is seen explaining the exhibits of the Art Gallery to the Governor while V. Namadevan, Deputy Director, is seen getting the Visitor's Book signed.

(4) Continuing from slab bridge the central main bridge of bowstring girder type (which carries the two deck) consisting of 12 spans of 102 ft. and 6 in. each (centre to centre). Two bowstring girder, one on either side, are provided for each span. The upper deck for fast moving vehicles is connected to the arch rib through V shaped cross beams. The lower deck for slow moving vehicles, spans between the tie beams of the bowstring girder. Since the steel for the construction not readily available then, the tie beams of the bowstring girder were prestressed (excepting the railway span) with ten cables of 12/8 m.m. H.T. cables.

(5) The solid masonry ramps for slow moving traffic is given connection from ground level to the bottom deck of the main bridge. Apart from this, service road to a width of 12 ft. black topped on either side of the bridge is provided for movement of pedestrians and vehicular traffic for the shops and residential place on both sides of the bridge and it is proposed to construct a foot overbridge to cross the railway track, as the existing level crossing will be closed permanently.

CONSTRUCTION

The construction of the bridge was started on 8-12-1970. It is noteworthy that this overbridge, which is one of a complicated technical nature, was constructed within a short period, even though many difficulties were experienced, such as diversion of traffic and non-availability of working space due to the heavily built up business area and converting the overhead electric line into underground cable for the entire length of the bridge and shifting of telephone and telegraph posts to the further end.

PROVISION OF FOUR LANES & FREE LEFT TURN

In the light of the conditions discussed above, it has been proposed to have four lane carriage way on both the approaches of the Overbridge upto the Government Veterinary Hospital on Shencottah side

and upto Sulochana Mudaliar Bridge on Palayamcottai side to provide a free flow of traffic. This is absolutely necessary in view of the quantum of traffic expected from Goods Shed Road on Shencottah side and due to the presence of the N.H. on Palayamcottah side. Providing a standard round about to obtain an uninterrupted flow of traffic on either side is prohibitively costly due to the existence of the heavily built up area. A non-standard round about will impede the flow and only result in creating an unnecessary obstruction to the through traffic flow. Therefore it was recommended to provide only a channelising island on Palayamcottah side enclosing the existing Anna Statue to provide for the left turning fast moving traffic from the bridge to the National Highways. The N.H. on Palayamcottai side has to be slightly shifted to accommodate the left turning traffic from the Overbridge. To minimise land acquisition, a bare minimum turning radius of 12 M is adopted at the take-off point. The take-off for the left turning traffic could not be provided at the foot of the bridge as it will involve acquisition and dismantling of the building housing the office of the Tirunelveli Electricity System. To avoid this it was proposed to take-off (4 into 7.3 M) i.e., 29.2 Metres ahead, dismantling the hand rails for providing take-off for 7.5 M width of road as shown in the plan and connect it to the N.H. by means of a ramp with a gradient not exceeding 1 in 30. The existing gradient of the Overbridge is to be kept up undisturbed.

PROVISION OF 'U' TURNS

To minimise the conflicts, it is proposed to prohibit right turn near the Overbridge and all the right turning vehicles are advised to move further away from the Overbridge and take a 'U' turn at the appropriate points where the road width is increased to 22 M.

All vehicles coming from the bus stand side in the N.H. bound towards the Overbridge shall not be allowed to take an immediate right turn at the foot of the bridge. But they have to go further up towards Sulochana Mudaliar Bridge

and then take a 'U' turn at the place designated. Similarly on Shencottah side no vehicle shall be allowed to take a right turn immediately after the bridge and the vehicles bound for goods shed etc., have to go further upto the Veterinary Hospital and take a 'U' turn and proceed. Extra road width is required to allow vehicles to take 'U' turn and lands for these were proposed to be got alienated from the Veterinary Hospital Compound on Shencottah side and the river poramboke near Sulochana Mudaliar Bridge. A small portion of land was also recommended to be acquired on Palayamcottai side for this purpose.

TRAFFIC AIDS

The bridge as well as the junction on Palayamcottai side were proposed to be well lit during night time by means of adequate number of over head cut off lights. One illuminated informatory sign board has to be put up over the hand rails of the bridge just before the take-off point. Plastic delineators are to be fixed at the three corners of the channelising island as a cautionary measure. Road marking shall be carried out before allowing traffic over the bridge to channelise the flow.

Apart from the above improvements, the erection of all other cautionary and mandatory signs were also proposed. A Police beat was suggested to be posted close to the entry gate of T.T.E.S. Co., to control the traffic from the Overbridge N.H. and also from Kailasapuram.

A COMPLICATED CONSTRUCTION COMPLETED IN RECORD TIME

"Do you remember how fascinated you were when you first read the story of Jeanne d' Arc, and how your ambition was to be something like her? Ordinary men and women are not usually heroic. They think of their daily bread and butter, of their children, of their household worries and the like. But a time comes when a whole people become full of faith for a great cause, and then even simple ordinary men and women become heroes, and history becomes stirring and epoch-making. Great leaders have something in them which inspires a whole people and makes them do great deeds."

EDUCATION

—This is what Pandit Jawaharlal Nehru wrote to his dear young daughter Indira Priyadarshini from Naini prison on October 26, 1930, so as to reach her on her 13th birthday. It is refreshing to remind ourselves of these prophetic words of the father which have proved true, as we celebrate his daughter's 56th birthday.

Her education in Tagore's Santiniketan, though interrupted due to the stresses and strains of the difficult times, opened her eyes to the immortal glory of India, and her studies and travels abroad threw upon the window of Western civilisation. Like her illustrious father and grandfather, she absorbed the scientific approach of the West and the basic values of life of the East. In the company of her father, she fell under the magnetic spell of the dynamic leadership of Mahatma Gandhi. Her close association with her father during the grim days of our Freedom struggle and thereafter during his stewardship as Prime Minister provided immense opportunities for closer look at men and matters and prepared her for rough and tumble of public life. Neither affluence in early childhood nor rigours of public life diminished her burning zeal to serve the teeming millions in India. No wonder her rise to top leadership was hailed by all at home and abroad.

She enjoys immense confidence of the people who have given their massive mandate to her to transform the face of poor India into a prosperous Welfare State. She carries a very heavy burden but it is lightened by the love of the people. She has created a new mood in the

country for a big leap forward, and her slogan 'Garibi Hatao' is as meaningful today as the 'Quit India' slogan was thirty years ago. A bird's eye view of the period of her emergence as an undisputed leader is inspiring, instructive and educative.

In the formative period of any country's development, the test of leadership lies in the ability to assess handicaps, evaluate advantages, appreciate the psychology of the people, calculate the actions and re-actions of neighbours—friends and foes—and hammer out ways and means for maximising the benefit of helpful factors and accelerating the tempo of progress consistent with the security and unity of the country. It is rarely that a positive leadership with enough dynamism is available to match the demands of the times. It is fortunate that in the most critical period in the history of India, a dynamic, wise and vigilant leader like Thirumati Indira Gandhi is at the helm of affairs.

HURDLE

The biggest hurdle and the greatest challenge that India has had to face after Independence, is the after-math of Partition. Many then did not realise how wily politicians and jealous neighbours can create situations, the burdens of which can not only cripple our economy, reduce our strength, disturb our unity but also create conditions of chaos and utter helplessness. Any effective measures that India could think of, can be exploited and condemned on religious grounds. Extreme caution and utmost prudence alone can shape the events in a way that would completely remove such an impression and create international opinion in our favour.

There were occasions in the past when the handicaps of Partition could have been offset by appropriate measures. When I say 'handicaps', I do not, for a moment, mean either to undo the geographical division that has taken place or to annex any part of either East Bengal or West Punjab. When I say 'handicaps', I refer to disquieting factors which are the natural concomitant of a religious State coming into existence on our borders

THE PRIME MINISTER'S BIRTHDAY TRIBUTES BY K. K. SHAH GOVERNOR OF TAMIL NADU

and exploiting the religious sentiments both in Pakistan and in India. Even a constructive attitude was exploited and is being exploited. It was then hoped that if democracy became pervasive and also a mode of living in Pakistan, since India was wedded to democracy, the barriers, prejudices and predilections based on religion, caste, community, would disappear and a healthy relationship would grow between India and Pakistan in the common interests of both.

Unluckily, the last 20 years have witnessed situations in which not only religious bigotry has been extolled but every attempt has been made to disturb the emotional integration of India by appeals to religious, ideological differences and group interests. It was thought that lovers of democracy could be dissuaded from working against a democratic India. As it happened, however, people wedded to an ideology which did not believe in allowing religion to interfere, did side with dictators, depending upon religion as their base. Neither ideological contradictions nor humanitarian values could prevent alignment intended to erode not only the democratic fibre of India but the very unity of India.

The resultant stresses and strains created a situation where frustration was increasing, hope for a better future was receding and extremism was gaining ground. Different forces acting in different ways and for different purposes had created a situation where confidence in leadership was sagging and reliance on the ability of the country to preserve its unity and maintain its progress was questioned.

It was in these circumstances that Thirumati Indira Gandhi was called upon to shoulder the responsibility of guiding the destinies of India. The sheer weight of internal squabbles, uncertain conditions and external pressures would have persuaded the mightiest not to invite trouble on all sides and undertake a task which looked like Herculean. But true to the traditions of her family, Indira Gandhi refused to succumb either to the threat or hurdles or to the pressure of events. She knew that unless a new line was adopted and a bold programme was undertaken, it was impossible to

change the psychology of the masses. She was aware that the country's interests demanded a fight on all fronts and she did not hesitate to do so.

The history of the last two years and more will be regarded as the history of future India, and this period will be known as Indira Gandhi epoch. The courage with which she advised the dissolution of the Lok Sabha at a critical time, the dynamism with which she fought the mid-term poll and the overwhelming majority with which she was entrusted with power are indicative of her maturity, wisdom, statesmanship and far-sightedness as a leader of destiny. The prognostications of the wisest, the prophecies of the intellectuals and the warnings of the prophets of doom not only went away but were completely destroyed by a massive majority, unknown so far in the history of India. This demonstrated that she could feel the pulse of the people, she knew them, had faith in them and was sure that her faith would be rewarded.

Hardly had the din and dust of the elections settled down when East Bengal erupted as a volcano and put her abilities to the severest test. Any other leadership would have either succumbed to the immediate needs or would have played into the hands of scheming politicians and propagandists. The cool, collected and resolute manner in which she handled the problem and the gradual change that she brought about in the thinking of the international community will redound to her credit and inspire future statesmen to draw inspiration from her handling of the situation, when all facts will be available. The greatness of leadership is tested when enormous dangers confront it. It is to the credit of Indira Gandhi that she is able to convert an enormous danger to an extreme advantage. Neither the impatience of friends for quick results nor the temporary jubilation of opponents can disturb the equanimity of Indira Gandhi. Her faith in the future of India is disclosed by her calmness, composure and confidence. Undaunted by difficulties and impervious to personal inconvenience, her diligent, devoted and intrepid leadership is slowly and steadily turning the tide in favour of India.

The Indo-Soviet treaty will be hailed as a master stroke of her consummate statesmanship and wisdom. When others were scheming, it will be said to her credit that Indira Gandhi had been acting.

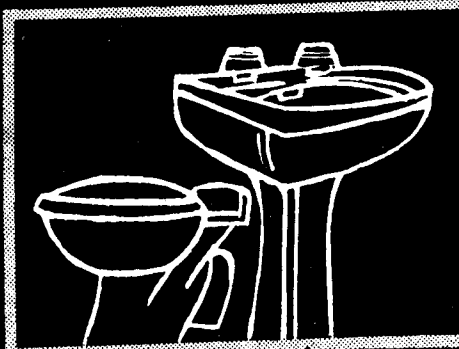
Thanks to the solidarity of the people of India and to the magnificent performance of our gallant defence forces, Bangla Desh was born. The self-respect of the insulted people of this sub-continent is asserted; the shackles of balance of power are broken; and the emergence of India as a security of peace and prosperity is assured. By making President Bhutto to agree to abjure resort to force in future and to resolve all differences by negotiation without intervention of an outsider, Thirumati Indira Gandhi had added another dimension of glory to the formidable array of her achievements.

We have to give every possible help for the reconstruction of Bangla Desh. We have to produce more for making up the cost of war imposed on us and we will have to find additional resources to meet the rising expectations of the masses, besides maintaining vigilance against treacherous moves on our borders and against international pulls and pressures. We have to be vigilant against the scheming forces of communalism, casteism and religious bigotry. We have gradually to overcome the weaknesses of democracy and make democracy a way of life. This is a testing time; but I have no doubt that with the maturity that the masses have attained, with the resilience that the economy has achieved, with the growth that the future is promising and with the strong and valuable leadership of Indira Gandhi, the future is safe.

On the 56th birthday of this great leader of destiny of India, millions of her countrymen and equally millions of her admirers all over the world, will vie with each other in sending their warmest greetings and best wishes. For the grateful people of India, the only significant way to greet her on this happy and memorable occasion is to assure her of their dedication and readiness to follow her lead under all circumstances and to strengthen her hands with the utmost loyalty and co-operation.

—oOo—

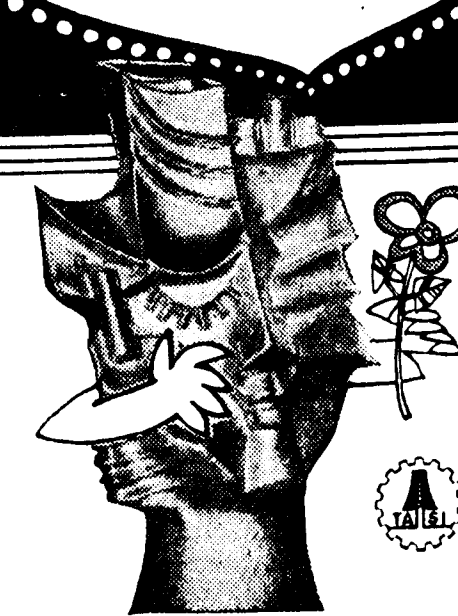
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LOVE ME TOO, DEAR








To mark the Birthday of Pundit Jawaharlal Nehru this year on November 14th, the younger generation from tiny tots of nursery schools to the adolescents in colleges pooled all their budding talents to make it abundantly clear that his memory is cherished. All organisations and Government agencies responsible for the youth welfare and education lent their lusty co-operation, while the Information and Public Relations Department of the Government of Tamil Nadu co-ordinated all this enthusiasm. The most colourful event was the massive children's rally organised by the Indian Council for Child Welfare at the vast Nehru Stadium of the Corporation of Madras on 14-11-1973.

BOOK EXHIBITION

Children's Book Exhibition was inaugurated for three days from 14th November, 1973 at Rajaji Hall by Pulavar K. Govindan, Speaker, Tamil Nadu Legislative Assembly. The function was presided over by the Minister for Education and Tourism, Thiru V. R. Nedunchezian. About 20 publishers participated in the display of their publications. Paintings of good standard by children were also displayed at the exhibition. Books were sold at a sizeable concession, while the more costly sets were sold

on the instalment payment basis. Scientific instruments were also exhibited for the benefit of teachers. To give incentive to the publishers, 3 prizes were distributed for the best display. The Book Exhibition was kept open from 9 A.M. to 9 P.M. The Director of Social Welfare and Director of Public Libraries made necessary arrangements to display the educational aids at the exhibition for the benefit of the children, who thronged in large numbers in a constant stream.

PAINTING EXHIBITION

A painting competition was held for the school children. Children below 15 years grouped in 3 categories such as 2.5 to 5 years, 6 to 10 years and 11 to 15 years were enlisted. The competition for children in the age group of 2.5 to 5 years was organised by the State Social Welfare Board at 10 A.M. on 10-11-1973 and 300 children sat for competition at Children's Garden School at Mylapore, Avvai Home at Besant Avenue, Balar Kalvi Nilayam at Ritherdon Road, Madras-7 and Jawahar Vidyalyam at Ashok Nagar. The competition for other age groups was organised by the Director of School Education in different centres. About 700 children took part in the competition in the other two age groups. Three prizes were given to each

age-group. The Central Social Welfare Board had arranged 100 prizes with the help of some private institutions and companies. These prizes were distributed on 21st of this month.

POETRY COMPETITION

A poetry competition was organised by the Directorate of College Education held for both girls and boys on Sunday 11th November, 1973 at Rajaji Hall. Thiru K. Vezhavendan, M.L.A., Thiru Ponniyalavan and Thirumathi Krishna Sanjeevi were the judges for the competition which attracted 36 students from City colleges. The consolation prize went to a blind student of Vivekananda College.

FILM SHOWS

Film shows were screened free of charge on the morning of 14th November, 1973. The South Indian Film Chamber of Commerce selected about 11 theatres in the City for the screening of the film shows. Necessary exemptions like entertainment tax and show tax were given for the theatres. The Madras Film Society took the responsibility for supplying the films. Apart from this Children's Film produced by Tamil Nadu Films Divisions, and Films Division, Government of India were also supplied to the children's film shows.



The children of the various Consulate personnel appeared on the stage in their respective national costumes and gave a colourful variation this year. All these functions were held under the auspices of South Indian Film Chamber of Commerce, the Madras Film Society, Director of School Education and the Director of Information and Public Relations.

A Children's Rally held at the Nehru Stadium and inaugurated by

Thiru V.R. Nedunchezian was arranged under the joint auspices of the State Government, the Corporation of Madras and the Indian Council for Child Welfare. Led by elephants tigers and other animals, the mass rally was a great success from the start. The Police Department arranged for a display by the mounted police, and the Police Band was in attendance throughout the rally. About 10,000 children from Corporation Elementary and Secondary Schools took part in the

function. The horse parade was the most interesting item of the rally. Children of Police personnel played Karagan and Kavadi on the occasion.

The prizes to the winners of the painting competition, the poetry competition and those who participated in the rally were distributed by Thirumathi Visalakshi Nedunchezian at the end of the function.

—S.S.



Top: March Past by NCC and Scouts units of Schools.

Middle: Prize Winners included college students and Nursery students in age appropriate competitions.

Bottom: Nursery School kids engaged in on the spot art competition.





The floods in December '72 caused widespread and considerable damage in Tamilnadu, especially to cultivable lands in the districts of South Arcot, Coimbatore, Salem, Dharmapuri, Tiruchi and Thanjavur. Not only the standing crops in the fields were damaged, but the lands were also covered with sand to depths ranging from 6" to 4' making the lands unfit for further cultivation. Due to this natural calamity, the lands of about 6,088 farmers were rendered unfit for cultivation. Among the areas affected by these floods, rapid reconnaissance survey revealed that an area of about 10,000 acres required the employment of bulldozers for reclamation as they had been heavily sand cast or badly eroded.

Taking into account the poverty of the agriculturists who were stricken by this natural calamity and in order to get the job of reclamation completed quickly and before the commencement of the main agricultural season, the Government also took the very human and benovolent decision to clear the lands free of cost. The task of clearing the heavily sand-cast lands was given to the Agricultural Department. Very appropriately within just a few days after the calamity the reclamation work was inaugurated on 23rd December '72 at THIRUVAMUR

VILLAGE, South Arcot district, by the Chief Minister.

DETAILED SURVEY

A detailed survey on the flood affected area was carried out by the Soil Conservation wing of Agriculture Department with the cooperation of the Revenue and Village officials who gave a clear picture of the damages viz. depth of sand deposited eroded areas and probable time required for reclamation, with the shortest possible 'leads'.

To accomplish the clearance of the sand cast lands in the shortest possible time, the Department diverted a fleet of 101 Bulldozers to the 5 districts of South Arcot, Coimbatore, Salem, Dharmapuri and Tiruchy. As the worst affected area was South Arcot district, a fleet of more than 80 Bulldozers were pressed into service for reclamation work in this district. Departmental bulldozers were made to work for more than 12 hours a day and the bulldozers were working continuously for more than 25 days in a month. The bulldozers were pressed for the reclamation work as per the priority fixed by the Collectors of the districts concerned. Particularly in South Arcot district, apart from equipment, almost the entire agricultural engineering staff was diverted for this work.

PROGRESS OF WORK

The tempo of progress was kept up until the entire area sand cast was cleared in all the districts in order to bring back the land fit for cultivation at a shortest period.

The following particulars will show the pace of progress of work right from the beginning till the end of the work :

	Acres.
From 23-12-72 to 31-1-73	830.75
Upto the end of February '73	3,108.72
Upto the end of March '73	4,952.27
Upto the end of April, '73	6,068.65
Upto the end of May, '73	6,939.58
Upto the end of June, '73	8,042.64
Upto the end of July, '73	9,228.04
Upto the end of August, '73	10,206.04
Upto the end of September, '73	10,541.00
Upto the end of 12-10-73	10,602.73

The 101 bulldozers have worked for 1,42,445 bulldozer hours to clear the sand cast and eroded lands in an area of 10,602.72 acres. It may be noted that the major part of the work was completed by the end of August itself i.e. within eight months of the commencement of work.

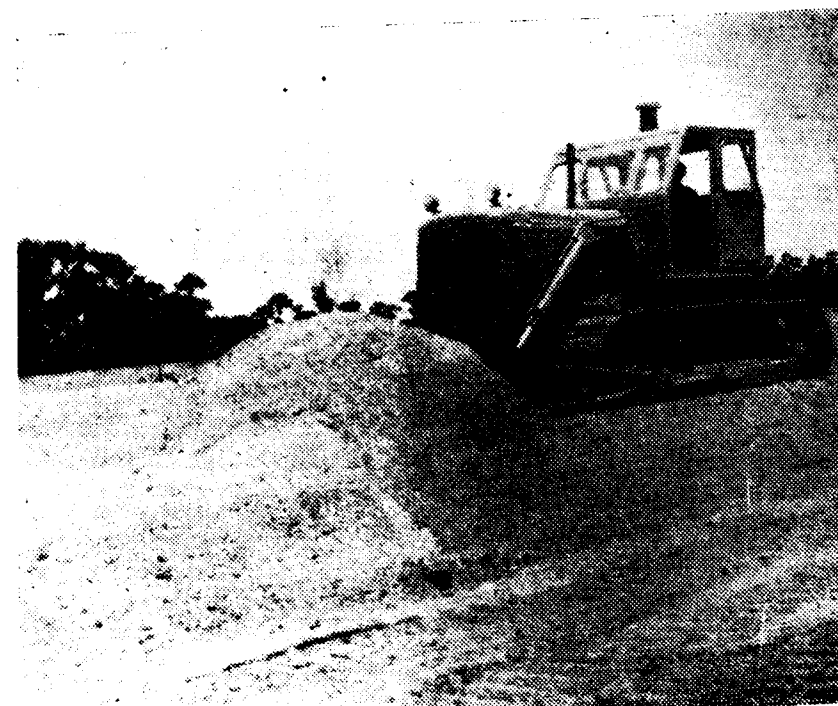
COST OF RECLAMATION

It was originally anticipated that the cost of clearance of sand by bulldozer would be about Rs. 1,200/- per acre on an average. But by the judicious and efficient working of the units, the actual average cost for the work was brought down to about Rs. 850/- per acre (not inclusive of addition spares and staff). It is safe to assume that one acre of land reclaimed on which groundnut, paddy, sugarcane or a number of crops can be raised, can produce atleast a gross average yield of Rs.1,000 per annum. Therefore, gross yield out of 10,602.72 acres reclaimed would certainly exceed Rs. 1 crore per annum. If the reclamation works had not been undertaken by the Government, the loss of production in the State would have been of the order of at least Rs. one crore per annum.

It may be mentioned that 6,088 farmers have been benefited by this work. But for this reclamation work done by Government, it can be stated without doubt that the poorer farmers would have become effectually landless labourers with no lands of their own fit for cultivation. The number of farmers benefited by the reclamation work are detailed below. As can be seen, the largest number roughly 85 per cent were in the one acre to three acres category.

1. Number of farmers in whose lands clearance was done upto the extent of :

	No. of farmers
One	2,642
One to two acres	1,797
Two to three acres	764
Three to four acres	330
Four to five acres	232
More than five acres	323
	6,088



A bulldozer at work.

BUDGET PROVISION AND STAFF

The annual average budget provision for Agricultural Engineering Schemes is about Rs. 4.5 crores. The reclamation of lands taken up by the Agriculture Department was practically completed in about 8 months time at a cost of over Rs. 1 crore in addition to its regular programme of work and with an additional staff of just two sub-divisions. This will give some idea of the magnitude of the operations taken up on an emergency basis by this Department.

About 300 members of the operating crew and 50 Supervisory and Maintenance staff were engaged in this work. They came from all districts of the State leaving their families, worked in South Arcot on a 'Camp' basis even round the clock to ensure that the agricultural lands could be brought to cultivation before the commencement of the main cultivation season.

MAGNITUDE OF WORK

Assuming that the average depth of sand as 1.25 feet, the quantity of sand removed from the cultivable lands over an area of 10,602.72 acres works out to approximately 577 million cubic feet. The lead was

on an average of about 200 feet. The biggest Earthen Dam constructed in Tamilnadu is the Bhavanisagar Dam in Coimbatore district. This dam has about 14 million C.ft. of Masonry structure and 160 Mcft. of earth work. The sand removed over a distance of about 200 feet, therefore, exceeded three times the total earth-work of the Bhavanisagar Dam.

COMPLETION OF THE WORK

The reclamation work by bulldozers in the districts of Tiruchy, Dharmapuri, Coimbatore and Salem was completed by May, 1973. In respect of Thanjavur, the area affected being small, the work was commenced and completed in July '73. On completion of work in these districts, the bulldozers, which were operating in these districts, were also diverted to South Arcot for completion of the entire reclamation work as programmed. The reclamation work in South Arcot district was almost completed by the end of August, '73.

The remaining areas, which were in small patches in different villages, were also taken up and the entire affected area in South Arcot district was completed on 12-10-73.

The areas, which required reclamation in the above districts, are as follows. These areas have been reclaimed in full now at a cost of about Rs.1.05 crores, including the cost of additional spares for bulldozers and staff.

District	Area Reclaimed in Acres
1. South Arcot	.. 8,793.18
2. Coimbatore	.. 519.25
3. Salem	.. 680.93
4. Dharmapuri	.. 272.12
5. Tiruchy	.. 282.78
6. Thanjavur	.. 54.46
Total	.. 10,602.72

The farmers in the districts of South Arcot, Coimbatore, Salem Dharmapuri, Tiruchy and Thanjavur districts have raised crops as soon as their lands were reclaimed.

In South Arcot district, in most of the reclaimed areas, the ryots have raised their second crop with Hybrid varieties of paddy viz. 'Jaya', 'IR-20' etc. besides kambu, cholam, groundnut and sugarcane.

In some of the villages in South Arcot district reclaimed in January-February, even a third crop of paddy is being raised now.

Thus the ryots of the affected districts were given timely assistance to raise their crops.

The reclamation work taken up by the Government has helped several thousand farmers and given the farming public the confidence that in a time of real emergency the Government of Tamilnadu will always come to their assistance effectually and promptly.

By
T.V. ANTONY I.A.S.,
(Then) Director of Agriculture.

the living past

The imprint of Time left on impressive buildings like the Taj Mahal is more easily discerned in written records. In place of mute memorials, eloquent books speak to one and all. The past is preserved in documents and books for posterity to show how and where history is imperishable. The same can be a guide to the future also.

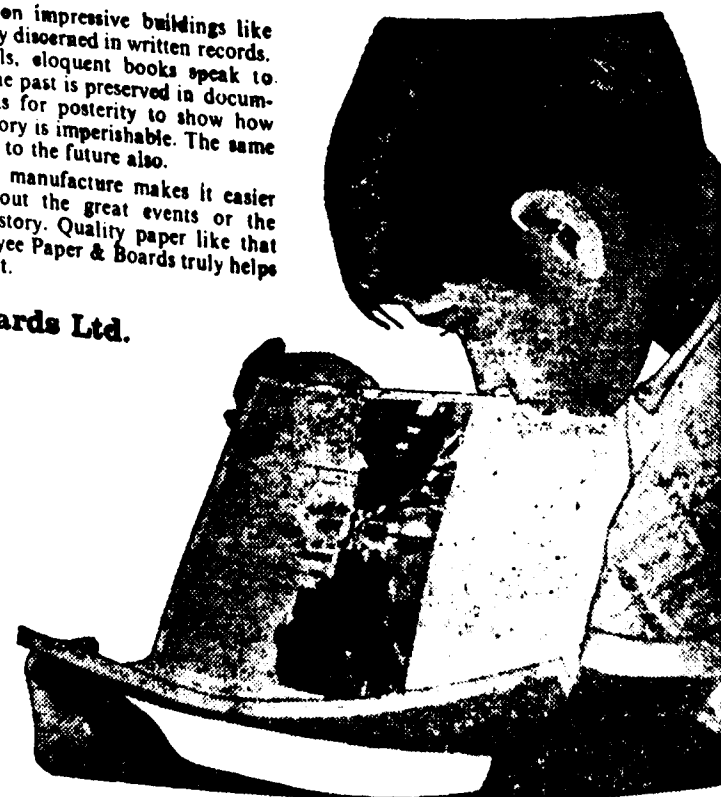
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The Watermark of Quality



Operating an amateur radio station from one's home is a hobby for many in the affluent countries all over the world. Though this hobby is encouraged in every way by Governments of all countries and regulated by the United Nations agencies, all Governments insist on the amateurs taking out a license for operating a transmitting radio station. The amateurs who transmit and receive messages by means of their own radio stations and receivers are called Hams. The Government of India is equally anxious to secure wider acceptance of this hobby and some of the public sector undertakings like the Indian Telephone Industries have come forward to help amateurs in this respect. In our country, there is a minimum age, viz., 14, for issue of such licences.

HOW TO BE A HAM ?

The process of obtaining a licence is simple. The enthusiast has to pass a test in radio theory and should have the ability to send and receive the international Morse Code. There are two grades - I and II. In grade II the enthusiast is required to know very simple theory, operating procedure and ability to send and receive Morse Code at five words per minute. For grade I, the requirement is slightly advanced in theory and in the ability to send and receive Morse Code at 13 words per minute. The minimum age is 14 years. The licence fee is fifteen rupees per annum. All that the Ham needs is a suitable receiver and a reasonable aerial. To transmit they need a frequency measuring device.

Initially, the amateur is allowed to operate on CW (radio telegraphy) only and that too on the high frequency bands. After he completes 200 contacts, he is allowed to go on phone (AM) on these bands. This initial restriction serves two purposes. First, he becomes familiar with the operating procedures without which there will be utter confusion. Secondly, it compels him to attain a certain proficiency in CW, which is considered desirable. But for this restriction, he is likely to ignore CW. As the amateur gains experience he can get endorsements for SSB (Single Side Band Suppressed Carrier), phone operation, VHF, UHF and teletype operations. At this stage only the amateur's financial resources and the capacity to procure components and equipments are the limiting factors.

NOT EXPENSIVE

If the amateur really wants to come on the air, it is neither difficult nor very expensive. For example, a 25 watt phone (AM) transmitter in kit form costs about Rupees 350. Self-assembled, it costs much less. Even if this amount is considered costly a 10-watt CW transmitter can be assembled for less than half the above cost. These low power transmitters use receiving types of valves manufactured by BIL and a few other components purchased from the "disposal" market. Though one cannot win contests with such a transmitter, it provides enough fun. With a good antenna, contacts all over India and even across a few thousand

The fascinating hobby of Amateur Radio described in these pages has been made possible to a large extent by material found in an article on the subject written by Thiru V. S. Rajagopalan in the I.T.I. Magazines' Annual Number, and supplemented by Standard Literature on the subject.

miles are possible, given the proper propagation conditions. The ideal propagation condition is achieved when the ground-wave and the waves reflected from the ionosphere are received together reinforcing each other. With better experience and resources a 150-watt transmitter can be obtained. The 150-watt input to the final stage is the legal limit in India on the high frequency bands.

As for receivers, good ones from disposals of World War II vintage are available for between Rupees 600 300 and. It is possible to construct a good receiver using a crystal filter available from BEL and indigenously manufactured broadcast receiver components. Such receivers have already been built by enterprising Indian radio amateurs. In fact, complete SSB receivers have been built by Indian amateurs using indigenous transistors in receiver and low power stages and valves in the high power stages.

SENDING MESSAGES

Amateurs send messages either by voice or in International Code. Hams use a language that the untrained listener cannot understand. Part of this special language consists of three-letter groups starting with the letter Q. Hams call these groups Q signals. For example, groups Q signals means "What is the name of your station?" The Q signals have been agreed upon internationally, and enable hams who do not speak a common language to understand each other. The

Q signals also save time. When sending code, hams often omit vowels from many words as another time saver.

A typical message may be like this "TNX (Thanks) for the call. UR (your) RST is 589. Name JOE QTH (Location) SINGAPORE. WX Fine 25 C. RX AR88 TX Homebrew (Home made), Dipole (antenna) Input 50 watts. PSE (Please) QSL. 73 N. The number 73 stands for 'Regards.' The abbreviations and the words used in the above message are internationally recognised and hence no difficulty is experienced in exchanging important information required for filling the QSL Card. Some of the Q Codes and Ham abbreviations are given elsewhere in this page.

Amateurs, after they contact each other on the air, exchange what is called a "QSL" card. This is a written confirmation of the contact established by the concerned amateur on the air. It is something like the written message delivered by our P & T Department for a phonogram confirmation. It contains essential details like the date and time of contact, mode (AM, CW, SSB), quality of the signal, besides the name and address of the operator. Only these cards are admitted as evidence for awards in contests.

MORE ABOUT THE HOBBY

For purposes of identification, every radio amateur is allotted by the appropriate Government agency of his country what is known as a "CALL SIGN." It is analogous to the number plate of a motor car. The call sign is a mixture of alphabets and numerals. The call sign has two significant parts. The first part also known as 'prefix' indicates the country to which the amateur belongs. These prefixes are internationally recognised. The second part identifies the individual amateur. For example, call sign VU2JS stands for VU2 India and "JS" for the individual.

The usefulness of amateur radio is internationally recognised. Its interests are represented by International Amateur Radio Union

SOME OF THE Q CODES AND AMATEUR ABBREVIATIONS

QRG	.. Frequency
QRK	.. Audibility
QRM	.. Interference
QRN	.. Atmospherics
QRT	.. Closing down
QRX	.. Please wait
QSB	.. Fading
QSL	.. Confirmation
QSO	.. Radio contact
QTH	.. Location
BA	.. Buffer amplifier
CANS	.. Headphones
DE	.. From
HI	.. Laughter
K	.. Invitation to transmit
MOD	.. Modulation
OM	.. Old Man
PA	.. Power amplifier
ROGER	.. Received and understood
RPT	.. Report
VFO	.. Variable frequency oscillator
XYL	.. Wife
YL	.. Young lady
73	.. Kindest regards
88	.. Love and kisses

(IARU) on the administrative conferences held by the United National specialised agency for telecommunications Union (ITU). IARU is the representative body of International Amateur Radio Organisations. The frequency allocations in the various segments of electromagnetic spectrum are internationally recognised (subject to national Government's concurrence).

THE HAM AND THE SATELLITE

In 1971 the World Administrative Conference for Space Telecommunications recognised the value of participation of amateur radio operators in space research by officially defining amateur satellite service. The conference also allotted additional frequencies for use by amateurs when using space techniques.

At present, the sixth satellite in the series called "OSCAR-6" is in orbit. This is solarpowered with a design life expectancy of about one year. This satellite accepts signals in the frequency range of 145.9 to 146 MHZ from the ground amateur radio station and retransmits them in the range of 29.550 to 29.450 MHZ. It will accept CW and SSB signals. To have effective contact with the satellite, about 100 watts of effective radiated power is necessary.

Just like the Territorial Army, the Hams provide a readily available second line of communication in a crisis. During a P. & T. strike the Government of India utilised the services of Hams to handle the State Telegraphic traffic. The Army, Navy and Air Force of every country recognise the value of amateur radio operators as persons capable of coming to their rescue in crisis. To see the amateur radio operator with earphone clamped on his ears and fingers fiddling the transmitter knobs presents a picture of peace and contentment. Just like an angler calmly waiting for a "bite" he will wait for signals from far and from near. It is an interesting and absorbing hobby.

—O—

LOW COST HOUSING FOR



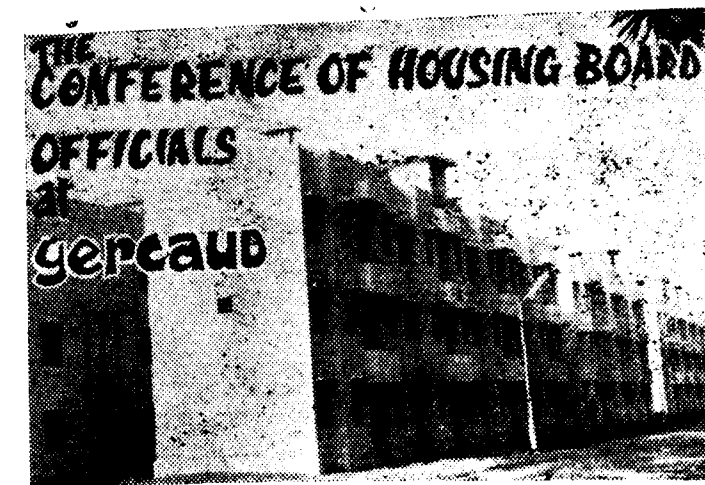
The Tamil Nadu Housing Board, a Statutory body which undertakes large scale housing projects for various categories of people, also land development schemes, allotment of developed plots to public on sale as well as hire purchase system. Formerly only single storeyed independent houses were used to be put up by the Board, but now flats and tenements are constructed and allotted.

A conference of the Housing Board Officers and Engineers with the Special Secretary to the Government, Housing Department and representatives of Finance, Revenue, Law and Rural Development and Social Administration Department, the Government was held at Chennai on 19th and 20th of October 1973. Thiru K. Rajaram, Minister for Housing and Labour presided over the Conference. The Slum Clearance Board was presented by its Chairman, Thiru Rama Arannal and its Chief Engineer.

The conference was convened mainly for the purpose of taking stock of the Board's progress in its housing activities and to find out ways and means of stepping up the progress, not only in the City of Madras but to make itself felt throughout the length and breadth of the State.

It was also the intention to discuss the various new techniques to be adopted in the Low Cost Housing Scheme to bring down the cost and also to have discipline in the use of scarce materials, such as Steel and Cement.

Special Low Cost Housing Scheme has been framed by the State Government for the benefit of the economically weaker sections whose annual income does not exceed Rs. 4,200. The scheme is intended to be operated throughout Tamil Nadu. For the present, work will be taken up wherever a group of persons have already acquired sites. Suitable Government lands, if available, will be made use of for this purpose. In other places, lands will be acquired under the Land Acquisition Act.



The maximum cost of the house constructed under this scheme is Rs. 10,000. The construction of house will be done by the Housing Board employing its own technical staff without resorting to the contract system. Thereby saving is expected to be effected to the tune of 15% of the cost of the building.

MODE OF PAYMENT

Initially only 10% of the cost of the building is to be paid as deposit by the beneficiaries. The remaining 90% is to be paid over 20 years in monthly instalments of Rs. 63. The plinth area of the building will be about 420 sq. ft. It will have a living, bed, kitchen, in addition to bath and toilet.

It is proposed to obtain finances for this scheme from the HUDCO. During the short period of 3 months that this scheme has been in operation, the Housing Board has approved 93 schemes for the construction of 2974 houses at a cost of Rs. 308.73 lakhs. HUDCO aid has been received to the tune of Rs. 66.20 lakhs for the construction of 602 houses. Work on 1196 houses has been started. Before the end of this year all these buildings will be handed over for occupation.

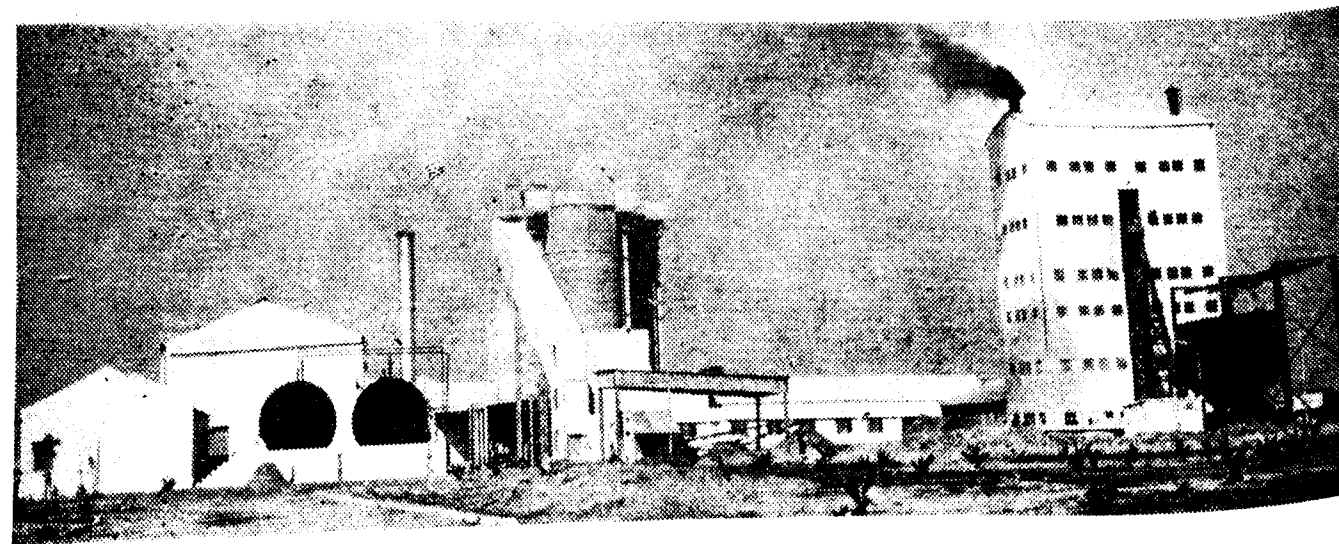
The Districtwise breakup is as follows :—

		Rs. in lakhs.
Madurai District	405	41.68
Tirunelveli „	214	22.92
Ramnad „	390	40.75
Kanyakumari „	64	8.60
Coimbatore „	534	50.53
South Arcot „	189	19.54
Thanjavur „	122	14.99
Salem „	287	27.53
Dharmapuri „	267	29.28
North Arcot „	262	22.50
Chingleput „	240	30.14

In the Chingleput District there has been very encouraging demand from the industrial workers at Thiruthani, Ennore, Sriperumbudur, Athipattu, Tambaram and Thiruvanniyur. It is hoped to cater to the needs of these industrial workers during this year itself.

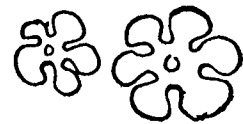
PIONEER IN COST REDUCTION

The various methods adopted by the Housing Board for the reduction of the cost of the buildings were discussed. The use of funicular shells as a substitute for the traditional R.C.C. saves the cost of roofing upto 40%.



The Cellular Concrete Plant at Ennore.

HOUSING BOARD GEARS UP FOR STATE-WIDE PROGRAMME



The catenary type of houses eliminating the use of steel and concrete to a large extent is one of the solution found by the Housing Board for the reduction of the cost.

The integrated type of construction whereby R.C. frames and bricks work are adopted even for the single-storeyed building is an innovation which has proved economical in clayey soils.

The Housing Board is one of the earliest users of the secondary species of timber with the object of better utilisation of the timber wealth of the country and to conserve teak wood which is scarce.

Various Construction Processes In Offing

A system of prefabricated houses to cater to the needs of the lowest income group has been evolved. The cost of this type is only a third of the traditional type of buildings. It saves steel to the extent of 30% and cuts down construction time by 75%.

Another technique which the Board is proposing to popularise, is the guniting process of pre-fabricated houses. Upto four storeys could be constructed by this method. 25% of the cost of construction could be saved, besides conserving cement and steel to the extent of 20 to 30%.

The Housing Board has been extensively using flyash as a partial substitute for cement. This has the effect of cost reduction to the extent of 2 to 5%.

The execution of works by departmental staff directly without employing contractors is another pioneering step taken by the Housing Board towards reduction of cost. The Board has launched on this bold experiment with its limited staff with a view to save for the allottees the margin of profit the contractors are likely to make if work is got done through them.

DESIGNS TO SHOW ECONOMY

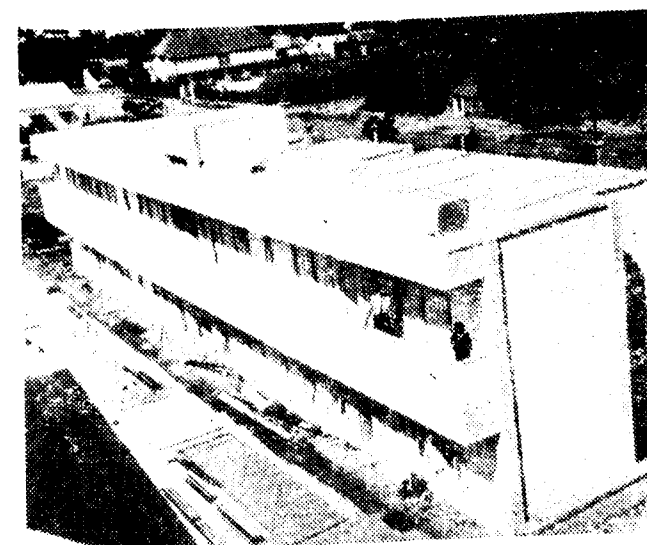
Besides the above measures of cost reduction in the fields, the Housing Board has always laid stress on economic designs, both architectural and structural, with a view to achieve maximum economy.

Through bulk purchase of building materials by open competition well in advance of the actual requirement, the Board secures competitive prices for the building materials purchased.

The Board has set up a wood working unit for the supply of doors and windows for its works. It is proposed to set up a semi-mechanised brick plant in the City. The Board has a programme of establishing building industries such as manufacture of Stoneware pipes, mosaic tiles, etc.

CELLULAR CONCRETE PLANTS

A plant for the manufacture of Cellular Concrete, first of its kind in the South East Asia, has been



A view of 12 in 1 block of tenements completed recently adopting GUNITING PROCESS of Prefabrication resulting in a cost reduction by 25 per cent.

3-A



117 tenements for slum dwellers constructed at a cost of Rs. 3 lakhs at Gundusalai road, Cuddalore.

erected with Polish Collaboration at a cost of Rs. 3.65 crores. The products of this plant will replace bricks and R.C.C. in all the works of the Housing Board within a short time.

The Conference recommended that the accounting work relating to the deposits from the public may be entrusted to any of the Nationalised Banks.

IN-SERVICE TRAINING

It was proposed to impart in-service training in accounts and office management to the Board staff. The measures to be taken for early realisation of the amounts due to the Housing Board was discussed.

In regard to land acquisition, it was considered necessary to enact special legislation with a view to cut down the delays and to minimise the amount of compensation.

CONCESSIONS

Government have agreed to allow certain concession in fixing the value of building and plots transferred by the Housing Board to the allottees for the purpose of stamp duty. The request of the Housing Board for the grant of 50% subsidy in respect of water supply scheme executed in par with the Corporation of Madras, will be examined by the Government.

The vacancies arising in tenements constructed under Slum Improvement Scheme are proposed to

A small prefabricated gunited house built at a cost of Rs. 3,500.

be filled up by allotment to Last Grade Government Servants at 10% of their pay.

With the increase in the number of housing schemes in southern Districts, especially with the heavy demand for special low cost housing, it has been proposed to set up two Units at Tirunelveli and Tanjavur.

The deliberations concluded with the Hon'ble Minister's

PROVISION OF HOUSE-SITES TO LANDLESS RURAL WORKERS

The Government of India have formulated a scheme for provision of house-sites to landless workers in rural areas as a Central Sector Scheme under which 100 per cent grant is made available to State Governments outside the State Plan Scheme. The salient features of the scheme are as follows :—

(a) The scheme aims at assisting the State Government to provide house-sites free of cost to families of landless workers in the rural areas who do not already own house-sites or a built-up house or hut on land of their own ;

(b) The Government of India will give 100 per cent grant for acquisition and development of lands outside the State Plan Ceiling ;

(c) Financial assistance under the scheme will be admissible only if the State Governments have enacted legislation conferring home-stead rights on which their houses/huts stand at present and provided the State Government should have utilised the available lands owned by it in the Districts proposed to be taken up under the scheme for providing house-sites, free of cost to families of landless workers ;

(d) All administrative expenditure connected with the implementation of the scheme will have to be borne by the State Governments ;

(e) The size of the house-sites should not exceed 100 square yards (The question of enhancing the extent is under correspondence with the Government of India) ;

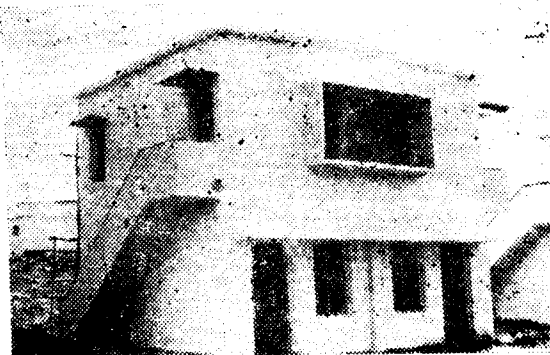
(f) The average cost of development of house-site should not exceed Rs. 150 per house-site ;

(g) The term 'development' will cover clearing and levelling of land and provision of paved streets and storm water drains on the lands proposed to be utilised for giving house-sites to eligible families ;

(h) In case where an adequate supply of potable drinking water is not already available, a covered masonry well may also be provided to serve a cluster of, say, 40-50 house-sites ; and

(i) Priority should be given only to those districts having sizeable concentration of landless rural

exhortation to the Board Officials to dedicate themselves to the task of finding shelter to the teeming millions and thus to fulfill the long cherished dreams of the leaders of the country.



→ A view of 4 in 1 block of tenements constructed for slum dwellers. 391 such tenements have been constructed at Peechaankulam Tiruchirappalli at a cost of Rs. 19.5 lakhs.

labourers, particularly of those belonging to Scheduled Castes and Scheduled Tribes.

Since the Government of Tamil Nadu have enacted the Tamil Nadu Occupants of Kudiyruppu (Conferment of Ownership) Act, 1971, and have introduced it in Thanjavur district, and the assignment of all the available lands in Thanjavur district to landless people have almost been completed, the Government have introduced the scheme in Thanjavur district in the first instance. The scheme is being implemented through the State Housing Board, with the help of the Collector and the other district Revenue Officials. The implementation of the scheme is in progress in this district. Under this scheme 1.15 lakhs families will be benefited in Thanjavur district. A sum of Rs. 75.51 lakhs has been sanctioned by the Government of India out of which a sum of Rs. 18.87 lakhs has been released. The Kudiyruppu Act has since been extended by Government to the districts of Chingleput, North Arcot, South Arcot, Tiruchirappalli, Dharmapuri; Salem (excluding Yercaud Sub-Taluk) and Ramanathapuram (excluding Rajapalayam Sub-Taluk).

Save rupee-a-day for a house HOUSE-SITE OR A FLAT

The Tamil Nadu Housing Board in collaboration with the Syndicate Bank have made arrangements for the collection of regular deposits from every intending depositor who joins the Rupee-a-day saving scheme. The aim of the scheme is to provide houses/flats/house sites to the masses all over Tamil Nadu.

The Scheme will be applicable to those who do not own a house/flat/house site anywhere in the State of Tamil Nadu and who are 18 years of age.

EASY MODE OF PAYMENT

Every applicant should deposit a minimum of one rupee-a-day or in multiple for a period of five years. The deposits shall be made daily, weekly or monthly at the nearest branch of the Syndicate Bank where the applicant is authorised to open an account. On completion of five years period the Board will construct and provide the depositor a house/flat/house site of value which will normally be four times the amount of the depositor's five years savings. The excess cost for the house/flat/house site will have to be paid by the prospective allottees in easy equal monthly instalments spread over a period of 5/10/15/20 years with interest.

On realisation of the 1/4th cost of the house/flat/house sites from the applicants in a period of 5 years

the Syndicate Bank will help the Board by investing 3/4th of the entire balance amount towards construction purpose.

About 5,000 persons have made enquiries about the scheme for getting particulars. Nearly 1,200 persons have given their applications. So far 1,108 applicants have been admitted and are paying money under this scheme in its branches.

THE SCHEME EXTENDED TO DISTRICTS

The Executive Engineer and Administrative Officers of Madurai and Salem Housing Units have convened a meeting of the members enrolled under the scheme within their districts and have explained the position and salient features to the members. They have stated that the members are convinced with the implementation of the scheme. The Executive Engineer and Administrative Officer of Salem

Housing Unit has set apart 25% of land out of 169 acres under acquisition for Salem Neighbourhood Scheme Phase. I, solely for implementation of the scheme. The Executive Engineer and Administrative Officer, Madurai Housing Unit has proposed to acquire 900 acres of land for various schemes and the acquisition proposals have been sent to Government and a portion of lands will be set apart for the implementation of the scheme.

INDIAN BANK ALSO

The Executive Engineer and Administrative Officers of other Housing Units have been instructed to convene similar meetings to explain the features of this scheme. A meeting of the members admitted to the scheme in the city of Madras will also be convened shortly. The lands under acquisition in West of Kalaingar Karunanidhi Nagar, Vyasarpadi and Tiruvannamur will be utilised for this scheme.

The Indian Bank have now come forward with a similar scheme and the Board in its resolution No. 376, dt. 28-12-1972 has approved the proposal and application forms etc. are being supplied to the members of the public. So far 84 persons have opened accounts and are making the deposits. The last date is proposed to be extended upto 31-12-1973.

—:o:—

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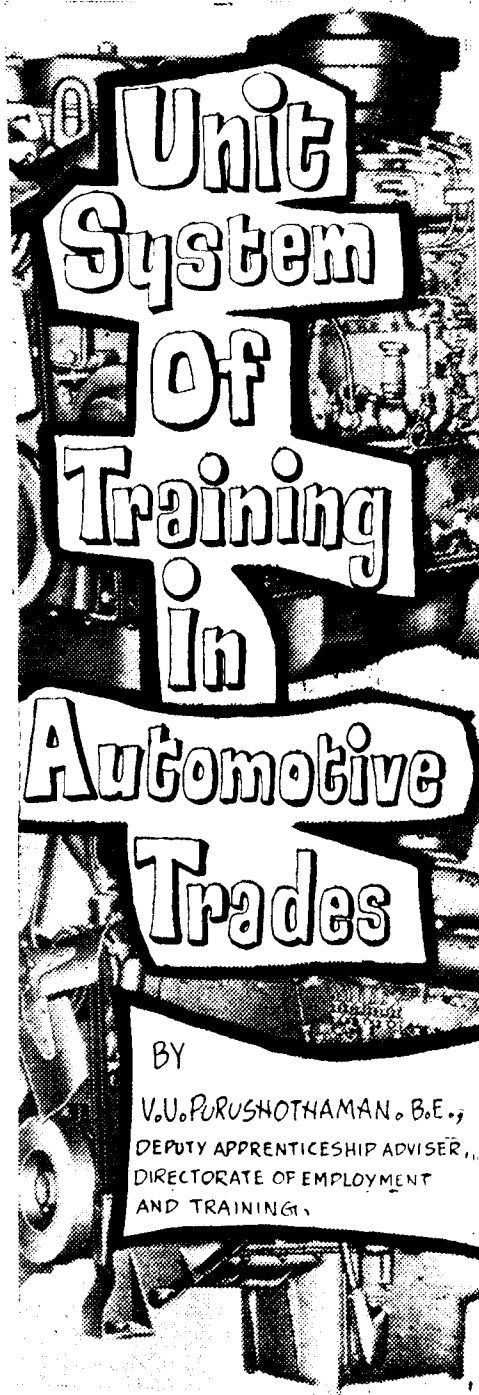
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The automobile industry is a major engineering industry with a vast scope for employment. A person, who begins his career as a cleaner or an apprentice under a mechanic in an automobile workshop, can rise to the level of a full-fledged mechanic or automotive specialist in course of time and can even aspire to become a Shop-Foreman, Service Manager or Parts-Manager ultimately. With the experience in automotive servicing and an aptitude for selling, there are bright prospects of rising to positions such as Sales Manager.

To become an automotive specialist, one must start by learning how each unit in an automobile works. Today's automobiles are precision-engineered machines that must be properly serviced if they are to operate in an efficient and safe manner. The automotive service industry needs specialists who understand the basic science of operation of the various units. Not only is this knowledge necessary to detect troubles in an automobile but with this background it will be easier for one to keep abreast of technological changes in the industry.

All these pre-suppose suitable training in the various automobiles units such as Auto-Electrical work, Auto Machining, Transmission, power plant and servicing, etc. In this connection it is worth mentioning that current thinking on training lays stress on giving greater importance to a sound and broad-based basic training for the first year to serve as a foundation for the further development of the unit of specialised skills later on.

Relevant to this is the institutional training imparted in the Industrial Training Institute in the trade of Mechanic (Motor Vehicle). This is a comprehensive training and



serves as the basis for further training within the industry. The basic training includes fitting, turning, sheet metal work, blacksmithy and welding, besides automobile work consisting of power unit, transmission, ignition, electrical systems and chassis work. The basic training so provided forms a firm base for further specialisation in 4 or 5 units like Auto Electrician, Auto Machinist, Auto transmission, power plant and servicing and Mechanic (Scooter/Motor Cycle). Such units of specialisation will provide greater self-employment opportunities. The same is illustrated in the diagram below :

STRUCTURE OF UNIT SPECIALISATION.

STAGE I.	STAGE II.
One year	Auto Electrician
Broad	6 months.
Based	Auto-machinist
Basic	1 year.
Training	Auto Transmission
in	1 year.
Mechanic	Power Plant and
(Motor	Servicing 1 year.
veh.cle)	Mechanic (Scooter
	Motor Cycle)
	6 months.

It will be seen from the above diagram that specialisation in a particular unit is preceded by a broad-based basic training which will equip the craftsmen with adequate skill, not only in the diversified branches of the trade, but also in the unit to be specialised later. Specialisation in the different units has its own relative merits when compared to generalisation, from the point of view of employability. An individual, who has specialised in any one of the units may also

specialise in another unit, or units according to the needs of the industry and that of the individual.

The unitwise specialisation of skills is explained below :

Auto-Electrician :

The maintenance of electrical system as applied in automobile has relevance to diagnosis of electrical faults, Dynamo and Starter, Motor Overhaul, battery maintenance, electric circuit wiring, etc. In fact, an electrician or a wireman, who has got basic knowledge about electrical engineering, can also attend to auto electrical work. But it would be more appropriate if a Mechanic (Motor Vehicle) specialises himself in auto electrical works. Any field of specialisation calls for sufficient background of the basic principles and its applicability to the related field. As far as Mechanic (Motor Vehicle) is concerned, such basic knowledge about the mechanism of motor vehicles is imparted during the basic training which is a broad based one. The electrician and wireman are not taught about the mechanism of motor vehicles, but they are taught more with reference to general electrical equipments used in industries. So, a further training for a period of at least 6 months in industry specialising in the electrical system of automobile would be of immense help to the Mechanic



I. T. I. trainees with the Principal, Thiru Ponnambalam.

(Motor Vehicle). It may also be mentioned here that in almost all automobile workshops auto-electricians are employed, besides mechanics. Specialisation as to electrician has wide possibilities for self-employment as well.

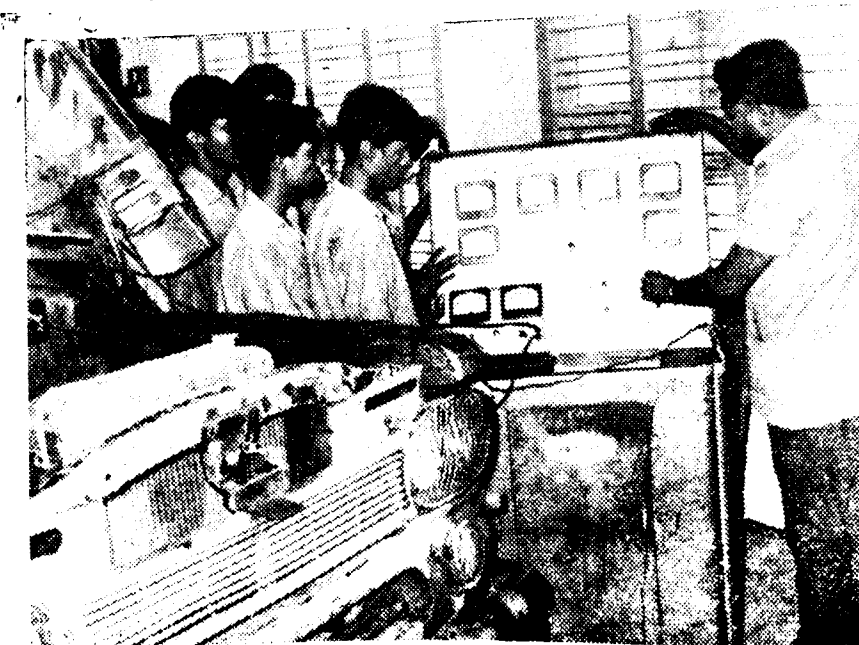
Auto Machinist :

This is another field of specialisation for a basic motor mechanic. Crank shaft grinding, cylinder boring and honing, valve grinding, etc., are to be done with greater accuracy

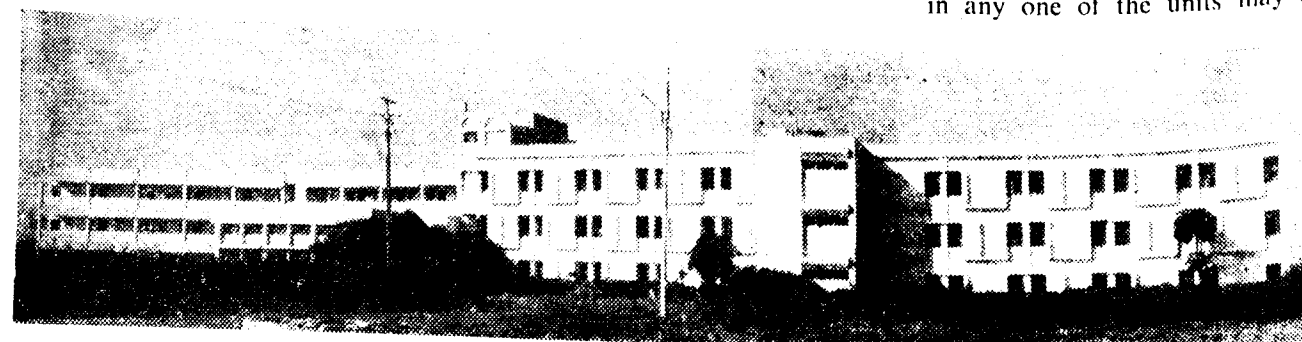
and care so that repair works on power units will be more effective and economical. Only those who have got sound knowledge of automobile mechanism will be able to judge exactly the accuracy required so as to bring the engine to perfect working condition. Though a Machinist (Grinder) can also carry out such types of grinding, he may not have much scope to further improve his skill in his trade as automobile workshops are not equipped with all types of grinders which are available in engineering industries. Again full time work for a machinist (grinder) in an automobile workshop will be rare and hence employing a Machinist (Grinder), exclusively for machining work, will not be economical to the establishment. A motor mechanic, who has also specialised in reconditioning work, will be ideal for establishments as his services can be utilised to the maximum, both as a motor mechanic and also as an auto machinist. In view of these advantages, specialisation in this unit will provide greater employment opportunities for these trainees in automobile workshops. A further training in industry for a period of 1 year in this unit will be sufficient to impart the specialised skill.

Auto-Transmission :

Power transmission work, both standard and automatic transmission in automobile, involve adjustment of clutch, overhauling of gear box,



Demonstration of testing the performance of the engine with the aid of "KING ANALYSER"



Free Hostel for I. T. I. trainees.

stripping and re-assembling propeller shaft, universal joint, front and rear axle drives, overhauling of steering system and correct wheel alignment. Specialisation for a period of 1 year in this unit as well as in chassis work in industry will adequately equip a basic motor mechanic to face confidently the challenging problems that usually crop up in these areas.

Power-Plant and Servicing :

The automobile power unit is a comprehensive and an important unit which controls the automobile engines, cylinders, pistons, crankshaft, camshaft, cooling system, fuel system, etc. Hence, servicing of the power plant is the most important line of specialisation because the upkeep of vehicles in good condition depends entirely on the overhauling, periodical servicing and check-up of the controlling system. Most of the automobile workshops have separate service stations where periodical servicing and maintenance of vehicles are carried out. There are also a number of filling stations extending such services for periodical check-up. The basic motor mechanic with specialised training for a period of 1 year in this unit in industry will be in great demand in the industry.

Mechanic (Scooter-Motor Cycle):

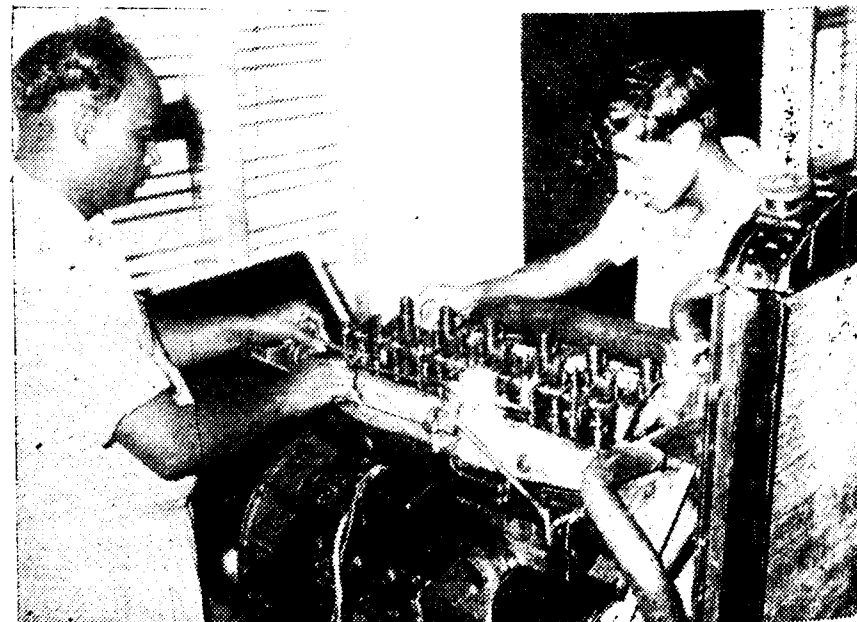
Scooters and Motor-Cycles are the common mode of transport and hence the demand for them and supply are increasing day by day. This has led to a situation where qualified mechanics in this line are in great demand to keep these vehicle moving. In the years to come, this demand will register further increase. The broad based basic training in Mechanic (Motor Vehicle) trade covers the fundamentals of this unit of specialisation also. Therefore, further training for a period of 6 months in this unit in industry will be adequate for this purpose.

To sum up, we shall now list the main advantages of the unit skill system of training in the light of the above digression :—

1. This system of training in specialised units instils confidence and hope in the minds of those who undergo this training by providing wide scope for self-employment.



Value refacing.



Tuning up of the engine

2. This system supplies qualified personnel specialised in the various units of operation to meet the demands of the industry.

3. The services of personnel trained in the specialised units of skills can also be utilised for general repair work, wherever required.

4. The comprehensive basic training initially given prior to specialisation obviate the need for providing further basic training in any unit of specialisation.

5. More seats can be located for apprenticeship training by fully utilising the facilities existing in service stations and re-conditioning workshops which could not otherwise be tapped for apprenticeship training in Mechanic (Motor Vehicle) trade.

In conclusion, it can thus be said that specialisation in the various units of skills is advantageous, not only to the trainees and to the employers but also in meeting the exacting demands of the industry as well.

—:o:—

MINIMUM WAGES FOR FARM LABOUR

The Tamil Nadu Government have announced its decision revising and refixing under the Minimum Wages Act 1968 the minimum wages for agricultural labourers on the basis of the recommendations of the Karthikeyan Committee. The revised rates are applicable to the whole State except East Thanjavur Development District comprising Sirkali, Nannilam, Nagapattinam, Mannargudi and Thiruthuraiipoondi taluks where the Tamil Nadu Agricultural Labourer Fair Wages Act, 1969 is in force. In all, nearly 44 lakhs agricultural labourers of all categories all over the State are to be benefited by the decision of the Government.

REVISED AND REFIXED MINIMUM WAGES

The minimum wages recommended by the committee are :— (the 1959 rates are given in brackets):

Ploughing with employees' bullocks and plough—Rs. 5.50; without bullocks—Rs. 3.00 (Rs. 1.25). The duration of working time is five hours a day.

Sowing, plucking of seedlings and transplanting operations—Rs. 3.00 for men (Re. one) Rs. 1.75 for women (Re. 0.85) and Rs. 1.25 for non-adults (Re. 0.62).

Harvesting and reaping—Rs. 3.25 for man, Rs. 2.25 for women and Rs. 1.50 for non-adults. No rates were fixed for this category in 1959.

The Government have also further accepted in toto the recommendation of the committee in this regard that if the existing rates of all or any of the agricultural operations are higher than the rates revised,

such higher rates are to be paid to the agricultural workers. The practice of payment of wages in kind wholly or partly for any class of operations should also be continued, provided such wages are not less than the minimum wages refixed. Every minimum rate of wage is an all-inclusive rate allowing for the basic rate, cost of living allowance and the cash value of concessions, if any.

MINIMUM WAGES RECOMMENDED

The minimum rates of wages were originally fixed by the Government in 1959 in the State and the same has been in vogue till now without change or modification. An upward change for the better in the minimum wages of agricultural employees is long overdue and the anomaly has been rectified to a greater extent by the recommendations of the present committee.

As per the decision of the Government a substantial increase in the minimum rates of wages for the various grades of agricultural employees and numerous categories of agricultural operations has been given effect to resulting in overall upward revision of minimum wages for agricultural workers all over the State except East Thanjavur development district.

The Committee set up in December 1972 by the Tamil Nadu Government under the Minimum Wages Act, 1946, for fixation of minimum wages for farm labour under the chairmanship of Thiru V. Karthikeyan, Member of the Board of Revenue, submitted its unanimous report to the Minister for Labour and Housing, Thiru K. Rajaram on

1st August, 1973. After going into all aspects of the problem, contacting all men of note and institutions in the State relating to agricultural operations and operations ancillary to agriculture, the Committee has, in its unanimous report, advanced many a suggestion and recommendation covering the whole range of agricultural operation such as the wage structure and working conditions of the agricultural labour force, set-up of a proper institution to implement the decisions of the Government at the grass root level.

FARM LABOUR COURTS AT GRASS ROOT LEVEL

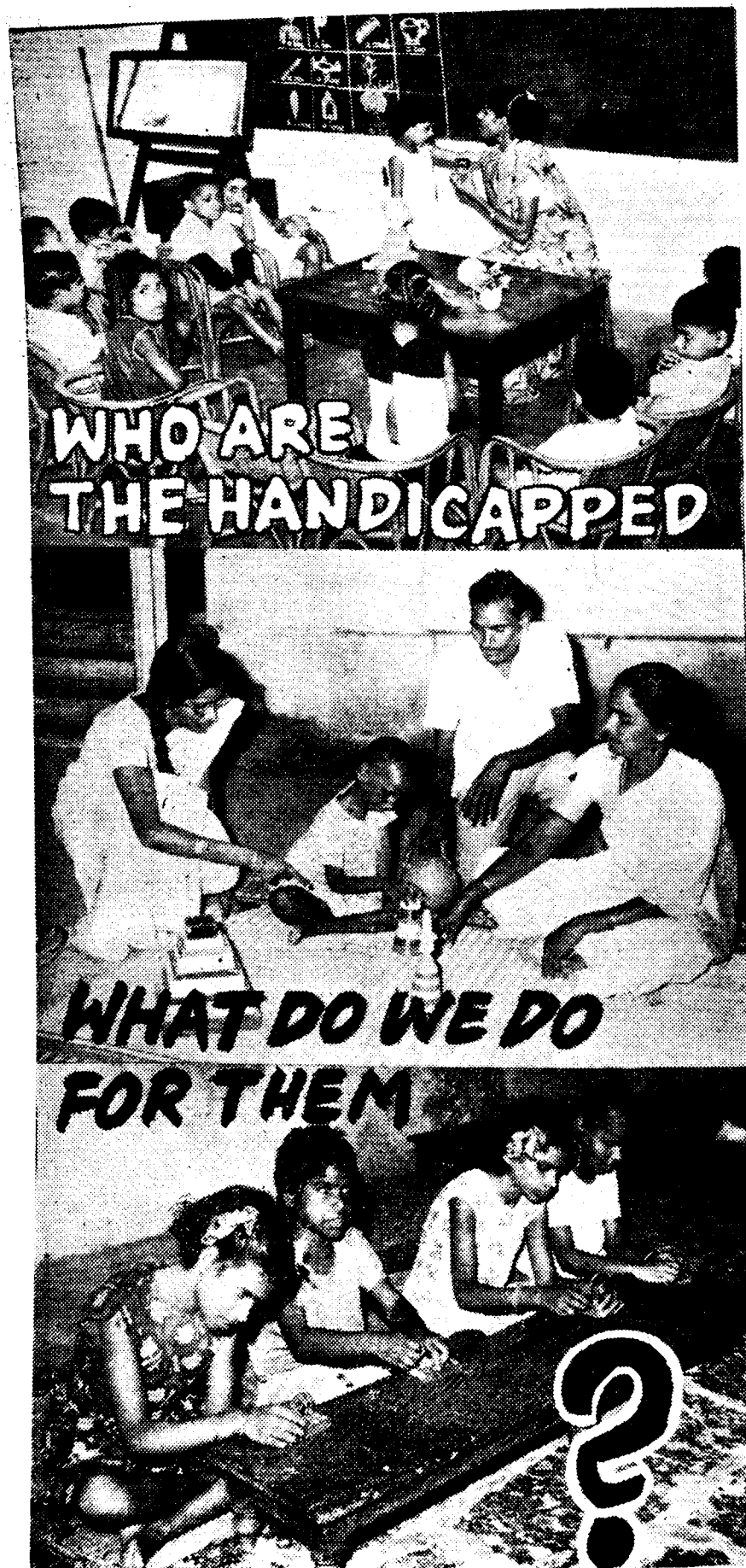
Apart from recommendations concerning wages, the Committee has also put forth a number of valuable suggestions such as setting up of Farm Labour Courts at local and Revenue Divisional level vested with requisite power to settle labour troubles as expeditiously as possible, establishing a separate agricultural labour wing headed by a Huzur Serishtadar in the grade of Tahsildar in each and every district collectorate.

Formation of a large number of labour contract societies comprising agricultural labourers to execute Government and local body works; setting-up of agricultural farmers on waste lands and establishment of small-scale industries in rural areas are some of the other suggestions made by the committee to combat the problems of seasonal unemployment and under-employment of agricultural employees. —R.N.

Lay-Off Compensation for non-strikers :

State Plea

The Tamil Nadu Government have requested the Government of India to amend the Industrial Disputes Act to enable such of the workers as do not participate in a strike in an industrial establishment to claim lay-off compensation in appropriate cases by taking the claims to labour courts.



Persons with deformities of body or mental retardation are called the "Handicapped." Such people can be trained to lead a happy, normal and useful life. This is what goes by the name of 'rehabilitation.' Such training is one of the greatest triumphs of modern medicine and education. Because these modern medicines and training methods are costly and time consuming, organised effort is called for in rehabilitation of the Handicapped.

Governmental interest in promoting such an organisation became pronounced after 1967 and as a result, the Tamil Nadu Association for the Rehabilitation of the Handicapped was formed and registered on 23-4-1971. As per the constitution, Ministers of the Government of Tamil Nadu holding certain portfolios have been named as Hony. patrons and certain Government representatives and certain Officials are made Ex-Officio Members of the Governing Body. The Government have also permitted the Assistant Director, Special Employment Office for the Physically Handicapped to serve as one of the Secretaries of the Association. Moreover, the Governor of Tamil Nadu is the Patron-in-Chief of the Association.

STATE BOARD FOR HANDICAPPED

Not content with this, the Government of Tamil Nadu went a step further and organised a State Board for Handicapped. This is the first Board of its kind to be formed by any Government in the Indian Union. The Board will be able to study the problems of the handicapped from all aspects and render suitable assistance to all those already engaged in this cause and also give direct help in all deserving cases.

The Handicapped include four main classes of people. These are the blind, the deaf and deaf-mutes, the crippled and lastly the mentally retarded.

Pictures show how the deaf (top) retarded (middle) and blind (bottom) are taught.

The blind are taught how to read. They are made able to walk about by themselves and to do certain work. The deaf have been taught how to understand speech. Deaf-mutes have been trained to talk. Men with missing arms or legs have been given new ones, and have been taught to use them. Many children with intelligence below normal have been trained to work and to live happily with people of normal intelligence. Society in general has gained from their talents and skills which would otherwise have been lost.

FIRST BLIND SCHOOL OF TAMIL NADU IN 1890

It was in France, as far back as 1784, that the first school for the blind was opened in Paris by Valentin Haüy. He was convinced that people who lose one sense often develop their other senses to a degree above normal. He found that in the blind the sense of touch is often highly developed. He used the sense of touch to teach the blind to read, and invented books with raised letters. Haüy's idea caught on quickly in Europe. Schools for the blind were opened in many countries in the early 1800's and there are eleven such schools today in Tamil Nadu. The first school for the blind was opened in 1890 at Palayamkottai.

Valentin Haüy's system of raised line letters was imitated widely, but it was not entirely satisfactory. Only about half the blind students could learn to read by this system. In 1829 another Frenchman, Louis Braille, invented a system of writing for the blind. This system uses raised dots which can be read much more easily and quickly than raised lines. Braille is now the standard system of reading and writing for the blind.

The teaching of various subjects to the blind varies considerably from methods adopted in other schools. Models, stuffed birds and relief maps are used for teaching history, geography and science. In colleges, however, (bottom picture) the blind students take notes in classes along with the sighted. Teaching the blind in schools requires special training and a good deal of patience.





THE DEAF

For many centuries persons, who were born deaf, were thought to be hopelessly handicapped. They were considered to be incapable of speech although they possessed normal vocal organs. These organs were not used by deaf children because speech comes as a result of imitation. For this reason, the deaf child must be taught artificially to do that which comes so naturally to the hearing child.

The pupil watches the speaker's lips, and, by feeling vibrations, learns to understand the spoken word. This method is also used

to teach the deaf to speak. The pupil watches the lips, tongue, and other organs used in speech. By touching the teacher's throat, he attempts to imitate the vibrations of throat muscles as used in speech.

RESIDUAL HEARING

There is considerable study being given today to the development and training of what is called residual hearing. It has been found by scientific tests that many deaf persons have a very small amount of hearing ability which is often overlooked. If this residual hearing is properly trained and developed, deaf children can be taught to speak by sound.

It is a silent word for the deaf. Top left (1) shows an interpreter for the deaf. He can translate a speech into gestures which the deaf can understand. But this is not enough. Hearing aids and the speech pathologist (top right) (2) shows how a deaf child is made to imitate speech with the help of hearing aids and a mirror. Picture (3) shows that speech is an act of imitation and that the mere sound of her voice brings happiness to this deaf child. But meticulous testing is resorted to as shown at (4) before a hearing aid is prescribed. Schools for the deaf determine use of gestures as a means of communication by their wards.

Artificial Limbs :—The most important development in aid to the crippled is the use of artificial limbs. The making and fitting of artificial hands, legs, arms and eyes is become a separate branch of medicine called prosthetics. This is come to be included in Tamil Nadu Industrial Training Institute as one of the form of the training.

Schools for the feeble-minded emphasize social growth. The students are taught how to behave in the home and the community. They are taught good manners, a neat appearance and hygiene. They are also taught simple trades by which they can make a living.

Rehabilitation of Handicapped in Tamil Nadu

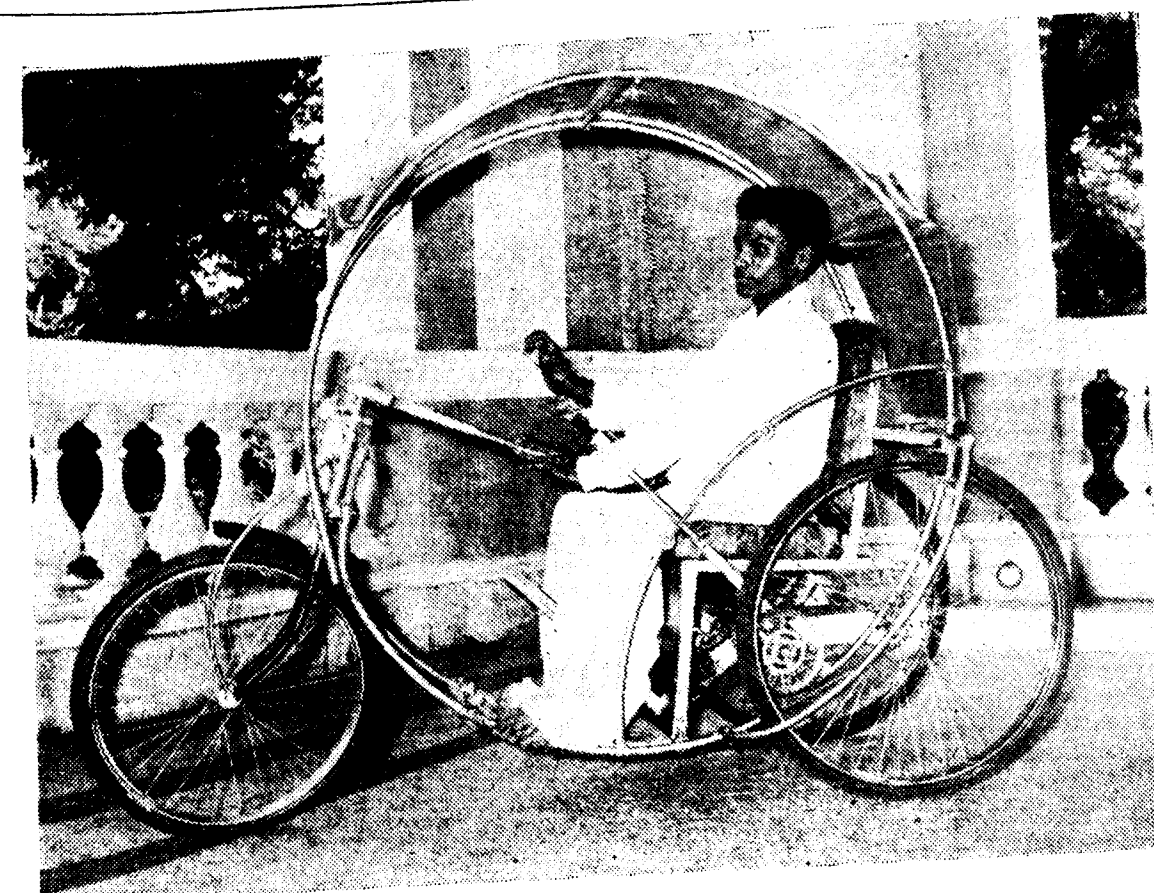
According to the census taken in the year 1961, the estimated handicapped population was in the region of 4.8 lakhs in Tamil Nadu, of which the orthopaedically handicapped formed about 1.1 lakhs. This was more than a decade ago. There is reason to presume that the size of the handicapped may have gone up.

This State Board for the Handicapped is currently engaged in the task of bringing out a compendium of information about the institutions,

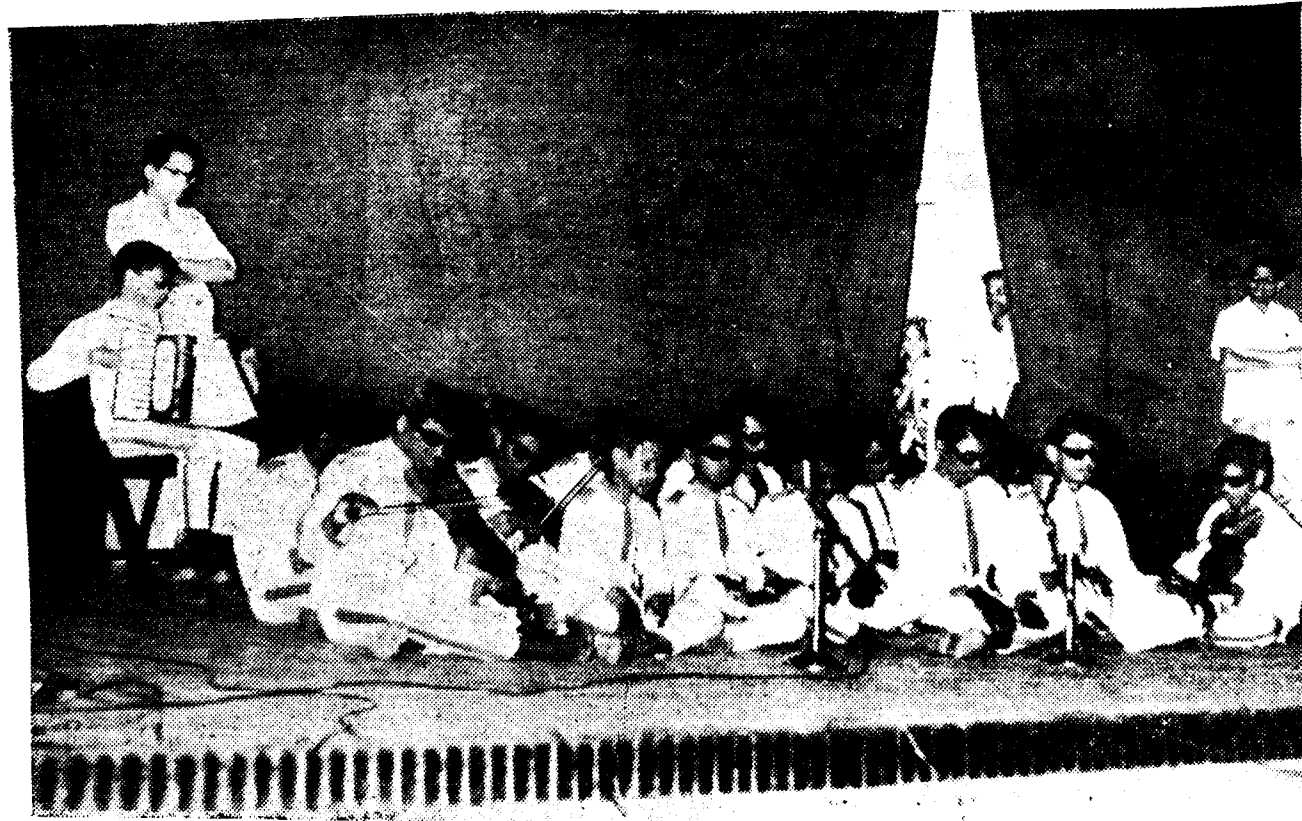
training centres, etc., connected with the handicapped. A recent compilation of information on institutions for the handicapped in Tamil Nadu made by the State Board reveals that the institutions for the blind are the largest in number followed by the institutions for the deaf-mute with other categories trailing behind. A break-up of the institutions categorywise and sector-wise is given below, showing that there are only 38 of these specialised institutions with a total in-take of 3,246.

The school for the Blind at Palayamkottai, the oldest institution of its kind in Tamil Nadu for the blind, started functioning

Category of Institution.	Educational Institutions		Intake Capacity	Training Centres		Intake Capacity
	Govt.	Pvt.		Govt.	Pvt.	
Blind	6	4	1000	1	3	81
Deaf-mute	1	10	1600	—	1	37
Orthopaedically Handicapped	—	1	80	—	3	132
Mentally Retarded	—	4	220	—	—	—
Leprosy cured	1	—	—	—	1	50
Common	—	—	—	1	1	46



AN ORCHESTRA WHICH HAS NO USE FOR NOTATIONS!



The Blind have very acute capacity for hearing; so schools for the blind include music in their curriculum

from 1890. Similarly, the Florence Swainson Deaf School at Palayamkottai is the earliest school for the deaf, having been established in 1897. The C.S.I. School for the Deaf in Mylapore came into existence in 1912.

Remarkable Strides After 1970

Five institutions for the blind and deaf came into being between 1920 and 1930. During the years between 1950 and 1960, six more institutions were started while 14 institutions have come up between 1960 and 1970. After the year 1970, ten more institutions started functioning.

The first regular course for teachers for the Blind on an All-India basis was a 1-year programme that was grounded in 1960 at Palayamkottai by the National Academy of Teachers of the Blind established under the auspices of the National Association for the Blind in the National Christian Council.

A regional training centre for the Teachers of the Blind has been functioning at the Government School for the Blind, Poonamallee.

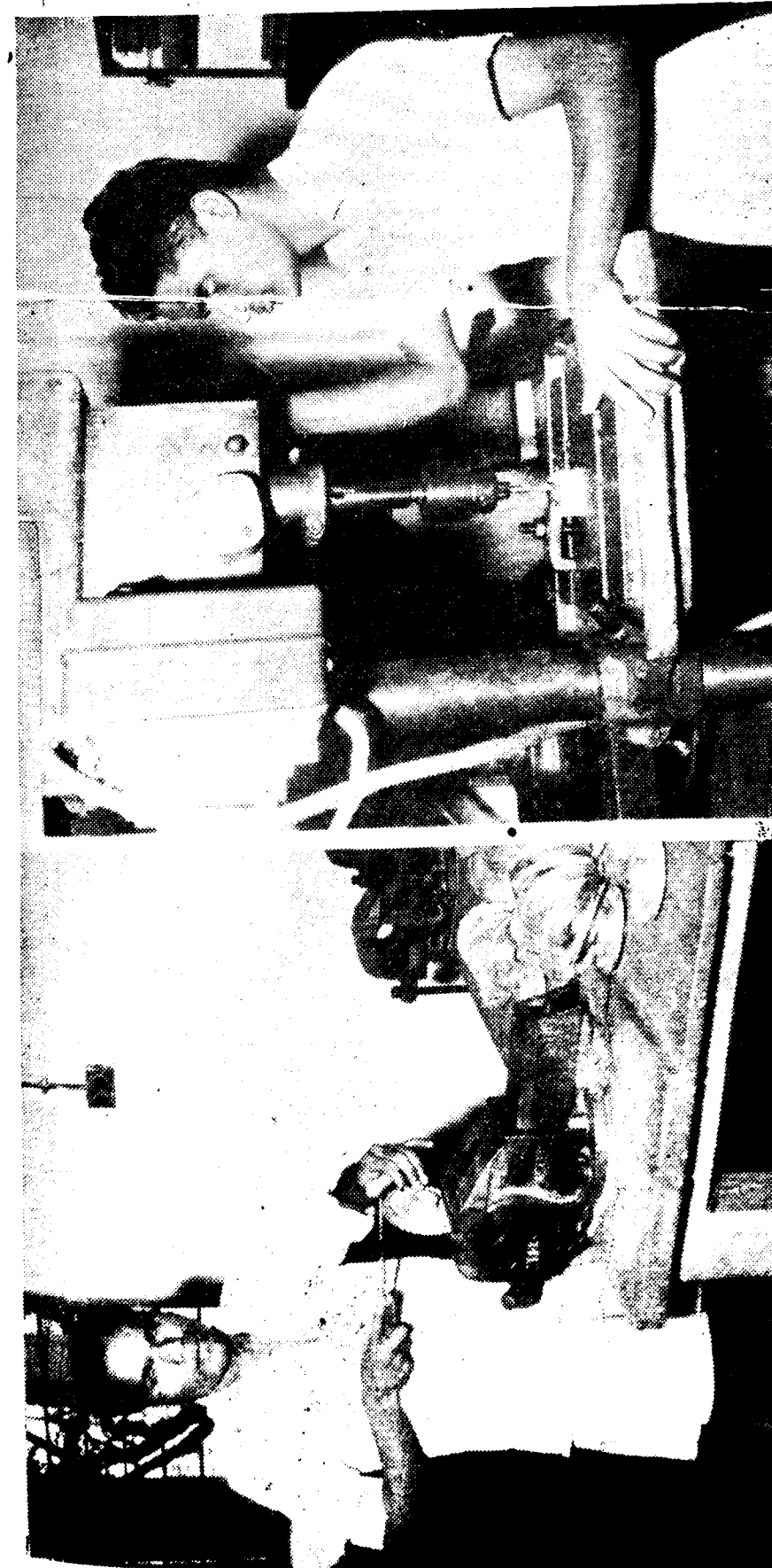
A majority of the institutions in Tamil Nadu provides elementary education, vocational training and instruction in music. A few blind students are prepared for Matriculation or equivalent examination at the Government School for the Blind in Poonamallee near Madras.

The Artificial Limb Centre of the Department of Orthopaedic Surgery, Government General Hospital and Madras Medical College, is a notable landmark in the history of rehabilitation of the handicapped in Tamil Nadu. Rehabilitation of the orthopaedically disabled persons has been a great problem in this part of the country due to lack of facilities for prosthetic and orthotic fitting. With the founding of this Artificial Limb Centre in 1964, a void for the orthopaedics ceased to exist in the areas of limb fitting and brace fitting.

The Vellore Association for the rehabilitation of the physically handicapped is running an Agricultural and Poultry Unit at Sevoor near Katpadi where ten leprosy cured and burnt out persons are resettled.

Training for the Handicapped

The concept that the handicapped are practically a separate species is slowly but perceptibly giving way to the awareness that, if given the opportunity, they can develop their residual capacities to the point of assuming their responsibilities as non-handicapped citizens leading a full and independent life. It is increasingly recognised that the community owes the handicapped the responsibility of providing this opportunity and that the process of rehabilitation is not complete until they obtain a job and become at least partially self-supporting. Job placement involves many factors; the handicapped individual must have the skill and physical



abilities necessary for handling a particular job; he must be able to meet the standards of work performance set up for that job; he must not be a safety hazard to himself or to his co-workers and the job must not fatigue him unduly or enhance his disability.

Eleven training-cum-production centres, of which two are Government and the rest private Training Centres, are functioning in Tamil Nadu. Details of the categories of the handicapped, the institutions and the trades in which training is offered are given in the last pages in this issue.

Employment for Handicapped

In July, 1954 the Government of India established in Madras an Employment Office for the ex-trainees of the Training Centre for the Adult Blind, Dehra Dun. This Office was the fore-runner of a more comprehensive scheme for the establishment of the Special Employment Office for the Physically Handicapped. The Employment Office for the blind established at Madras in 1954 was converted into a Special Employment Office for the three categories of the physically handicapped and this office started functioning with effect from 1-4-62. The Special Employment Office for the Physically Handicapped at Madras has so far placed 1519 applicants in jobs, of whom 127 are blind, 253 deaf-mutes and 1139 orthopaedically handicapped. Of these 1519 placed handicapped, 251 were found, through follow up, to have satisfactorily adjusted themselves to their job situations. There were 1368 applicants on the live rolls of this Special Employment Office for Physically Handicapped as on September 30, 1973, of whom 161 were blind, 144 deaf and 1063 orthopaedically handicapped.

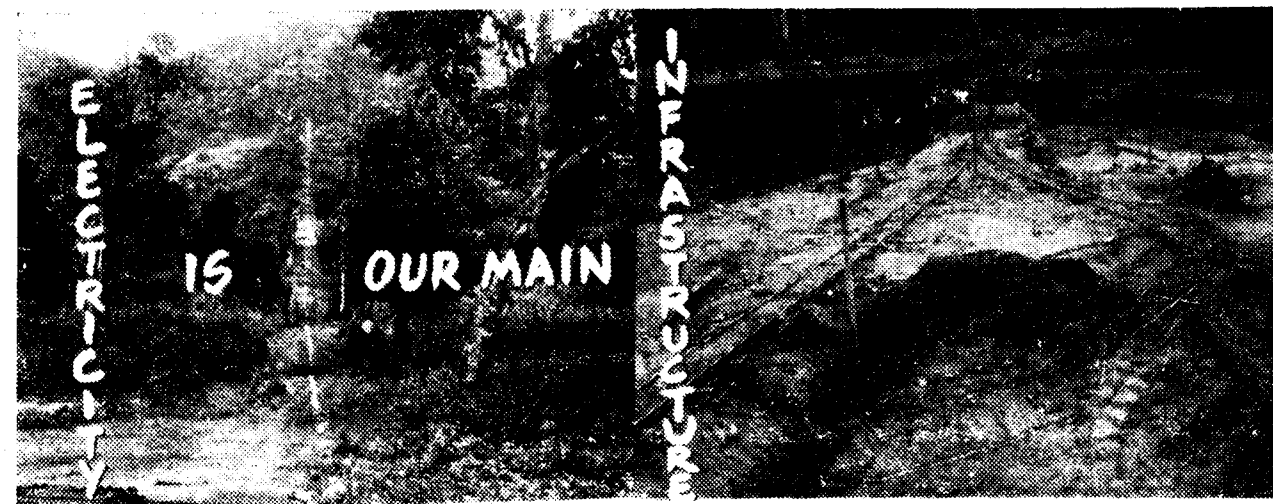
The Government of Tamil Nadu have taken special steps to promote speedy placement of the physically handicapped in employment. In regard to recruitment to State Government Vacancies, priority III has been accorded to the physically handicapped. Apart from this, a provision to pay wages for the first fortnight of trial by employers, for conveyance charges to go to an employer and back and for refreshment charges to the deserving physically handicapped applicants when they have to wait for prolonged periods for interviews with employers or at the Special Employment Exchange or at the place of medical examination, has also been made.

Awards for Employers

Just as the National Awards instituted by the Government of India, the Government of Tamil Nadu have also instituted State Awards for the best employees and the employers of the handicapped. These awards have been introduced for the first time in 1971 and continued from then on. One award (Merit Certificate) each is given to the outstanding employees of the blind, deaf, orthopaedically handicapped, mentally retarded and leprosy cured. Similarly one cash award each of Rs. 150 is given to the most efficient handicapped employee falling under the categories of blind, deaf, orthopaedically handicapped, mentally retarded and leprosy cured. The Government of Tamil Nadu have instituted an annual award of Rs. 200/- to the best teacher of a Vocational Rehabilitation Centre. A silver rolling trophy is also proposed to be presented to an institution which trains a large number of physically handicapped persons. The cardinal objective underlying the institution of these awards is to focus and foster the attention of the community at large and the industry in particular, on the multiple problems associated with the rehabilitation of the handicapped and to help animate the public awareness and constructive community consciousness, which have been lying dormant, towards the onerous and urgent need to meet the problem of the handicapped.

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A FEW SPECIMENS OF THE ART OF THE DEAF - MUTES



INITIATING THE DISCUSSIONS ON THE ANNUAL FINANCIAL STATEMENT FOR 1973-74 OF THE TAMIL NADU ELECTRICITY BOARD IN THE TAMIL NADU LEGISLATURE, ON 19-11-73, ELECTRICITY MINISTER THIRU O.P. RAMAN SAIR:

Electricity has become the basic infrastructure and a most facile tool in the hands of the society for development and economic growth. This State was, therefore, very much concerned about continued power development to support a sustained growth, especially in the Industrial and Agricultural Sectors.

Power shortage despite manifold increase in production

The installed capacity of Tamil Nadu Grid today stands at 22.4 M.W. comprising 1224 M.W. from 17 Hydro Stations, 600 M.W. from Neyveli Thermal Station and 430 M.W. from the two Thermal Stations at Ennore and Basu Bridge. This is about 14.45 times the installed capacity in 1951. During summer months when irrigation-tied stations are closed, the effective generating capacity would be about 1371 M.W. against the requirement of nearly 2010 M.W. including reserves for meeting an anticipated unrestricted peak demand of 1675 M.W. The deficits in generating capacity during the current year for meeting the peak demand would, therefore, be 639 M.W.

Last year in November 1972 when the Financial Statement was presented in the House, a 25 per cent. power cut was in force which was followed by a deepening power crisis later necessitating imposition of a 75% power cut. The Hon'ble Members might remember the main causes for the crippling power shortage—failure of S.W. monsoon in Tamil Nadu as well as in the neighbouring States of Kerala, Karnataka and Andhra Pradesh, reduced output in Neyveli and absence of any significant reliefs from outside, in the face of continued increase in power demand. Members may also recall that the serious power shortage was not confined to Tamil Nadu alone but it engulfed the whole country barring the State of Madhya Pradesh.

Barter deal for power

During the critical period of power cut, the Board and the Government took all possible steps to maximise generation at Board's Thermal Stations. Generation at Neyveli Thermal Station was also stepped up considerably in the crucial summer months of 1973. At the instance of Board Government, Neyveli Lignite Corporation afforded higher power relief by shutting down their briquetting and fertilizer plants at Neyveli. Neyveli Lignite Corporation have also agreed to go in for oil firing for 2 Units at Neyveli resulting in additional energy availability in 1st/2nd quarter of 1974. Tamil Nadu Electricity Board would bear the incremental cost of generation due to the con-

version. Opportunities were also availed of for obtaining energy reliefs from other States on barter deals i.e., power in exchange of cement, yarn and tyres to Kerala; tyres to Karnataka and cement, textiles and chassis to Maharashtra. These special reliefs accounted for nearly 5 lakhs units/day from March/April 1973 and continued till July 1973, though Maharashtra stopped supply by May 1973. The actual consumption of energy in the grid in 1972-73 came to 6964 M. units against an unrestricted requirement of 7,500 M. units.

With a satisfactory South-west Monsoon this year, the hydel reservoirs received good inflows. We were able to reduce the cut from 75 per cent to 50 per cent in respect of small-scale industries in July 1973 besides giving substantial reliefs to selected major and important industries like cement, textiles, defence-oriented industries, oil mills, rice and flour mills, etc. In view of the improved generation at Board's thermal stations and at Neyveli and comfortable storage position in reservoirs, the power cut imposed on all consumers was completely lifted with effect from 17th July, 1973.

Though the impact of South-West Monsoon had been favourable when the power position was reviewed for the period June 1973 to May 1974, it indicated an energy shortage. However, no restrictions were contemplated for the period up to September 1973 as irrigation-tied hydro stations were operating

full swing, and in fact we were able to bank some energy during night with Karnataka. It was observed that the inflows in September were less than the average of last 5 years and the need for conserving available water till the next South-West Monsoon was also kept in view, especially with reference to the reduced relief indicated by Neyveli Lignite Corporation and the outage at Ennore where the IV unit of 110 M.W. was incapacitated due to fire accident on 31st July 1973. Also, the Government deemed it necessary in the overall interest of the economy of the State to permit supply to prospective consumers waiting till last October 1972.

New connections are given

A marginal power cut of 15 per cent was, therefore, imposed with effect from 1st October 1973, mainly to provide for continued industrial and agricultural growth. The hydel storage position, when the power cut was imposed, was nearly the same as in 1971. But the anticipated requirements for power this year are nearly 21 per cent more than in 1971. For the first time, it can be said that new connections are being given even during the period of power cut. The need for 15 per cent power cut is amply justified as a deficit of 536 m.u. has been indicated for the period October 1973 to May 1974 even after assuming a normal North East Monsoon with resultant hydro storage as good as in 1971, early re-commissioning of Ennore IV unit and a total 300 m.u. relief from Kerala, besides the thermal plants at Ennore and Basin Bridge operating at satisfactory load factors. The Government have also decided in consultation with the Tamil Nadu Electricity Board to review the power position by middle of December 1973 and if conditions are found more favourable than anticipated, the restrictions may be relaxed.

Special efforts are also being taken to get power from Kerala, Andhra Pradesh and other States. Karnataka has expressed its inability to afford and relief as it continues to be in power cut with 20 per cent. We are also trying to get maximum relief from Andhra Pradesh when their Kothagudem III stage 110 M.W. unit gets stabilised. We have reached an under-

MARCH OF RURAL ELECTRIFICATION

Electricity was extended to 7,782 villages and hamlets during 1972-73 bringing the total number of towns, villages and hamlets electrified to 60,325 as on 31st March, 1973. Tamil Nadu tops the list in India in the matter of extending supply to agricultural pumpsets. During 1972-73 as many as 55,072 agricultural pumpsets were energised, making the total number of pumpsets energised as on 31st March, 1973 to 6,49,241. As on 1st October, 1973, the number is 6,64,906 pumpsets. Top priority has been given for electrification of Harijan colonies adjoining the villages. During 1972-73 alone 4,582 Harijan colonies have been electrified.

In spite of the unremunerative nature, the rural electrification schemes continue to be executed in an attempt to extend the basic amenities of street lights and domestic services to the villages and hamlets. It is hoped that by the end of the year 1974, the electrification of all villages would be complete.

The special programme for electrification of villages was launched in October, 1969 at the instance of the Chief Minister. This programme has paved the way for the starting of a number of new rural industries and connecting up of additional pumpsets which would add to the prosperity of the State.

We have achieved notable progress in this field. As against 24,867 towns, villages and hamlets provided with street lights when the special rural electrification programme was launched, we have as on 1st October, 1973, taken electricity to 35,999 more villages and hamlets and connected with street lights pushing the total number to 60,866. Measures are being taken to have the remaining villages and hamlets provided with street lights very early.

The total number of Harijan colonies electrified as on 1st October, 1973 is 23,695. The remaining 806 Harijan colonies will be electrified in the near future.

standing with Kerala in November 1973 to ensure 300 m.u. relief for the period up to May 1974. Energy assistance has also been promised to Tamil Nadu on barter deals, by Andhra Pradesh and Kerala that is, the former giving 45,000 units for tyre and the latter, indicating to give in full power needed for (additional) production of cement, yarn, tires and chassis required for Kerala this season. Details are being worked out by the two States' Electricity

Board's officials.

The unfortunate fire accident at Ennore on 31st July 1973 damaged the power transformers of the IV unit which could not be used for generation. The third unit also could not be recommissioned immediately as the bushings of the transformers had to be tested. Government appointed a Committee headed by Thiru N. Mahalingam and consisting of two experts to

investigate the accident and suggest remedial measures. The report of the Committee has been received and the Electricity Board has been requested to implement the suggestions of the committee besides fixing responsibility on the persons responsible for the defects pointed out. The damaged transformer units have been arranged for repairs with Messrs Heavy Electricals (I) Limited, Bhopal and the power transformers can reasonably be expected to be ready during the first quarter of 1974. The Hon'ble Members may perhaps remember that I had mentioned in my last budget speech about the difficulties caused by the formation of a sand bar at the mouth of the leading channel feeding coolant water to the Ennore Thermal Station. Arrangements have already been made to carry out certain engineering modifications to the two sand pumps installed to remove sand accretion due to littoral drift. I would also like to mention that the Chairman and the concerned Chief Engineer of the Electricity Board were sent abroad to Europe and U.K. in August '73 for exploring possibilities of procuring a suitable

dredger for solving the sand bar problem. In pursuance of these efforts, negotiations are being finalised to procure a dredger from Holland at a cost of about Rs. 70 lakhs. This is expected to eliminate successfully the sand bar problem at Ennore.

What Have We Done About The Generation Gap?

At an average of 12.5 per cent increase every year in peak demand our requirement will be of the order of 3,620 M.W. by the end of the Fifth Plan period (1978-79). The gap between generation and requirement by the end of the Fifth Plan would be 2,189 M.W. As against this, the projects which have been included and suggested by the Ministry of Irrigation and Power are the following. (Table at the bottom)

(i) Ennore V Unit	..	..	110 M.W.
(ii) Kundah IV Stage	..	..	110 M.W.
(iii) Kalpakkam Nuclear Plant	..	..	300 M.W. (Out of 400 M.W.)
(iv) Suruliyar	..	..	35 M.W.
(v) Kadambarai Pumped Storage Plant	..	..	100 M.W.
(vi) Tuticorin Thermal Scheme	..	..	400 M.W.
(vii) Additional benefit at Neyveli consequent to conversion of 2 units to oil firing	..	..	100 M.W.
Total	..	..	1,155 M.W.

INSTITUTIONAL FINANCE FOR POWER SCHEMES

The Board's capital receipts in 1973-74 are estimated at Rs. 47.86 crores. This includes Rs. 22.03 crores of loan from sources like open Market, L.I.C. of India, Banks and other financial institutions like R.E.C. The internal sources of the Board such as depreciation and other reserves are estimated to be the order of Rs. 23.26 crores. The increase in deposits is expected to provide Rs. 2.47 crores. The Government have so far sanctioned a loan of Rs. 565 crores.

The Rural Electrification Corporation, Ltd, New Delhi, approved in 1972-73 two schemes for electrification of Harijan colonies costing Rs. 10 lakhs and 9 other schemes for extension of supply to pumpsets and domestic services costing Rs. 509.874 lakhs. They have sanctioned from the inception of the programme up to the period ended 30th June, 1973 schemes costing in all to the tune of Rs. 11.21 crores against which they have disbursed Rs. 6.23 crores. The Rural Electrification Corporation have come forward to give loans for two new types of schemes, namely sub-station improvement scheme and special transmission scheme. Under the first category they have sanctioned two schemes costing Rs. 52 lakhs and disbursed Rs. 35 lakhs. Under the second category schemes have been evolved by the Tamil Nadu Electricity Board and they are under the consideration of the Rural Electrification Corporation.

Assuming an average annual growth rate of 12.5 per cent for purposes of planning, the energy requirements have been assessed at 15,490 m.u. by 1978-79 and 27,920 m.u. by 1983-84. The net deficits taking into account schemes under construction and sanctioned would be about 2,215 m.u. by 1978-79 and 14,645 m.u. by 1983-84.

Power Deficit Inflicts Heavy Damage on Economy

It would be, therefore, clear that our power deficits both in respect of peak demand and energy requirements are quite sizeable and therefore very serious. The unprecedented power cut last year should be a reminder to us as to the extent of damage a power shortage can inflict on the overall economy of the State. During the last 7th conference of State Ministers of Irrigation and Power held at Kodaikanal in July 1973 and on subsequent occasions during discussions with the then Union Minister of Irrigation and Power, Dr. K.L. Rao and the Planning Commission at the Centre it was impressed by the State Government and the Electricity Board Chairman that all pending Hydro Schemes should be cleared forthwith so that expeditious execution can be initiated without delay. Three projects, namely Suruliyar Hydro Electric Scheme of 35 M.W., Kadamparai Pumped Storage Scheme of 400 M.W. and Tuticorin Thermal Scheme with 400 M.W. have been sanctioned by the Government of India.

Capital programme for the year

I would like to narrate briefly the capital programme for the year 1973-74. The work on the third 110 M.W. set at Ennore is progressing and this set is expected to be commissioned in early 1975-76.

I am glad to state that an agreement with the Canadian Government for the supply of generating machinery for the Kundah Fourth Stage has been signed in July 1973.

The work on Naduvattam Diversion Scheme is expected to be completed by May 1974.

The preliminary works for the 400 M.W. Kadamparai Pumped Storage are already in progress. The first set under this project is expected to be commissioned by 1978-79.

The preliminary works for the Suruliyar 35 M.W. have been taken up.

The preliminary works on the Servala and Nellithorai Hydro Electric Schemes have been taken up in anticipation of clearance of the schemes by the Government of India.

The Schemes pending with the Centre are given below :—

Serial number and name of scheme	Installed capacity M.W.	Estimated cost of scheme (Rs in lakhs)	Energy benefits m.u.
1. Cholatipuzha*	60	739	112
2. Coonoor-Kallar	50	1,445	144
3. Lower Moyar	30	1,336	102
4. Nellithorai	50	758	134
5. Paralayar	35	510	150
6. Servalar	20	681	75
7. Shanmuganadli	30	902	131
8. Upper Amara'athi	20	355	69
9. Upper Thambaraparani (other 5 units)	165	4,392	557
10. Mettur Thermal Scheme	330	6,553	1,160

*Inter-State Scheme.

COST OF POWER PURCHASES

The cost of power purchased from Neyveli, Kerala and Karnataka has been provided with reference to the rates that prevailed at the beginning of the year 1972-73 (viz., 8.1 paise/unit for Neyveli and in respect of Kerala at 6.24 paise/unit for the first 150 m.u. and at 6 paise for the supply excess over 150 m.u.). The rates for power from Kerala have been enhanced to 7.8 paise/unit for the first 100 m.u. and 8 paise for excess over 100 m.u. up to 300 m.u. during this year. This will entail additional expenditure to the Electricity Board.

The Schemes already sanctioned and are in various stages of progress, and expected to be commissioned in the years to come are as follows:

- 1976—Ennore V Unit (2nd stage) 110 M.W.
- 1977—Kundah IV stage—110 M.W.
- „ Kalpakkam Atomic Station I Unit 235 M.W.
- 1978—Suruliyar H.E. Scheme 35 M.W.
- „ Kalpakkam Atomic Station 2nd stage 235 M.W.
- 1979—Kadamparai Pumped storage I unit 100 M.W. (Total 400 M.W.).
- 1979—Servalar H.E. Scheme 20 MW
- 1979—Nellithorai H.E. Scheme 50 M.W.
- 1979—Tuticorin Thermal Scheme 400 M.W.

GENERATION CORPORATION

With a view to concentrate on major power schemes and to get as much institutional finance as possible so as to bring the benefits, earlier, the formation of a Power Generation Corporation has been decided

In line with the policy of the State to take over the private electricity supply undertakings in the public interest, this Government have enacted a new legislation called "The Tamil Nadu Private Electricity Supply Undertakings (Acquisition) Act, 1973." There are seven Private Electricity Supply Undertakings as indicated below which remain to be taken over by the Government :—

1. Kumbakonam Electrical undertaking.
2. Nagapatam Electrical undertaking.
3. Shencottah Electrical undertaking.
4. Vellore Electrical undertaking.
5. Salem-Erode Electrical undertaking.
6. Tinnevely-Tuticorin Electrical undertaking.
7. Trichinopoly—Srirangam Electrical undertaking.

Under the provisions of the new Act, the Government have directed that the above undertakings shall vest in the Government on 1st December, 1973.

upon by the State Government. A special officer has been appointed and entrusted with the task of formation of the corporation.

In view of our commitment to the big industrial complex at Mettur and the Salem Plant and in the light of Mettur Thermal Scheme not being agreed to by the Centre yet, the 2nd mine cut at Neyveli will have to be got sanctioned under Central Sector at once for initiating follow-up action on 2nd thermal station of 1,000 M.W. capacity. As per the feasibility report prepared by the N.L.C., the phasing of commissioning the 5 Nos. 200 M.W. units (plus 1X200 M.W. unit later) is envisaged as follows :—

- 1st Unit in service—By October 1978.
- 2nd Unit in service—July 1979.
- 3rd Unit in service—February 1980.
- 4th Unit in service—July 1980.
- 5th Unit in service—February 1981.

If the project is cleared straightaway now, we may expect one or two units to come in service during V Plan, i.e., 200 to 400 M.W. installed capacity with an additional net relief of 180 to 360 m.u. to Tamil Nadu. It would not be out of place to recall the draft IV Plan proposals of the State Government in 1968 when the Government suggested initiation of action on the 2nd unit at Kalpakkam Atomic Power Station, 2nd Atomic power station preferably around Tuticorin region and 2nd mine cut and a 2nd thermal station at Neyveli. The Site Selection Committee of the Department of Atomic Energy, Bombay is currently examining data furnished by the Electricity Board and the State officials to identify a promising site at Kudankulam in Nanguneri taluk of Tirunelveli District. The Government of India have since replied that considering the resources position as a whole and the resources available for the establishment of Atomic Power Station in the Southern States, it may not be possible to consider any new nuclear power schemes during the Fifth Plan period. This Government would however urge the Government of India again to take a favourable decision for locating the 2nd Atomic Station in the southern districts of the State.

This is quite essential in addition to an early decision and implementation of the 2nd mine cut at Neyveli referred to earlier. The State is not happily placed as regards potential

OUR HUGE TRANSMISSION NETWORK

The State Electricity Board owns a huge network of transmission and distribution system comprising 63,328 Kms. of EHT and HT lines and 1,78,605 Kms. of L.T. lines as on 31st March, 1973. Out of this, 3,442 Kms. of EHT and H.T. lines and 17,451 Kms. of L.T. lines were added in 1972-73. There are 262 numbers of EHT and H.T. substations in the grid at the end of 1972-73.

The Transmission and Distribution Projects at a cost of Rs. 11.00 crores for the year 1973-74 will result in construction of more 230 KV, 110 KV and 11 KV transmission lines, substations and distribution lines. Installation of higher capacity transformers at substations and provision of additional carrier and VHF equipments for communication are also envisaged under this head. A length of 2,600 Kms of EHT/HT lines is proposed to be added during 1973-74.

While the extent of line losses compare favourably with many other States in the country with reference to its own extensive lines and huge net work of pumpsets, the Board has decided to go in for corrective measures to reduce the losses nearer the optimum level.

for augmentation by generating capacity. The only fossil fuel available is lignite at Neyveli and this has to be utilised fully and completely to meet the energy needs of the State and for future power requirements. The State has to depend only on nuclear and new thermal schemes preferably, super thermal stations. I would also like to mention that the Tamil Nadu Electricity Board has proposals under consideration for installation of gas turbines to the extent of 300 M.W. by way of short-term measure which the Centre needs to examine again and approve necessary imports as a special case.

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PROGRESSIVE LABOUR POLICY OF TAMIL NADU ELECTRICITY BOARD

The various concessions extended by the T.N.E.B. to its employees during last year (1972-73) are listed below :

The absorption of Temporary Casual Labour workmen with 4 years of service under the Board as on 31st December, 1972 into Regular Establishment was ordered by the Board in January 1973 and about 9,000 T.C.L. workmen got the benefit of absorption in Regular Establishment from 1st January, 1973. The number of Casual Labourers under the Board as on 31st March, 1973 is about 29,923 and the Board will take up the question of their absorption in a phased programme depending on need.

T.C.L. workmen were given an increase in wages of 25 paise in 1972 after one year of service from the date of last increase in 1971 and they are given a further increase of 25 paise in wages after a further one year service from the date of last increase in 1972.

The posts of Lascars, Grade II and Mazdoors, who were on pay scale of Rs. 65-3-95-4-115-5-125 in all places under the Board were upgraded as Helpers and Cleaners, Grade II as Grade I Cleaners in the scale of pay of Rs. 84-4-125-5-150 from 1st January, 1973.

The employees of the Board were requesting grant of House Rent Allowance to them also, based on the Government rates. The Board considered the above request and granted enhanced House Rent Allowance with effect from 1st January, 1973 and further enhanced it from 1st April, 1973. The employees residing at a distance not exceeding 32 Kms. around the Madras City limits and those within 16 Kms. around Madurai and Coimbatore City limits were granted House Rent Allowance at the same rates applicable to State Government Employees at Madras, Madurai and Coimbatore cities respectively.

Dearness Allowance was increased by Rs. 4.50 per mensem from 1st April, 1972 to

all employees drawing pay up to Rs. 750 per mensem and it has been further increased by Rs. 9 from 1st April, 1973.

BONUS was given to the employees of the Board in November, 1972 for the year 1971-72 at 8.33 per cent of their pay and Dearness Allowances subject to a maximum of Rs. 750.

The Junior Engineers under the Board were elevated to Class II status (Gazetted) in November, 1972 and on a par with them. Supervisors Grade I (Electrical, Mechanical and Civil) were also conferred Class II status in March, 1973.

From 14th August, 1972 a marriage advance of Rs. 2,000 to Board's employees is being sanctioned.

The concession of interest-free advance of Rs. 100 was extended to the employees whose basic pay does not exceed Rs. 500 per mensem and who have rendered two years of service, to meet expense like payment of special fees, purchase of text books, etc., for their children studying in Higher Elementary, High Schools and Colleges.

The cycle allowance given to the linemen and wiremen in-charge of distribution was enhanced from Rs. 4 per mensem to Rs. 6 per mensem. This concession has since been extended to Helpers employed in distribution systems.

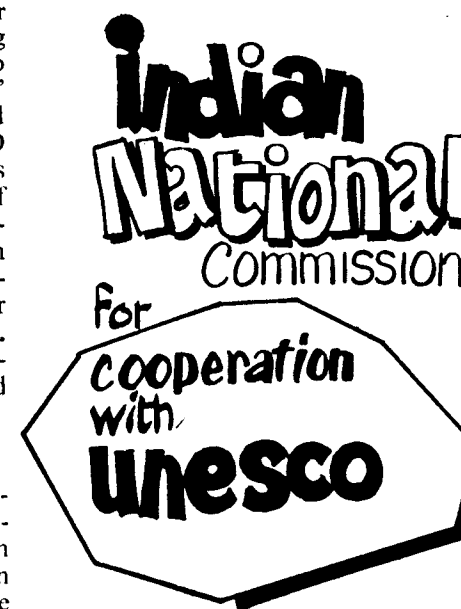
The workload for the stores staff in Sub-Stores was decided and an agreement was reached with the Union regarding sanction of additional staff which will create chances for more promotions than now.

The sports activities of the employees are encouraged by the Board by liberalised recurring and non-recurring grants to the recreation clubs of the employees.

The Board is continuing to take interest in the promotion of education of workers under the Workers' Education Scheme and has won the first prize and shield for the largest number of worker-teacher trainees and education of workmen in unit level classes.

All over India, the 24th October was celebrated as UN Day, to bring into a sharper focus the need to construct the "defence of peace" in the minds of men, as stressed by the preamble to the UNESCO constitution. This is because, as it says, wars begin in the minds of men. The Indian National Commission for Cooperation with UNESCO joined its parent organisation in 1949 in quest for strengthening the defence of peace. It is one of the 125 national commissions in the world so engaged today.

Headed by the Minister of Education, the Indian National Commission set its sights clearly from the beginning. It is primarily an advisory and consultative body. One of its main objectives is to promote understanding of the aims and policies of UNESCO. It is a link between UNESCO and the institutions working in this country in the fields of education, science, culture and mass communication. Non-Government institutions can participate in the activities of the Commission. 41 of them are currently functioning as its institutional members. In Madras, an impressive celebration was gone through at Museum Theatre, Egmore on 24th October, 1973 as U.N. DAY.



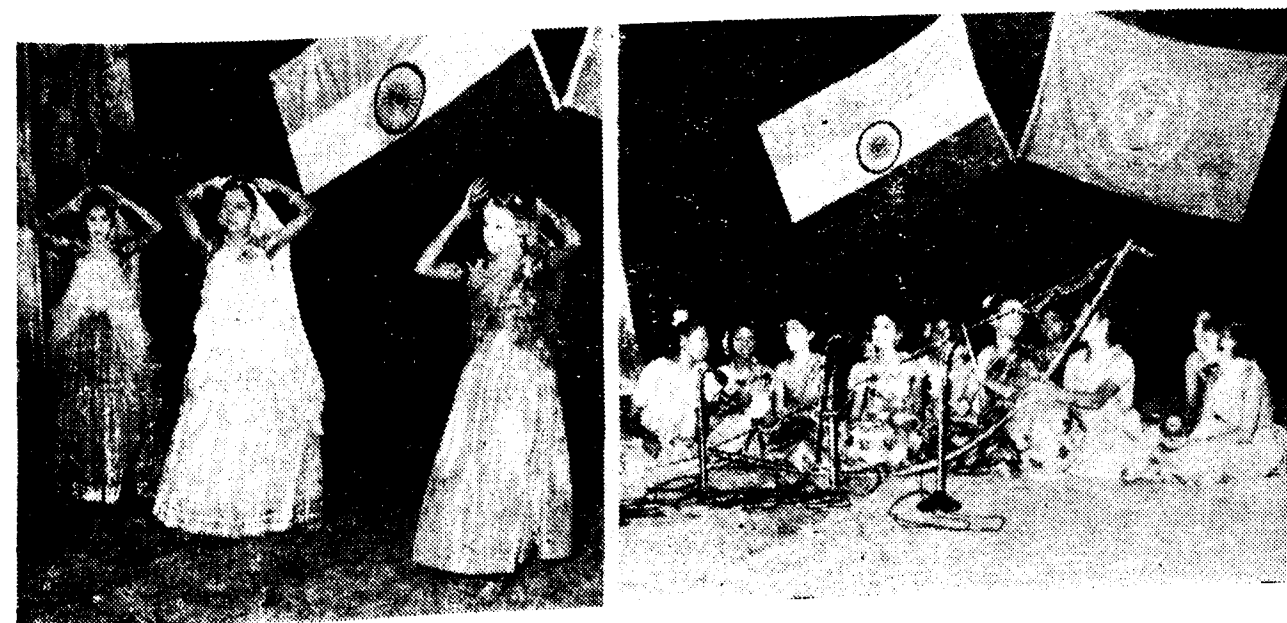
One of the aims of the Commission is being met through the creation of UNESCO Clubs with the help of voluntary organisations, educational institutions and universities. 109 of them are now working in the various parts of the country. Apart from disseminating information about UNESCO, the Clubs have been asked to take up action programmes of use to

their local communities with local financial support. It is essential that to be useful they must be community-based.

During the last five years, the Commission has made successful efforts to systematise its liaison, clearing houses and information services in respect of UNESCO. About 3,600 institutions throughout India are on the Commission's mailing list. Several international exhibitions have so far been arranged in different parts of the country. One of them brought to view the drawings of Leonardo da Vinci. All the while, the Commission has been carrying on its many-sided operations to build the mental bulwarks of peace. A major programme developed for this purpose is the Associated Schools Project of Education for "International Understanding." About 1,000 schools and "Teachers Training Institutions" in India are functioning under this programme to enable the younger generation develop appreciation for the culture of other countries. They are also taught to respect Human Rights and Fundamental Freedoms.

This programme has been found to have immense possibilities for creating a new ideology and world view among the youth. It has

The U. N. Day in Madras



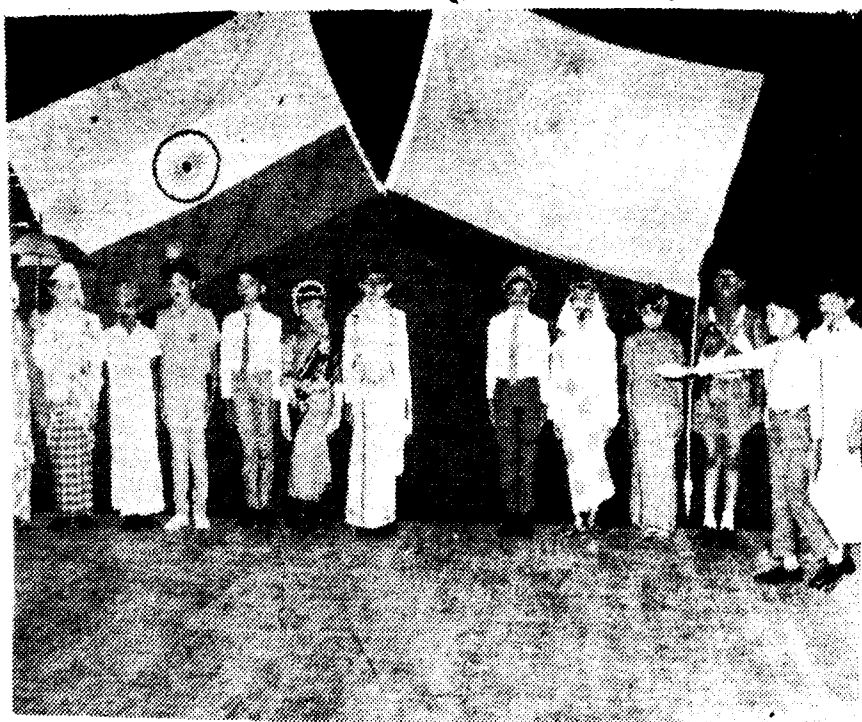
already brought about closer relations between the Indian National Commission and its counterpart in other countries through the exchange of material and participation of school children in art exhibitions and contests.

Promotion of International understanding

To promote international understanding and intellectual co-operation, UNESCO has already completed a significant project on mutual appreciation of Eastern and Western cultural values.

The project adopted at UNESCO's New Delhi Conference in 1956 led to a variety of activities involving many sections of intelligentsia in this country. A seminar on the role of universities and East-West Relations followed in 1963. A Round-Table Conference on Jawaharlal Nehru's Role in the modern world, which was held in Delhi three years later, made a number of proposals to promote cultural understanding between different countries. From this emerged the project "Design for Living," which was accepted by the 14th General Conference of UNESCO in October-November 1966.

After completing its major project on mutual appreciation of Eastern and Western Cultural values, UNESCO initiated programmes for study in depth of different cultures and their impact on the world civilisation. The Commission has been collaborating with UNESCO in the study of Central Asian Civilisation. Several studies have been taken up in the fields of Archaeology and History of Central Asia during the Kushan period, history of Literacy currents in Central Asia, development of sciences, and the History of Ideas and Philosophy. A preliminary study report on the History of Ideas and Philosophy in Central Asia has been forwarded to UNESCO. The Indian Council for Cultural Relations in collaboration with the National Commission held an International Conference on Central Asia in New Delhi in February 1969 to promote closer cultural relations between the Central Asian countries.



Research in social and human sciences is a necessary corollary to the objectives sought by UNESCO. With the cooperation of the Indian National Commission, it has completed the first part of study dealing with certain disciplines like psychology, linguistics, social and cultural anthropology, sociology, demography, political science and economics.

Research in Social and Human Sciences

One significant project, which is now under execution with assistance from the Commission, is the 'Auroville' project of the Sri Aurobindo Society, Pondicherry. The aim of Auroville is to bring together in close juxtaposition the values and ideals of different civilisations and cultures. After its foundation stone was laid on February 28, 1967, Auroville has made considerable progress. While the entire responsibility for "Auroville" rests with its sponsors, the Sri Aurobindo Society, the Commission has given grants to the extent of Rs. 9.5 lakhs for one educational building project of Auroville.

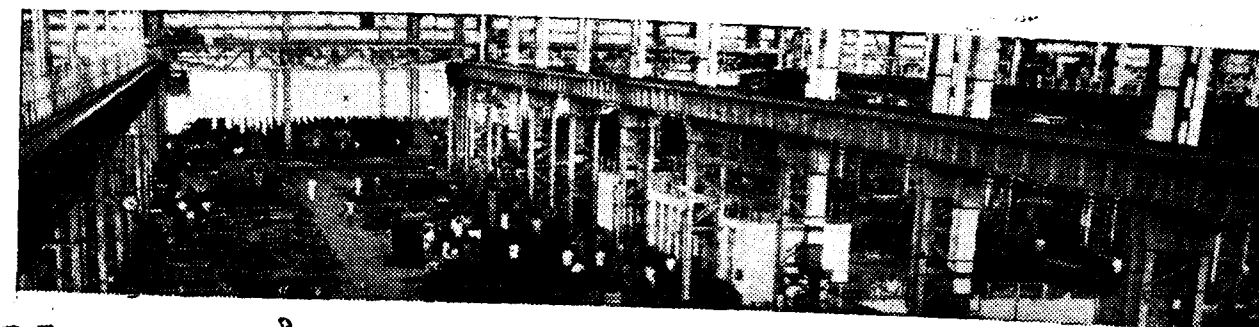
Study on Group Tension

An interesting study carried out under the auspices of the Commission has been on Group Tensions.

As the result of the studies in India and elsewhere, UNESCO came to the conclusion that the concept of 'tension' is too rigid and narrow and that the real problem is not so much to remove tensions as to direct them into useful channels and turn them to constructive social ends.

Gandhiji's Humanism and Philosophy has been a "natural" subject for UNESCO'S studies. His ideas and techniques for the solution of human problems, both at the national and international levels formed the theme of a seminar organised by the Indian National Commission in 1953. Gandhiji's Birth Centenary Celebrations in 1968-69 throughout the world were another landmark in the activities of UNESCO and the Indian National Commission. In fact, the World Body at its 1968 Conference adopted with acclaim a Resolution for worldwide observance introduced by India.

As part of this U. N. Day Celebrations on 22-10-73 School Children donned garb of all nations to demonstrate world integrity, as seen in the picture above.



NOT BY PROFIT ALONE SHOULD OUR PUBLIC SECTOR UNITS BE JUDGED

Today, the public sector in India is in the spotlight. It has an investment of over Rs. 5,000 crores. It comprises 102 units with a wide variety of products, ranging from aircraft, aluminium, atomic energy, automobiles, coal, cement, electronics, hotels, machine tools, oil, power, steel, television and a host of other items. It employs over 7,00,000 persons. It has a 35% share in the total fixed assets of the entire corporate sector, a five-fold rise from 7.6% a decade ago. Amongst the top ten companies in India, 9 belong to the public sector and amongst the top 25, as many as 16 belong to the public sector. From the time Tata Iron and Steel Company dominated the industrial scene as a giant in the private sector, we have today a glaring transformation. Tatas are pushed to the tenth place by nine other public sector units.

Thus, from the point of view of investment, range of products, number of personnel employed, turnover and the part played in the national economy, public sector has undoubtedly made big strides within a short time.

Then, why all this criticism of the public sector, partly justified and partly unjustified? Public sector is wholly owned by the State and it has a corporate legal identity. There is no reason why public ownership in principle cannot achieve an efficiency and growth

rate better than private ownership. If there is a conflict between the public sector and private sector, by and large, it can only be attributed to ill-defined objectives, rather than the efficacy of each sector.

How to evaluate?

Then, how do we evaluate the efficiency of the public sector?

Profitability is universally accepted as an important yardstick at our disposal in evaluating corporate performance, even though we have to admit that it is not the only criterion. However, let us first examine the performance of the public sector on this front.

M. K. RAJU,
Chairman,
Hindustan Photo Films.

We are generally inclined to make a collective evaluation of the performance of the public sector. This, however, is an unrealistic assessment, for, the encouraging performance of many may be marred by the discouraging performance of a few. Also units, which turned the corner once, may again go into loss without maintaining sustained profits. It was reported that the public sector projects made a collective profit of Rs. 9 crores in the

year ending 31st March 1973, against a loss of Rs. 14.5 crores in 1972. During the three years 1967 to 1969, it lost an average per year of Rs. 30 crores, whereas during the three preceding years from 1964 to 1967, it made an average profit per year of Rs. 15 crores. In the final evaluation, it is probably true that the public sector, rightly or wrongly, built a poor image for itself, as a perennially non-profitable sector. This is somewhat uncharitable, when we take into consideration what they manufacture, what their problems are and why they incur losses.

It entered all fields when Private Sector was scared

To start with, the public sector had to enter fields in which the capital and resources required are too large to muster and the gestation period too long and the return on investment too unattractive for the private sector. It had to enter fields in which the private sector is not growing at the required pace. It had to enter trading to correct distortions in the economy and also keep down the prices. It had to enter fields on politico-economic considerations of restraining monopolistic tendencies. It had to enter defence production where cost had never been a consideration. The country has no alternative, but make such investments for national security and for national self-reliance.

If in certain industries, due to the nature of the product, they are bound to lose during the long gestation period, regardless of ownership and regardless of who manages it, how can we level criticism at such public sector units that they are unprofitable. This is an inevitable price any nation has to pay for industrial development.

Even looking at the performance *per se*, more than 60 public sector units out of the 102 earned a profit exceeding Rs. 1 crore in the year ending March 31, 1973, the net profits being Rs. 90 crores. A number of enterprises, including Hindustan Steel, reduced its losses. On the other hand, the bulk of losses are accounted by 16 enterprises, each losing over Rs. 50 lakhs. Their total losses in 1972-73 contribute to about Rs. 82 crores. **Out of these, three units—Hindustan Steel, Heavy Engineering Corporation and Neyveli Lignite Corporation—alone accounted for as much as Rs. 55 crores.** In other words, it is rather unfair to brand the public sector as a non-profitable entity, purely because of the negative performance of a few such units.

There are a few other aspects we have to consider, when we evaluate the profitability of the public sector. First, the social costs, this sector bears, are 16% of the operating costs in 1970-71 amounting to Rs. 30 crores. This may be quite relevant, when we compare this to the private sector in India, which has to go a long way in this direction. This, however, cannot be a valid argument, as it is becoming increasingly recognised throughout the progressive world that the corporate sector has to assume responsibility to provide social welfare for its employees, such as housing, medical services, recreation, opportunities for cultural development and job training and yet run the industry on an efficient and profitable basis.

Another reference is made to over-employment in the public sector. Some say, this is socially necessary in order to provide relief to the unemployment situation in the country. This is a debatable point, as you may lose much more by undermining the industrial morale due to surplus labour. However,

the fact that salaries and wages formed only 9.5% of the total cost structure in the public sector in 1970-71 does not make this anything abnormal.

Questions in need of Answers

In the private sector, by and large, profit is considered to be the primary objective with as much return as possible on the investments, but this concept is rapidly changing due to the increasing recognition of the social responsibility of business. In the public sector, this role is reversed, as we have so far been highlighting only the social benefits, whereas we now recognise the need for economic benefits and a fair return on investment. It is, therefore, essential that we strike a balance as to the extent to which the public sector can achieve the corporate objectives of return on investment and profitability under social constraints. Can the public sector control its social overheads or should it seek Government subsidy on this count? How can it reduce operating costs and generate internal funds for modernization and expansion? How can it operate and grow without being a social burden? Can the public sector adopt a pricing policy, as in the private sector? Why not the public sector issue shares to the public, as a basis of evaluation of its performance? These are all the questions for which we need answers.

When once we recognise profitability as a criterion for judging its performance, we have to set clear guidelines for each unit and each industry. We have to gear the structure and have a managerial group competent to achieve the objective. Profitability cannot be viewed in isolation, without creating an environment conducive to such profits.

All management positions must be manned not by civil servants, but by those recruited from amongst the best managerial talent available in the country. They have to be remunerated on terms which are reasonable and sufficient to motivate them to do an efficient and honest job. What you lose this way is so infinitesimal, compared to what you gain by plugging the losses of

several tens of crores and making profits by efficient management. This is the practice adopted in France, Italy and Britain, when the public sector started playing a significant role in their economies. Even the socialistic countries found their own answer, as to how to motivate their managers entrusted with the challenging task of running the industrial sector. The superstructure of Indian attitudes, codes and culture and heterogeneity of the Indian people are so unique, that it must find its own path in all its detailed ramifications.

Seniority cannot be a criterion for progress at executive levels. Rewards and punishment in the public sector have to be related purely to competence criteria. The present slow and agonising process of clearing the dead wood must go.

The present stronghold of the bureaucratic machinery can be used as a major resource, with the same system consciousness, by designing systems which are not policing and audit-oriented, but decision and action oriented. But, one thing is clear that profitability is an achievable objective in the public sector, regardless of the many constraints, if we leave aside units, which are compelled to lose due to the long gestation period and huge investments and special circumstances.

Profitability is alone not a criterion for efficiency

Now, I come to a more fundamental question. Is profitability the only criterion of judging the efficiency of the public sector? If you ask a question what the basic objective of the private enterprise is, an obvious reply will be to make a profit. Profit is essential for healthy business, but profit itself can be cut off at source, if the management does not recognise other objectives and goals and has not the foresight to know how the profit is made and even more important, sustained. The steady profits over the years give a far better gross return than peak profits in one year and depressions in the other. In the present non-competitive economy, it is indeed difficult to resist the temptation of adhering to any

objective other than make the largest profit in the shortest time. While private ownership should not be allowed to exploit the consumer, the reverse side of the coin—the danger of the public sector exploiting the consumer should not also be tacitly ignored. For example, the objective of nationalisation is to be achieved.

In a trading economy, such a thing as 'profit only' can exist. In an industrial economy, you have investment in buildings, machinery, personnel, research, advertising and promotion. You have tangible and intangible resources.

The industrial resources are primarily represented by management, research, goodwill and reputation. The question is, can all these be bought and sold? All such resources have a value only as long as they are productive. It takes time enough to make them productive, but longer still to recover the original cost. It is, therefore, not right to say that the sole objective of an enterprise in an industrial economy is all to make profit. It is rather to provide for the present and future protection of the assets of the enterprise and improve them further and we need to set multiple and integrated objectives in every area of responsibility and every resource. Viewing the public sector in this context, we need marketing objectives to keep up and increase the customer goodwill. We need technological and innovation objectives, to keep abreast of new techniques and new skills with such yardsticks as utilisation of the capacity, technological self-reliance and product leadership. We need financial objectives to ensure enough liquid assets to cover changing business cycles and markets. We need productivity objectives to increase standard of living and grow better. We need personal objectives for management development and better human relations. Above all, we need objectives for the enterprise to integrate with the overall goals of the community and contribute to the common good, improve the standard of living and the level and stability of employment.

Thus, it is quite clear, regardless of the type of industry, whether in the private sector or the public sector, that we have to also pay attention to objectives, other than profitability.

Panel for clear-cut Objectives and Obligations

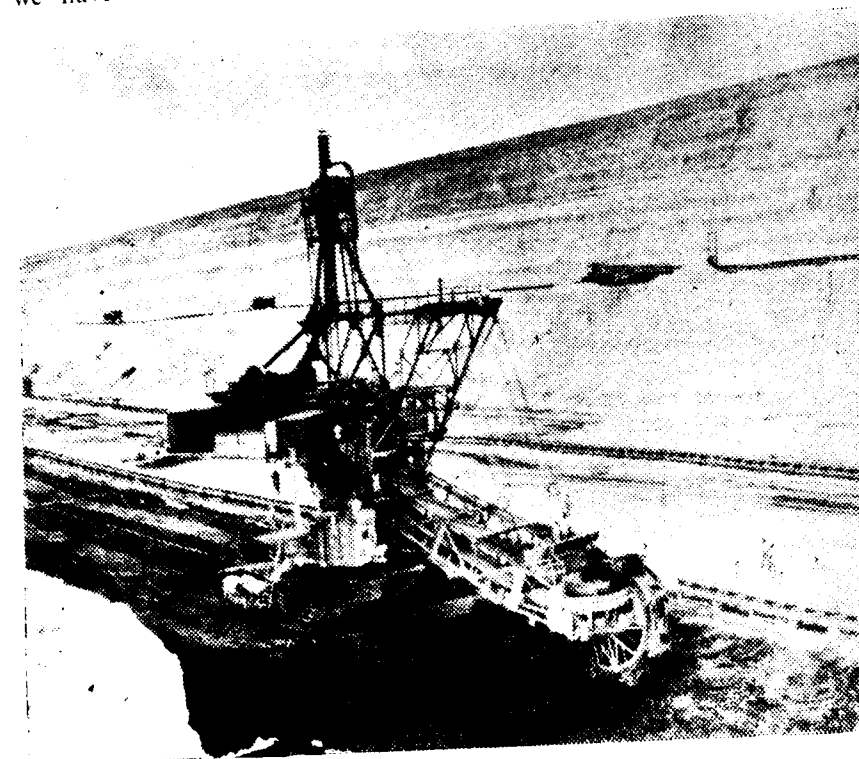
Excellence in management consists of setting great goals and achieving them. The two parts of the process are essential in achieving excellence. Without goals and objectives chosen in advance, the final results cannot be measured. Great goals without matching achievement will be the sign of idle dreams. In this context, it is heartening to note that the Government of India has recently appointed a high level panel to set up the objectives and obligations of the public sector, which would provide a proper yardstick for their appraisal.

To sum up, by all counts, with the rationalisation of the structure in the public sector, a clear definition of objectives and policies, improvement of labour-management relations, technological leadership and utilisation of all the advanced techniques of management, there is no reason why the public sector with all its resources at its disposal cannot make sustained progress in the years ahead.

Leadership in many fronts to be ensured.

Everyone of us is involved in the public sector, as citizens of India. It is the tax payers' money we have invested in these enter-

prises. In the private sector, perhaps it is the prerogative of a few to do what they want to do, with their money, manage or mismanage their affairs. In the public sector, it is the people's money with which we are dealing. As trustees, we have not only to make the right type of investment, but also manage our enterprise well, even better than any. Or, in other words, we have to make a success regardless of what it costs, regardless of what sacrifices the country may have to make or regardless of what hardship we may have to put up with. The public sector has to maintain its leadership in technology, in Research and Development, in sales and distribution, in industrial relations, in management development and in exports. It has to make its men and women to be energetic, technologically sound and imbibe them with a proper attitude towards their work, their enterprises and the society at large. It must strive to constantly improve its operational efficiency. It has to create a good public image, maintaining sustained growth. With the large finances made available by the Government, with the goodwill of the people of India and with good management, there is no reason why the public sector, in the next few years, cannot stand on its own merits and outpace the private sector.



The Hindustan Teleprinters turnover for 1972-73 at Rs. 422 lakhs reflects an increase of 28 per cent over the previous year. The net profits during the year are estimated at Rs. 68 lakhs as against Rs. 54 lakhs last year.

HINDUSTAN TELEPRINTERS MARCHES AHEAD

Viewed in the context of acute power shortage in the State of Tamil Nadu, the achievement assumes special significance. The power cut was 25 per cent in October last and 75 per cent from February, this year. It was possible for this public sector project, situated at Guindy near Madras, to achieve these results by applying strict economy in the use of power available from normal sources. It also had recourse to alternative sources of power.

The performance of Hindustan Teleprinters during 1972-73 registered an all-time high in all spheres. Production and despatches of machines and spares exceeded the targets set for the year. The number of main machines produced stood at 6,042 against the target of 6,000. Spares worth Rs. 61.68 lakhs were produced against the target of Rs. 60 lakhs. During the period under review a total of 6,154 machines and spares worth Rs. 66.92 lakhs were despatched over a target of 6,000 machines and Rs. 60 lakhs value of spares.

PRICE REDUCTION

Hindustan Teleprinters is perhaps one among the few public sector, or for that matter private sector, projects which has maintain-



ed a record of price reduction of its manufactures. The price of a unit teleprinter, which was about Rs. 7,000 in 1968, is Rs. 5,300 since September, 1970. This represents a reduction of 25 per cent in the price. The company has been able to bring about this against the rising price of raw materials, labour and other inputs. The current price per unit machine is less than half the price of an imported machine.

Another side of its achievement is the company's capacity to pay for its development programmes under the Fourth Plan from out of its own earnings and also provide for its growth under the Fifth Plan. The entire capital outlay of Rs. 120.33 lakhs for the Fourth Plan period is being met from its internal sources. Similarly, the outlay of Rs. 277 lakhs during the Fifth Plan is proposed to be met from internal sources.

EXPORT AND PRODUCTION DESIGN

The company's performance on the export front has also been commendable. Manufactures valued at Rs. 7.42 lakhs were exported during the year. The main destinations were Nepal, Mauritius, Lebanon,

Jordan, Singapore, Belgium and Ceylon.

Among the new products on the company's assembly lines are electric typewriters of its own design and 25 and 50 Amps—power cubicles for the telephone and telex exchanges. The first lot of these power cubicles were delivered in February-March last, and the typewriters will soon be in the market.

PROGRESS ON FINANCIAL FRONT

The paid-up share capital of the company is Rs. 82 lakhs and this is fully subscribed by the Government of India. The company has also taken deferred credit from its collaborators, Messrs. Olivetti, which is being progressively repaid. The balance of credit stood at Rs. 118 lakhs at the beginning of the year. This has been reduced to Rs. 88 lakhs at the end of the year. As against the Government's investment of Rs. 82 lakhs, the company's total contribution to the exchequer at the end of 1972-73 was Rs. 61 lakhs by way of dividend and Rs. 468 lakhs by way of Income-tax. The company has been regularly declaring dividends from the year 1965-66, which have progressively risen from 2 per cent. to 12½ per cent in the last two years.

The company is waiting for the consent of the Controller of Capital Issues to issue bonus shares in the ratio of one bonus share for every two existing shares for a total value of Rs. 41 lakhs.

MANAGEMENT

BY EXCEPTION.

By

C. S. PARTHASARATHY,

DIRECTOR,

PLANNING COMMISSION.

The management task is becoming more and more complex in the modern age of rapidly advancing technology and in an area of rapid and harassing economic change. Apart from technological complexity, complexity can stem from wide geographical dispersion of operations, and the number of people to handle may be much too large. The number of activities a manager is called upon to manage, has multiplied; however he would like to bring them under close and effective control. There is, of course, a limit to human ability to deal with complexity. Without an organised and systematic approach to the task of managing, the managers can easily become swamped with a mass of detail which might grow beyond his capacity to handle irrespective of the many working hours he might put in each day. It is in situations like this that Management by Exception could serve as an aid to management.

SIX KEY ELEMENTS IN MANAGEMENT BY EXCEPTION

Management by Exception in its simplest form is a system of identification and communication that signals a manager when and where his attention is primarily needed. The system remains silent when his attention is not required. The primary objective of such a system is to simplify the management process itself, that is, to enable a manager to identify and isolate problems that call for decision and action on his part, and to ignore or avoid dealing with those less critical problems which can better be handled by those at a lower level in the organisational hierarchy. Management by Exception has the following six key elements :

(i) **Measurement** : Assigns values often quantitative or numerical to past and current performance. Without measurement of some sort, it would be difficult to identify an exception.

(ii) **Projection** : Analyses those measurements that are meaningful to the organisation objectives and extends them into future outlook or expectations.

(iii) **Selection** : Pinpoints the criteria management would use to follow performance or progress towards pre-established objectives.

(iv) **Observation** : Is that phase of measurement that informs management of current status of performance.

(v) **Comparison** : Of actual performance or progress with planned or expected performance would identify the exceptions that require priority of attention and would report the variances or deviations to management.

(vi) **Decision-Making** : Prescribes the action that needs to be taken with a view to :

(a) Bringing performance or progress back to normal, or

(b) Adjusting anticipations to reflect changing conditions and circumstances, or

(c) Exploiting superior performance or opportunity.

In many respects, the concept of Management by Exception is inseparable from other management essentials. The philosophy of management by exception is also deeply rooted in the underlying principles of division of labour, delegation of authority and responsibility and span of control.

A major advantage of adopting the principle of management by exception lies in making management more efficient and effective, and in preventing management from over-managing. In an area of phenomenal growth in technology, Management by Exception would stimulate a manager to actively search for or identify exceptions that would permit him to apply his creative faculty. Management by Exception is, therefore, not only a technique of monitoring but also a method of seeking out opportunity. The practice of Management by Exception would :

(i) Save a manager's personal time. He would be able to apply himself to fewer problems which really count at a given point in time.

(ii) Concentrate executive effort. Instead of spreading managerial talent thinly across all sorts of problems managerial effort would be brought to bear selectively only where and when it is needed.

(iii) Reduce distractions. It would only flag attention to critical areas of work effort. It would remain silent on matters that are proceeding normally and are under control, or that are delegated automatically to those lower down in the organisational hierarchy.

(iv) Facilitate broader coverage. Concentration of executive management would enable the manager to increase the scope

f managerial activities and span of control. This would free the manager to tackle promising areas of operations that otherwise might remain unattended or undone.

(v) Lessen frequency of decision making. The system would be designed to make most of the minor decisions for a manager who would not have to check on every item of work under his jurisdiction or supervision every day to see if it is okay or not. The system would transmit to the manager only those few important or critical problems for him to rule on or act upon.

(vi) Make fuller use of knowledge of trends, historical and available progress data. Management by Exception, when applied systematically, would force a manager to review past history and related data of relevance, for these are the foundations upon which standards would be derived and from which exceptions could be noted.

(vii) More fully utilise highly paid managers on high return work. Because delegation is planned, it would more carefully relate and assign the more complex problems to the more talented and highly paid officials.

(viii) Identify crises and critical problems. It would assist a manager to ignore or avoid uninformed, impulsive pushing of the panic button. A crisis would almost always be recognised because seemingly unusual variations or deviations can be reliably and quickly compared with anticipated conditions.

(ix) Provide qualitative and quantitative yardsticks for judging the current situation or status. It would take away much of the subjective element out of the performance or progress appraisals by making the objectives, goals and standards of measurement tangible and specific.

(x) Enable inexperienced managers to handle new assignments with a minimum of related experience and training. A new manager would benefit from measurements and projections that have been estab-

lished as standard for his functions in the past. He can depend upon the system to alert him to problems rather than having to rely solely upon his own knowledge and experience.

(xi) Alert management to bottlenecks and difficulties as well as to opportunities. It would help to counter balance purely negative, control-minded (i.e., policing) management. Attention could also be focussed on "break-through" variations or deviations as well as on omissions or shortcomings.

(xii) Encourage more comprehensive knowledge of all phases of operation. Management by exception cannot be practised systematically without continually gathering and updating actual and relevant facts about the various operations.

(xiii) Stimulate communication between various segments of the organisation. With its principal focus on results, management by exception would seek to relate casual factors, regardless of their place or role in the organisation with the overall organisational results. As such, it would encourage exchange of measurements between function and the cost centre in relation to which it reports.

ADVANTAGES OF MANAGEMENT BY EXCEPTION

Thus much of the time-consuming process of thinking and decision-making can be performed in advance. A progressive system of action can be prescribed beforehand, much as a trouble shooter's manual may give an instrument repairman step-by-step directions to isolate a fault. As a result, only radical exceptions, either good or bad, need be interpreted and acted upon under pressure of circumstances and of time.

A MANAGER'S PROBLEM

The manager's problem may, therefore, be summed up as follows. Firstly, he needs to convert his instinctive, unconscious approach to management by exception to a positive, systematic way of handling every kind of management problem—men, money, materials, machines, etc. Secondly, freed from the demands of routine work, he can fill his time with creative effort directed towards improving plans, organisations, staff, decisions, etc.

One of the key values of pursuit of management by exception is that it would facilitate selection, from a mountain of trivial data, of the essential and vital information needed to manage better. Management by exception can make management life simpler and more effective and prevent management from over managing. Exceptions are not only danger signals. In selected instances they also display a green light for opportunity. Practice of management by exception involves the possibility of establishing standards that may demand much conformity. Yet the underlying principle of management by exception is almost wholly dependent on conformance to standards. The management process may be looked upon as a continual cycle of "break through" and "control." If an organisation were to keep alive and healthy, it should be prepared to break through its current set of standards to new levels of performance. The exceptional approach consciously practiced would assist and abet each phase of the cycle.

Management by exception is, however, not a panacea for all management problems. It has its limitations as well as its values; and it is especially limited by the vagaries and intractability of human beings at work.

It is often said that countries have only interests, no friends. I consider this a highly cynical notion. I hold friendship between countries can be established and nurtured only on the basis of common bonds that unite them and common principles that basically govern them. The ties between India and Russia can be traced to the historical past, but what has united them in our times are the identity of views and aspirations they hold. The same humanism, the same love of peace on earth, ending of exploitation of man by man and establishment of equality of all mankind that underlie their ideologies animate the peoples and governments of both the countries.

Both Mahatma Gandhi and Jawaharlal Nehru have held USSR in high esteem. Jawaharlal Nehru, as Prime Minister of India, laid the foundation of Indo-Soviet friendship. As the architect of India's policy of planning and industrialisation, he derived his inspiration undoubtedly from the achievement of the Soviet Union. His dreams are now being fulfilled with the increasing assistance that is being given by the Soviet Union and her Socialist allies of the COMECON countries.

DECISIVE AID FACTOR

Soviet aid is of lasting value, both in content and purpose. It is aimed at building and strengthening the infrastructure of the Indian economy, its sinews and muscles. Today, Soviet-aided projects are responsible for India's production of 85% heavy engineering goods, 60% of turbo-generators and heavy electrical equipments, 30% of oil products, 30% of steel and 20% of electric power.

The building of Bhilai Steel Plant was a turning point in the history of India's economic development. It is a fact that it was only after the Soviet Union came forward to establish this steel plant, Western countries rushed with offers of assistance for the construction of Rourkela and Durgapur Steel Plants.

Oil is of vital importance, both in war and peace. The oil needs of India are increasing year after year. But it was said that India had no oil. Soviet cooperation not only

THE INDOSOVIET TREATY OF FRIENDSHIP

helped to disprove this but also to set up a full-fledged national oil industry. Barauni and Koyali Oil Refineries, which were established with Soviet assistance, are now producing 35% of India's oil output.

The Mathura refinery, with a capacity of six million tons of oil products, is a major Indo-Soviet project, which is expected to be of considerable economic significance to northern India. When it goes into production in 1978, it is expected to meet the demand for various middle distillates.

DR. B. NARAJAN,
Member,

Tamil Nadu Planning Commission.

NEW FORMS OF ASSISTANCE

The Soviet Union at the request of India has also started constructing ships for the Shipping Corporation of India and the first ship made its maiden voyage to Madras recently. This trend is expected to be progressive in the future years. The Soviet help in this field can be measured from the fact that

India now spends about Rs. 170-180 crores in foreign exchange on freight charges alone.

Scientific co-operation with Soviet Union has resulted in the establishment of a rocket-launching station at Thumba. The scientists of both the countries are conducting joint studies on the nature of monsoons and the Monex-73 Programme is an outcome of this fruitful co-operation.

The growth of trade between India and USSR has been phenomenal. From Rs. 13 million in 1953, it rose to Rs. 396 crores in 1972 and is expected to reach Rs. 410 crores in 1973. With the setting up of the Indo-Soviet Commission on Economic, Scientific and Technical Co-operation in 1972, a new stage has emerged in the relations between the two countries. At its first session in February this year plans for extensive co-operation in many fields, such as ferrous and non-ferrous metallurgy, oil extracting, oil refining, etc. were formulated. This will give a new momentum to both economic cooperation and mutual trade.

Soviet Union has always been a true friend of India. She has always given a helping hand to India in times of need, and had supported her independent policies. How can India ever forget the innumerable times when Soviet Union supported India's case at the United Nations Security Council—over Kashmir, Goa, the Indo-Pak. conflicts in 1965 and 1971? The latest act of supplying 2 million tons of food grains to India as an unconditional, unasked for loan has been cited as a tribute to the friendly relations between countries.

MAJOR LANDMARK

The friendship and co-operation between India and Soviet Union are growing year after year. The signing of the historic Soviet-Indian Treaty of Peace, Friendship and Co-operation was a major landmark. It has provided both countries a new framework for mutual relations based on complete trust and confidence. The forthcoming visit of L. I. Brezhnev to India will bind this friendship with "hoops of steel."

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PETROLEUM CRISIS: WHY?

It may be asked why there is shortage of petrol after 23 years of economic planning. Shortage has to be considered in relation to demand. India was so underdeveloped at the time of independence, and our standard of living was so low, that in 1948 the demand for petroleum products was only 2.6 million tonnes. Almost all of it was imported, domestic production of petroleum products being only 185,000 tonnes.

By 1972 the demand rose to some 23 million tonnes of petroleum products. The vast increase in demand reflected the rapid development of industries and of modern means of transport in our country. And nearly 90 per cent of the demand was met through internal production.

INDIGENOUS REFINING SAVED FOREIGN EXCHANGE

This became possible because we took steps immediately after freedom to establish oil refineries, first in the private sector and then, under the Five Year Plans, in the public sector. It is much cheaper to import crude oil and refine it into petrol, kerosene, diesel, naphtha, bitumen, cooking gas and lubricants than to import these petroleum products. The foreign exchange saved through indigenous refining is presently at least Rs. 100 per tonne.

Side by side with the development of refining capacity, we have successfully developed oil exploration and extraction. At the time of independence there was only one small oil production centre, in the Digboi Oil Field, in Assam, and the level of production was a quarter million tonnes per year. Today, with discovery and exploitation of oil in the north-eastern region and in Gujarat, domestic production of crude oil—the greater part of it in the public sector—has gone up to seven million tonnes or 28 times the 1948 level.

This is, however, not enough to meet the demand for petroleum products. As in the case of electric power, steel fertilizers, where too indigenous production has increased

by leaps and bounds but still falls short of demand, domestic oil production is insufficient. Indeed the gap in the case of crude oil is large: indigenous crude oil production meets only 30 per cent of the requirement of refineries, and the balance is imported at heavy cost in foreign exchange.

CUT IN PETROL CONSUMPTION HELPS NAPHTHA PRODUCTION

International prices of crude oil have trebled during the last three years. Hence the need to restrain the demand for less essential petroleum products like petrol, and to conserve the available crude oil for essential uses such as naphtha on which the bulk of our present production of fertilizers is based. Import of naphtha is an alternative but it has not only become forbiddingly costly (its international price has gone up by nearly six times), its very availability has shrunk drastically, one reason being higher off-take by the affluent countries who have become conscious of environmental pollution and are turning to distillates like naphtha which have a lower sulphur content and are less pollutant.

A 25% cut in the consumption of petrol will enable us to produce additional 425,000 tonnes of naphtha in place of petrol. With this supply of naphtha our fertilizer plants will be able to produce 850,000 tonnes of urea. Normally every tonne of urea helps to produce 6 to 10 tonnes of additional wheat. Therefore, we would be bringing about an additional production of 5 to 8 million tonnes of foodgrains merely by curbing the consumption of petrol by 25%. Every litre of petrol saved is thus virtually equal to 10 Kg. of foodgrains.

Incidentally, there is a world-wide shortage of urea too, and despite sharp price hikes, it is becoming increasingly difficult to import it.

We have therefore to conserve every ounce of crude oil for making essential products like naphtha to increase the production of fertilizers and of diesel oil to run our road transport system as well as agricultural pump sets and tractors. This

can be done only by discouraging and minimizing the demand for a less essential product like petrol.

A WORD TO THE CAR OWNER

You know only too well that the Government has raised the price of your petrol substantially. Do you equally appreciate why this had to be done?

You are among the lucky few Indians who own a motor car: only one family in a thousand has a car. Yet private motoring accounts for almost half the petrol consumption.

Petrol is one, and not the most essential, of the products distilled in our refineries from crude oil—for which we are dependent to the extent of 70% on imports whose price has more than trebled during the last three years. Consequently the foreign exchange requirement has increased from Rs. 200 crores last year to Rs. 500 crores this year.

There are other petroleum products which are more essential, such as naphtha for making fertilizers diesel for public transport and for agricultural pump sets and tractors, and furnace oil for power generation, steel production, etc. Every litre of petrol saved will enable production of naphtha which can be turned by our fertilizer factories into urea, enough to grow 10 Kg. of foodgrains.

The hike in the price of petrol is intended to restrain its consumption as well as to generate resources for investment in economic growth, including the exploration and extraction of more oil within the country so as to produce enough petrol, among other things, to meet all needs.

SAVE PETROL FOR SAKE OF MORE FERTILISERS

A HISTORICAL AND ANALYTICAL SURVEY OF



THE VILLAGE IN TAMIL NADU

Tamil Nadu comprises 17043 Revenue Villages linked to the Taluk and District units of the Revenue Administration of the State. In terms of the Panchayat Raj set up there are 12628 Village Panchayats as on 31-3-1972. The Revenue village is an administrative unit whereas the Panchayat village is a Statutory unit related to the 374 Panchayat Unions encompassing the State. Then there are also 600 Town Panchayats and 11 Townships. Each Panchayat will comprise some contiguous hamlets. Such hamlets total 43228.

In the matter of rural electrification, however, the Harijan settlements forming part of each hamlet is treated as a distinctive unit. Therefore readers are often baffled by different numbers appearing as the total number of villages in Tamil Nadu.

In this article the large variety of administrative measures attempted for the resuscitation of village autonomy over the last 150 years are discussed while in the succeeding two articles the changes in village structure recommended by the State Administrative Reforms Commission and the proposals of the State Planning Commission's Task Force are furnished.

A revenue village is the smallest unit recognised in revenue administration having definite boundaries which are not statutorily fixed in Tamil Nadu, but are fixed by the administrative orders issued by the Government from time to time. The administrative division is as follows: Each district is divided into taluks to be in the charge of a Thasildar. It is further sub-divided into firkas under the control of the Revenue Inspector. Next come the Revenue Villages which function under the control of the Village Munsiff assisted by the Village Karnam as his accountant. Thus revenue village is a definite area which has been treated as a convenient unit for administration by the ordinary staff of village officers consisting of the Headman, Munsiff, Accountant and certain number of menials.

Nature of Panchayats

In Tamil Nadu, revenue village has never been treated as a single collection of villages, but a term denoting a certain well defined area. The extent of the area depends on past history based on administrative convenience at the time of resettlement of a district. It is usual to amalgamate contiguous village which are too small to have separate village officers and again to sub-divide those which are too large for a

CONCEPTUAL DISTINCTIONS BETWEEN REVENUE & PANCHAYAT VILLAGES

single set of officers to manage efficiently. It may sometimes happen that the constitution of the villages will be rechanged even when any retrenchment is considered by the Government as a general policy. Sometimes two villages will be put in charge of one set of village officers. The revenue village generally consists of several detached hamlets, one of which gives its name to the whole revenue village. The number of hamlets attached to each village has never been taken into account. The size of the revenue village can vary from district to district both in area and population. If in a particular district a single Headman is sufficient for over 1,000 persons, a Headman need not be provided for a village with lesser population in another district. The general tendency in the case of ryotwari tracts ins towards a village of a large size, but this is modified by the existence in some districts, notably in Chingleput and Thanjavur of mirasi or joint villages, the amalgamation of which with others will be administratively inconvenient. In dry areas, villages would necessarily be larger than in wet areas. The village Accountant has extra items of work in wet areas like irrigation, collection of water rate, imposition of penalties. More crops will be raised in wet areas. Sometimes re-settlement has been undertaken in several districts to remove these difficulties. Lastly in Zamindari tracts which previously formed a good proportion of area of the State, the size of the village depended on long-standing custom, unaffected by rules relating to the revision of village establishment. The tendency in such tracts is to form smaller villages. With the abolition of the Zamindari system, a large scale revision of villages has been undertaken with the result that some of the Zamindari and Estate villages have disappeared.

Evolution of Institution of Panchayats

In view of the importance of the role of panchayats, it is useful to have an historical retrospect on village panchayats of Tamil Nadu. They are not only important as the training grounds of democracy, but also as units which will in due course assume statistical importance. It is generally assumed that in ancient

time village panchayats formed an integral part in the national life of our country. They are deemed to be self-contained, economical administrative units functioning like a small republic, enjoying a good deal of local autonomy with powers of taxation for local purposes. To what extent this idealistic conception is true to reality, cannot be vouchsafed, but it is likely that a high degree of self-contained village life has existed in the past. Further till the advent of the British rule in India, the impact felt by the villages of the Central authority was comparatively little except during times of war. The first tendency of the British rule in India was to have a centralised system of administration and a gradual decay of the role of village panchayat was inevitable. Administration of justice was taken over by Civil and Criminal Courts controlled from the Centre and the Police function of the villages was undertaken by a specially created department called Police. Again, administration of the land revenue was vested in a separate department of Government. It also accelerated the movement of people from villages to towns with the result that self-reliance which the villagers had, gradually disappeared and the village panchayat as a useful rural institution sunk into insignificance. In their wisdom, the British administrators did realise in due course the significant role of village panchayats in India. Montague Chelmsford observed in 1820 that village panchayat would prove an excellent remedy for the imperfection of a bad form of Government. They felt that the State should take definite steps to promote among the people the habit of voluntary co-operation in public work.

Lord Ripon Initiated Enactment

The credit for realising the importance of initiating new measures in that direction goes to Lord Ripon whose resolution of 1882 regarding the association of non-officials in administration of local institutions led to the passing of the Madras Local Boards Act of 1884. It provided for the constitution of unions in small towns and large villages, mainly for looking after village roads, sanitation and lighting. About 400 unions were established,

the members of which were all nominated. After the visit of the Royal Commission on Decentralisation, the then Tamil Nadu Government decided to increase the number of these unions and introduced the principle of election. They also decided to constitute informal panchayats under the control of Collectors with the Local Village Headman as ex-officio Chairman. About thousand of these informal panchayats were accordingly constituted, but they had no statutory basis.

The next step was taken in 1918 when the Government of India in their review of the working of self-governing institutions pointed out the desirability of keeping panchayats as far as possible under the control of district staff and away from other administrative bodies. They also suggested the association of village officers with panchayats and advocated simple and elastic legislation to bring the panchayats into existence. The Madras Panchayat Act, 1920 was accordingly passed and enforced. It enfranchised men over 25 years of age and provided for election of all members of the panchayat. A post of Registrar-General of Panchayats was created to supervise the panchayats and he was aided by the non-official organisers. Side by side with these panchayats, the unions constituted under the Local Boards Act of 1884 and its successor, Madras Local Boards Act of 1920 also continued to function. The principle that the panchayat should be placed under the control of the district staff was not accepted at that stage.

Panchayats Placed on Par with the Panchayat Unions

By 1928 the number of panchayats increased to 3,000. The Government realising the difficulty experienced by Registrar-General to supervise so many village bodies transferred the well established panchayats to the control of the Collectors. Before the effect of this change could be gauged, Madras Village Panchayats Act of 1920 was repealed by the Madras Local Boards Amendment Act of 1930. That Act amended the Madras Local Boards Act, which was then in force, so as to bring within its scope the panchayats

constituted under the Village Panchayat Act. The panchayats were thus placed on the same footing as the unions which were already governed by the Local Boards Act and they acquired also considerably enlarged powers.

It was found that the condition of panchayats under the dual administration of District Boards on the one hand, and on the other of the Inspector of Municipal Councils and Local Boards, was generally unsatisfactory. The Madras Village Panchayat Act, 1946 (Act No. XII of 1946) was accordingly enacted by the Governor-General during the Advisers' Regime.

The aim was to exclude panchayats from the scope of Madras Local Boards Act, 1920 by framing a separate enactment and to place them under the District Collectors. The Ministry was, however, of the view that in order to make the panchayats really democratic institutions, control and supervision should be vested in Inspector of Local Boards and the control of District Collectors over the panchayat should be limited to certain emergency powers and panchayats should be vested with more powers. The Madras Panchayat Act, 1946 was therefore allowed to lapse in 1948.

The next step was the enactment of the Madras Village Panchayat Act, 1950 enforced with effect from 1st April, 1951. This is in implementation of the Article 40 of the Constitution which has enjoined that the State shall take steps to organise panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government. Under this Act, every village or hamlet with a population of 500 and above will have a panchayat. Villages with a population of less than 500 will be included within the jurisdiction of an adjoining panchayat or grouped with other contiguous villages to form a panchayat. The Act enjoins on panchayats certain obligatory functions such as construction and maintenance of public roads, lighting of street lights and public place, construction of drains, cleansing of streets, removal of rubbish, provision of protected water supply.

The main revenue for the panchayat was derived from the share of

the land cess realised in the village. Government also made ex-gratio grants. Government had supervision and control over village panchayats through the Inspector of Local Boards. The District Boards had no control over panchayats. They performed village panchayat function in non-panchayat areas until panchayats were constituted. The District Collectors did not have any control over panchayats except for certain emergency powers in ensuring safety of life and property and for breach of peace.

With the impact of the Community Development Programme, the Government of Tamil Nadu embarked on a new programme of development of panchayat administration. For this purpose a new Act—Madras Panchayat Act, 1958—was enacted. Accordingly a three year programme of the introduction of new Madras Panchayat Act was drawn up for every district. The entire rural area has been divided into development blocks for operating National Extension Service Scheme. These blocks were grouped in three batches. The Act was introduced in each batch of blocks during each of the next three years—1959—60, 1960—61 and 1961—62. With the introduction of the new Act in each development block, it became a distinct development block under the new Act with new set-up of panchayat administration installed therein. The old Panchayat Act and District Boards Act which provided statutory basis for the present set-up of local administration in rural areas ceased to be in force.

A special provision has been made in the Act for classification of a locality as a township under the Panchayat Act. This provision is intended for use when there is industrial labour or institutional colony or a health resort for which normal financial arrangements of either a panchayat town or a panchayat village will be unsuitable.

Delimitation of Panchayats with Local People's Consent

As a matter of administrative policy, no panchayat village can be delimited with a smaller population than 1,000 unless it can be shown to the satisfaction of the Government that such delimitation cannot

be avoided. Subject to this limit, the convenience and wishes of the local people have been respected in delimiting panchayat villages. For every panchayat village, a village panchayat has been set up and for every panchayat town, a town town panchayat has been set up.

These village panchayats and town panchayats are the local units of federal structure of organisation of panchayat administration while the panchayat union is to be the apex of this organisation. This set-up is somewhat different from that of the normal administrative machinery with taluks, municipalities and villages forming the administrative units. One essential difference between the two set-up as far as Tamil Nadu is concerned is that the panchayat is formed on a statutory basis.

Till the Act of 1958, panchayats and revenue villages have functioned in separate compartments. Some co-ordination now exists between the villages and the panchayats which is indicated below :

Under the Panchayat Act of 1958, Karnams (Village Accountants) have been designated as Secretaries of Panchayats. The Panchayats and Panchayat Unions have a number of statutory and discretionary development functions under Sections 64 to 66 of the Madras Panchayat Act, 1958. The Act has provided for the provision of adequate finance for discharging their responsibility. The main sources of income the panchayats are—local cess, local cess surcharge, house-tax, profession-tax, vehicle-tax and land revenue assignment (vide Section 115 to 124 of the Madras Panchayat Act, 1958). Under Section 126 of the Act, it is the duty of the village officers to collect taxes on behalf of the panchayat. Village Accountants help the President to arrive at the total demand of the panchayat. On the basis of the account furnished by the President, the Village Munsiff collects taxes. Thus a co-ordinated effort of the Village Accountant, Village Munsiff and the President is necessary for the provision of adequate finance to the Panchayat. The village officers are also paid additional remuneration for the work.

The Report of the Task Force on Rural Development (including Rural Housing) seeks to formulate a Perspective Plan for a progressive Rural Tamil Nadu as co-ordinated measures for an accelerated Rural Development Programme assume exceptional significance. This is in view of the importance of the agricultural sector in supplying food and nutrition to the people and materials to industry. It is also due to the fact that nearly 70 per cent of the population of the State live in rural areas; and the benefits of development should be spread in these areas on as wide a scale as possible, especially to the poorer and weaker sections, who constitute a large and vulnerable segment of the rural population.

TOP PRIORITY FOR RURAL WELFARE

Even if all the wants of the rural population cannot be met immediately due to limitation of resources, the criteria of social and economic justice necessitate that at least their minimum needs of life and labour are adequately met. The success of all plans designed for the socio-economic development of the State and the country would depend to a large measure on the initial creation of conditions favourable to progress, especially in the country-side. The improvement of rural life in all directions should, therefore, be the first and foremost step in any plan designed to promote the well-being and prosperity of the people.

MINIMUM NEEDS TO BE MET

The improvement of the general conditions of the country-side calls for detailed plans for protected water-supply, proper approach roads to villages and hamlets, educational facilities including those of social education, sanitation, health services, good houses, etc. To achieve these objectives, the basic assumption of Rural Development Planning is that all aspects of rural life are inter-related and that no lasting results can be achieved if individual aspects of it are dealt with in isolation. Accordingly, this Plan for Rural development embraces the work of every department of the Government which is engaged in rural welfare and development activities and has been conceived

VILLAGE CENTRED TOTAL DEVELOPMENT APPROACH

AS
RECOMMENDED
BY
THE
TASK
FORCE
ON
RURAL
DEVELOPMENT
OF
TAMIL NADU
PLANNING
COMMISSION

The socio-economic development of the State as well as the country depends to a large extent on the initial creation of conditions favourable to progress and prosperity, especially in the country-side. In this light of past experience, the Task Force on Rural Development of Tamil Nadu Planning Commission, has in its report, stressed that the all-round improvement of rural life should be the first and foremost step in any plan designed to promote the well-being and prosperity of the people.

from a total perspective, avoiding lop-sided growth by departmental or fragmental approach.

As a general approach to Rural Development-cum-Panchayat—it is imperative that the Community Development-cum-Panchayat Raj institutions should be more effectively involved in rural development. These institutions are meant for securing the fullest development of the material and human resources of the rural areas. To-day, the Panchayat organization has become the pivot of Area, District and Regional Planning and Development, and practically all development activities at the block-level are executed through the Panchayat Unions.

THE MAJOR OBJECTIVES OF THE PLAN

The major objectives of the pragmatic plan for rural development presented in this report are the provision of the basic minimum needs which will ensure 'the quality of life' for the rural poor and the provision of vastly expanded employment opportunities in the rural areas. This Plan anticipates the enthusiastic participation of the people in the development programmes, which is a necessary condition for their success. Therefore, the Community Development-cum-Panchayat Raj institutions are proposed to be further galvanized in the Perspective Plan period to become the Effective Instruments of Social and Economic Change.

A BRIEF ACCOUNT OF THE PROGRAMMES PROPOSED

SOCIAL EDUCATION

The Programmes contemplated include Community Recreation Centres, Radio Forums, Youth Clubs, Functional Literacy Schemes, Seminars, Award of Prizes, etc. The programmes relating to the organization of Youth Clubs, Radio Rural Forums, Recreation Centres, etc., have been treated as voluntary activities to be sustained by local efforts. A Block Circular-

ing Library with branch libraries and a "Quarterly Digest on Panchayat Administration and Extension Work" are also proposed. It is felt that such measures are necessary to inculcate a sense of literary consciousness and proper citizenship among the masses. The *Digest* will go a long way in increasing the knowledge and efficiency in work of the officials and non-officials connected with Panchayat Administration.

It is recognized that there should be a higher priority for the school buildings programme so as to utilise these fixed assets to the full use for the common, social and economic needs of the people, as besides formal education, the success of functional literacy programme and vocational bias to education depends on these social assets. Taking into consideration the paucity of resources available, a total outlay of Rs. 51 crores has been provided for the construction of buildings for Elementary Schools and Higher Elementary Schools in the rural areas.

AGRICULTURE

The programmes contemplated include schemes for providing infrastructural facilities like construction of agricultural sub-depots and additional godowns, schemes of agricultural extension work like adoptive trials, demonstrations, exhibitions, etc., schemes for the creation of common facilities for the benefit of the village community as a whole like purchase of implements and machinery for hiring out to farmers and construction of *Community Threshing Floors*, schemes for the benefit of groups of farmers like soil conservation, community irrigation wells and reclamation of alkaline lands and other schemes like village afforestation, panchayat plantations and planting of avenue trees and schemes for the benefit of the individual farmers like supply of plant protection chemicals, supply of fertilisers and supply of power-driven equipments.

ANIMAL HUSBANDRY

The programmes contemplated include schemes for provision of infrastructural facilities like service centres, construction of additional veterinary dispensaries, sub-centres

and quarters for veterinary staff, animal husbandry extension schemes like exhibitions, printing of publicity materials and training in poultry, schemes benefitting the village community as a whole like creation of common facilities like supply of breeding bulls, construction of cattle sheds, organization of sewage forms, raising of fodder grasses in Panchayat porambokes and schemes to benefit individuals like encouragement of mixed farming by supply of poultry at subsidised rates and growing of fodder and grain required for cattle and poultry.

The schemes for the development of fisheries in the Panchayat Union areas are broadly the introduction of fingerlings, operation of fish nurseries and maintenance and renovation of tanks.

MINOR IRRIGATION

During the Third Plan period, under the Tamil Nadu Panchayats Act of 1958 all the Minor Irrigation Sources with an ayacut of less than 200 acres were transferred to the Panchayat Union Councils. Similarly, the ex-zamin tanks after standardisation were also transferred from time to time. There are now about 25,246 sources with an ayacut of 9.85 lakhs of acres under the control of the Panchayat Unions. They are in different state of repairs. Hence the future direction of development lies in standardizing and improving these Minor Irrigation Sources. Necessary programmes have been evolved to bring these Minor Irrigation Tanks to standards and to increase the M.I.L., in order to increase the ayacut.

WELFARE OF WOMEN AND CHILDREN

The programmes relating to the organization of *Mahalir Mandrams* under the Minimum Programme consist of organisation of local women through discussions and demonstrations on subjects like Child Care, Home Science, Kitchen Garden, etc. Adult literacy classes are conducted and crafts such as sewing and embroidery are also taught.

Staff quarters have been provided in Block headquarters out of the Community Development funds

only in 194 Blocks. It has been proposed to cover the remaining 180 Blocks during the Fifth Plan period itself. Similarly, additional units of houses have been proposed for the Government staff in each Block head quarters. Necessary schemes have also been proposed for office buildings wherever necessary and garages for jeeps.

RURAL WATER SUPPLY

It is strongly felt that the pattern of programming and financing the rural water supply schemes hitherto done separately under various categories like 'simple wells', 'piped water supply' and 'wells in scarcity areas' may give place to an *Integrated Scheme of Rural Water Supply* which will make it possible for each area to take up such schemes that are suitable to it. Therefore, it has been proposed to earmark specific provision for disadvantaged areas under a new "Disadvantaged Area Water Supply Grant". There will also be a new "General Purpose Water Supply Grant", the funds of which are to be distributed on a per capita basis to cater to the requirements of all areas. Needless to add, the Rural Water Supply Programme has been assigned a very high priority in the Rural Development Plan envisaged in this report.

DRAINAGE IN RURAL AREAS

The problem of drainage in rural areas is a long neglected one. In villages where narrow lanes and alleys separate the houses facing each other with no backyards, the sewage water stagnates in pools in the undulating road surfaces making the entire surrounding insanitary. Hence, it has been proposed to construct side-drains on each side, which will serve as a revetment to fill up the uneven lane surfaces and pave them.

RURAL ROADS

As provision of link roads alone will provide the quality of life to the rural population, a high priority is given for the Rural Roads Programme. The schemes contemplated also provide for metalling and blacktopping of roads in hilly areas.

RURAL HOUSING

The Task Force has made important recommendations as regards Rural Housing. It is strongly felt that the house sites allotted must have adequate space for a homestead and enough land to raise a kitchen garden, to maintain a backyard poultry or some milch animals. Therefore, it is felt that a house site should be atleast about 10 to 15 cents in extent. It is also felt that the allotment of house sites here and there, irrespective of the principles of Town and Country Planning, may aggravate the cost and make the net social benefit uncertain. Therefore, it has been recommended that elevated grounds, as far as possible near the workspots may be acquired and proper lay-outs with streets, parks, etc., prepared so as to ensure the provision of common services and amenities.

The concepts of urban architecture should be substantially modified to suit the rural land use and building material choice. A Rural Housing Scheme on the Kerala pattern has also been proposed.

The Village Housing Project Scheme is found to be a good scheme in operation. Therefore, the Task Force has recommended a wider extension of the scheme.

It is recognized that to tackle the problem of Rural Housing, huge outlays are required. It is also noted that the State and the Union Governments have to allocate their limited resources among various priority programmes. Therefore, it may be difficult to earmark very huge outlays for Rural Housing Programmes alone. In the circumstances, it is considered that it would be useful to form a State Rural Housing Corporation with an initial seed capital. This Corporation will then be able to mobilise resources for its programmes through institutional finance and other available means. The Task Force has therefore strongly recommended the early establishment of a Tamil Nadu Rural Housing Corporation.

RURAL ARTS, CRAFTS AND OTHER INDUSTRIES

It is recognized that Rural Industries have to be accorded an important place in the development of

the rural economy in view of their capacity to generate employment opportunities in the rural areas at a low capital cost. Tamil Nadu, the seat of the ancient Dravidian culture, has a global reputation for its handicrafts, which are of rare excellence and design both from the points of view of utility and decoration. There is a great future for the economy of Tamil Nadu if skill formation and use in handicrafts are made consistent with the popular demand created for the products. Keeping this in mind, the Task Force has formulated a number of programmes for the promotion of handicrafts. Of these programmes, special mention may be made of the scheme for opening Raw Material Depots and the scheme for the establishment of a Price Fluctuation Cess Fund to protect the interests of the weaker sections of the handicrafts units.

COIR

The Task Force has also formulated schemes for developing the Coir Industry in the State. Though there is great scope for the development of this industry, still it is in an infant stage. Hence, the Task Force has formulated schemes for its promotion with financial assistance from the Coir Board or from the Government of India.

RURAL WORK CENTRES

Besides the extension of the Rural Industries Project Programme to more areas, the Task Force has also recommended the establishment of a number of Rural Work Centres.

OTHER SPECIAL PROGRAMMES OF RURAL DEVELOPMENT

The Task Force has recommended the wider extension of the Rural Man-power Programme, the Applied Nutrition Programme and the Crash Scheme for Rural Employment. With regard to Nutrition Programmes, the Task Force has made the following recommendations.

NUTRITION

The Nutrition Programmes in the Block areas were financed under a variety of schemes such as the Pre-school Feeding Programme, the CARE-assisted Feeding Program-

me, the Demonstration Feeding Programme and the Applied Nutrition Programme. A multiplicity of feeding programmes with differing patterns of financial assistance results in difficulties. The implementation of the Pre-School Feeding Programme in isolation without the participation of *Mahalir Mandrums* does not tend to create a visible impact on local women. Therefore, the strategy contemplated by the Task Force is the operation of a Composite Unit consisting of a *Mahalir Mandrum*, a Pre-School and a Creche, in order to benefit the working women belonging to the weaker sections of the community. Such a Composite Unit and Programme may bring about a greater and intensive participation of the working women in the *Mahalir Mandrums*.

RESEARCH AND DEVELOPMENT PROGRAMMES

The Rural Development aspects of a planning have to be subject to a fundamental thinking as to their uniqueness in contrast to urban development aspects of planning. Otherwise the economic logic of operating a separate rural development programme will be open to question. The Task Force has therefore formulated Research and Development Programmes like 'Studies in Socio-Economic planning for Rural Development', 'the Research and Development Scheme for Handicrafts' and 'Research in Rural Housing'. With regard to 'Research in Rural Housing', the Task Force has recommended the early establishment of a *Research Wing in the Rural Housing Cess*.

TOTAL OUTLAY CONTEMPLATED FOR RURAL DEVELOPMENT.

A total financial outlay of Rs. 65,799.84 lakhs or about Rs. 658.00 crores is contemplated in the Perspective Plan period for the various Rural Development Programmes. The programmes provide for an investment of Rs. 28,312.57 lakhs or about Rs. 283.13 crores in the Fifth Plan period and Rs. 37,487.27 lakhs or about Rs. 374.87 crores in the Sixth Plan period.

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The Directorate of Rural Development runs the following Training Centres in which elected representatives of the Panchayat Raj Institutions, District Officers of different development departments and Officers of the Panchayat Raj Institutions are trained :

1. State Institute of Community Development.

2. Rural Extension Training Centres with Workshop Wings attached.

STATE INSTITUTE FOR COMMUNITY DEVELOPMENT, BHAVANISAGAR

The following courses are organised in this Centre :

(a) COURSE FOR PANCHAYAT UNION CHAIRMAN AND VICE-CHAIRMEN

Three courses with 40 Chairmen of Panchayat Unions and Vice-Chairmen in each Course are run for a period of 10 days each. These courses are intended to give the elected representatives a knowledge and background about the working of the Panchayat Raj institutions and rules.

(b) ORIENTATION COURSE FOR DISTRICT OFFICERS OF DIFFERENT DEVELOPMENT DEPARTMENTS AND EXTENSION OFFICERS

Six courses of a fortnight's duration each are run with 50 District Officers and Extension Officers in each course with a view to orient them to the Panchayat Raj concept and to imbibe them with the idea of co-ordinated approach to development.

(c) JOB COURSE FOR BLOCK DEVELOPMENT OFFICERS

This course is for a period of 2 months and is given to the Block Development Officers to train them in their work.

(d) AD-HOC COURSES

Other courses like the Applied Nutrition Programme, Training for District Officers, etc., are also organised in this Centre.

CENTRES

The following training programmes are conducted in the Rural Extension Training Centres :

(a) **Pre-Service Training** : Before appointment as Gramsevak, the selected candidates are given two years training in Agriculture, Animal Husbandry, Co-operation, Public Health, Panchayats, etc., with a view to equip them for the job. To facilitate teaching of Scientific Farming, a Farm Dairy Unit is attached to each Training Centre. During 1972-73, 400 candidates have been selected for appointment as Gramsevak and they have been sent for the pre-service training.

(b) **One-Year intensive training in Agriculture for selected Gramasevaks** : To improve the competence of Gramsevak, particularly in the field of agriculture, a one-year training leading to the Diploma in Agriculture Extension is conducted. The Gramasevak with experience in the field are selected for this course. So far 959 Gramasevak have been trained.

(c) **Workshop Wings** : At present, Workshop Wings are attached to all the Rural Extension Training Centres. In each Workshop Wing, 10 trainees in Carpentry and 10 trainees in Blacksmithy are given training for one year. So far 961 candidates have undergone this training.

The three Workshop Wings at the Rural Extension Training Centres at Pattukkottai, T. Kallupatti and Bhavanisagar have been upgraded as Production-cum-Training Centres during 1970-71 and are now taking up repair and maintenance of agricultural machinery in the neighbouring Blocks.

These training programmes have gone a long way in equipping the Block officials at different levels and the non-officials connected with the Community Development and Panchayat Development Programme to carry out their duties and responsibilities effectively.

TRAINING FOR LOCAL LEADERSHIP AND RURAL WORK

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The State Administrative Reforms Commission, in its report on the District Revenue and General Administration has recommended material changes in the structure and the style of working of the department, to make it more responsive to the needs of the rural population.

One of the major problems identified by the Commission, as calling for urgent solution, is the unsuitability of the present village establishment to cater to the needs of the rural society. The system was evolved by former rulers, primarily to use the local chieftains, to keep a watchful eye on a sullen people. The concept behind it was essentially feudal, and not one of service to the people. The ill-paid, part-time Village officials, not fully amenable to the governmental discipline, are behind most of the village controversies, neutralising the effectiveness of the elected village panchayats. Their feudal traditions and their inaccessibility to the poorer and weaker sections in the village have convinced the Commission, that they must be replaced by a set of regular transferable government servants forming part of the Revenue Department who will be disciplined in the tradition of the Department, and who will be motivated for better performance by the opportunities for career advancement available in that Department. It has also suggested in the context of engaging full-time government servants, the enlargement of the size of the revenue villages by 3 or 4 times and the establishment in each such village, a public village office, from where the new Village Officers will function (unlike the present ones who function from their own residence), where public revenue records will be kept and to which all villagers will have free access. The Commission envisages that the number of villages will come down from the present level of 12,000 to 4,000 and that these new villages will be coterminous with the enlarged village Panchayats and the jurisdictions of Gramasevaks.

Between the Villagers and the District Collector there are now 5 levels of administrators, located in different places, causing people considerable inconvenience. The Commission recommends the elimination of two of these levels with the objectives of providing the Department greater cohesion, better lines of control and effectiveness in dealing with people.

BIGGER VILLAGES AND SMALLER DISTRICTS

VIEWS OF STATE ADMINISTRATIVE REFORMS COMMISSION

The Commission has reviewed the land revenue system, as it evolved during the British regime and the changes which have taken place in it since 1937. It has shown that the decision taken in 1937 to discontinue periodic resettlements, and the more recent decisions to waive assessments on all dry lands and some wet lands have not only not resulted in any substantial benefits to the people, but also have led to serious difficulties in the land revenue administration. The resettlements, apart from enabling the Government to revise the land revenue rates to be in line with the changing prices and incomes, served the more important purpose of updating the survey and land ownership records, in a thorough and systematic manner, once in 20 years. The loss of this facility for the revision of land revenue rates can at least be acquiesced in, since the levy of local cesses and surcharges to the extent of 45% to 250% has achieved more or less the same results. But failure to resort to resettlement for systematic registry revision has resulted in the land records becoming appallingly out of date. Land revenue representing now only 3% of the State's receipts, may have ceased to be significant to the Government, but land values have gone up steeply and the maintenance of records indicating their correct ownership must be of much greater concern to the State than before. The Commission has therefore recommended the restoration of the waived assessments and the revival of the re-settlement practices with an accent on registry-updating. Incidentally, resettlements can also enable the Government to integrate the existing ad hoc levies and to gradually eliminate the existing disparities in rates among the various districts.

Formation of New Districts Advocated

The Commission also envisages the formation of 6 or 7 more new districts, in the course of the next 7 to 10 years, to make the size of the Districts more manageable. It has identified the towns with the best potential for development as District Headquarters and has recommended their accelerated development under the Plan Schemes. It has also recommended that the new districts be formed one after the other in a phased manner over 7 to 10 years, to avoid bunching of non-productive expenditure, and to neutralise possible state-wide political controversies over the boundaries and choice of headquarters. The Commission has suggested the immediate enlargement of the Madras District, by the addition to it, of Saidapet and

Ponneri Taluks from Chingleput District as these contiguous areas with a metropolitan character have similar needs and problems calling for the integration of the administrations catering to them. The transfer of Arkonam Taluk from North Arcot District to Chingleput has been recommended as a consequential step.

One of the most important recommendations of the Commission is to transfer bulk of the scriptory work of the Village Officers to the Taluk Office, where it could be mechanised with advantage.

Tiruparankundram Panchayat Union in Madurai district has set shining example for all other unions of its kind in the manners and methods of implementation of a score of welfare-oriented social service schemes to the well-being of the multitude of mass of people in the rural area without distinction or discrimination. Comprising as many as 44 Village Panchayats, in addition to 5 Town Panchayats and one cantonment, and an area of 36,373 acres of fertile land useful and usable for cultivation of crops, the Union has heaped success upon success in the execution of many a welfare scheme such as extending facilities to the farmers in the modernisation and mechanisation of agricultural operation thereby helping the acceleration of the process of Green Revolution, enlarging educational facilities and benefits to the rural folk in a wider circle and larger scale, raising the standard of public health service in its jurisdictional area, etc., and in all its actions and activities the Union has attained immense and immeasurable results in catering to the fundamental needs of the common folk. In addition to these, the notable and noteworthy scheme it has implemented with exemplary success is the Rural Employment Scheme



brought into vogue in 1971-72 to provide more and more employment opportunity for the rural folk.

The Rural Employment Scheme was originated to relieve to the extent possible the rural mass from the burden of unemployment. This scheme as in the case of other unions all over India, was put in operation in this Union in 1971-72. To give effect to this scheme in proper perspective and proportion, the Union has been compartmentalised into five major divisions, each division comprising 10 Panchayats. And in each division, 80 to 90 persons

have been selected for work, each paid Rs. 4 per day or Rs. 100 per month on an average.

Works are being executed separately in each division and they are entrusted with the works of reclamation of barren lands of Panchayat Unions, raising bunds in the fields, construction of irrigation tanks and desilting of existing tanks, etc. During the years 1971-72 and 1972-73 alone, a sum of Rs. 2,24,497 has been paid towards wages for the workers engaged on permanent and regular basis. Under this scheme, new roads to the extent of 27.60 km. have been laid in the Union area. Irrigation canals benefiting an irrigated area of 24.90 hectares have been reformed and reclaimed for better use.

In 1971-72, a total sum of Rs. 293.05 lakhs was earmarked to the Rural Employment Scheme in Tamil Nadu. Apart from Kanyakumari and the Nilgiris districts for which a lump sum grant of Rs. 12.50 lakhs was allotted for each district, in all other districts in Tamil Nadu, each development block was provided with a fund of Rs. 1.25 lakhs under this scheme.

After looking into the implementation of this scheme in the districts of Madurai, Ramanathapuram, Coimbatore and the Nilgiris in person, the Director-General of the Rural Employment Scheme of the Union Government, Thiru T.C. Pande was all praise for the manners and methods adopted in the execution of this scheme in Tamil Nadu.



WORLD STANDARD SWIMMING POOL.

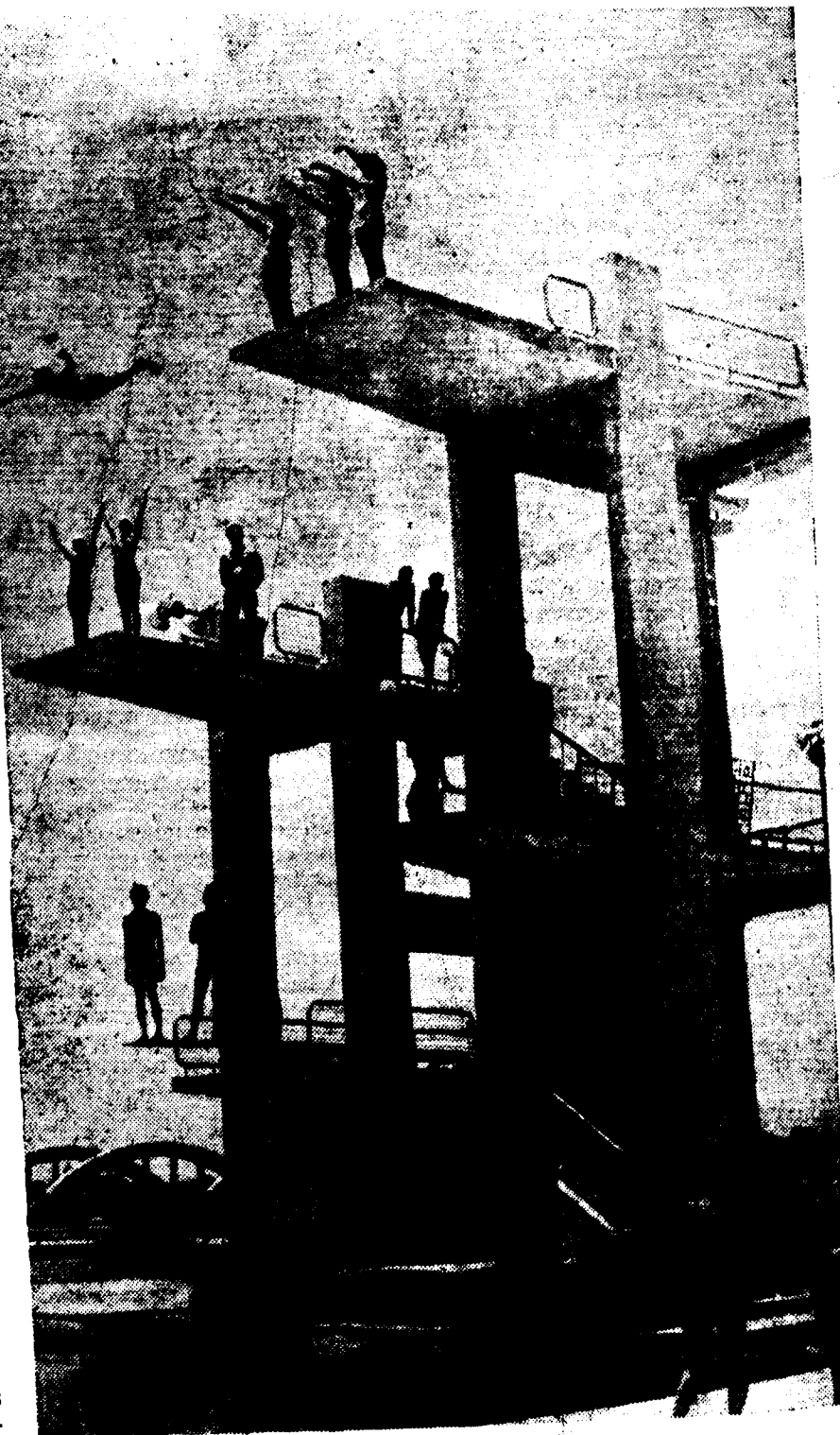
With the recent conduct of an All India Level Aquatic Competitions the Anna Swimming Pool has its place on the swimming map of the world. For, it is said, that nowhere else in India is there a competition swimming pool which has the under-water glass cabin for observing the competition swimmers by judges and referees for stroke faults etc. This is an essential equipment in competition swimming pools all over the world. Combining as it does, both swimming and diving pools, adjacent to each other, the Anna Swimming Pool caters to the swimming and diving enthusiast full scope without coming in the way of each other.

This pool was completed by January, 1973 and conforms to all the International standards. The swimming pool is 25 metres long 15 metres wide and 5 metres deep. In the underground observation room 3 glass panes have been fitted, facing the waterside so as to enable Judges to see the swimmer's accuracy in strokes and type of swimming during competition swimming. To the South of this pool is situated the 4-tier diving pool. High diving boards are fixed up in varying heights like 3, 5, 7, 50, 100 metres and so on. All the diving boards are made of fibre glass, coated with teak wood planks so that the diver could get easy spring from off the board. This pool has been constructed at a cost of Rs. 20 lakhs and is completely illuminated with floodlights. Swimming is allowed here on all days from 6 a.m. in the morning upto 9 p.m. in the evening. The safety of beginners is assured by vigilant attendants.

The swimming pool water is perpetually under automatic circulation for aeration and chemical cleaning. When swimmers enter the pool water overflows into a surflow collecting channel in the sides of pool and then flows into a circular balance tank 20 feet diameter 15 feet deep situated at a suitable position in front of the main entrance platform. From this balance tank the water is drawn through two 10 inches suction mains by circulating pumps and then passed through Candy Horizontal Pressure Filters and returned to the pool. At a point on the pump suction, alumina sulphate is added for the purpose of coagulating

the impurities and suspended matter in the water, thus enabling these impurities to be retained in the sand during the process of filtration. Soda ash is added in the form of solution at a suitable point in the suction mains for maintaining the pH value of the water in the pool. At a point on the outlet mains, Chlorine solution is added to the water for sterilization purpose. Water entering the pool from the filtration plant flows through P.V.C. pipes with nozzle embedded on the bottom sides of the main pool as

also the diving pool. When there is no bather in the pool and the pool is upto the fill level the balance tank should be very nearly empty. As bathers enter the pool the displacement of water which occurs is then taken up by the balance tank and not by a rise in the level of the pool. With the maximum number of bathers in the pool, the balance tank will be almost full and there will still be a freeflow of water over the Cill around the pool, to continue the process of cleaning. —S.S.



TAMIL NADU WINS ALL INDIA

CIVIL SERVICES VOLLEY BALL TOURNAMENT

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The Tamil Nadu Civil Services Volley Ball team led by Thiru M. Satyanarayana, Chief Secretariat, won the All India Civil Services Volley Ball Tournament held at Hyderabad and won the Trophy for the Tamil Nadu. The winning of the Trophy by Tamil Nadu Civil Services is a landmark in the achievement of the Tamil Nadu Civil Services, not only because of the All India character of the fight but because of the fact, it is the first time that the trophy is won to Tamil Nadu. Twentyone State teams from all over India have participated in the fight for the Trophy. The Tamil Nadu Civil Services Team has earlier defeated Punjab, Indian Audit and trophy is won to Tamil Nadu. Twentyone State teams from all over India have participated in the fight for the Trophy. The Tamil Nadu Civil Services Team has earlier defeated Punjab, Indian Audit and Uttar Pradesh teams and entered into the finals. In the final match, it met Andhra Pradesh who had been keeping the Trophy for the last four years and won. The

Captain and Members of the Team paid a courtesy call on the Education Minister Thiru V.R. Nedunchezhiyan and Dr. Kalaingar, with the Trophy and conveyed their deep gratitude for their help and encouragement. They were warmly congratulated by the Education Minister and the Chief Minister. The Members of the team consisted of the following persons :

1. M. Satyanarayana—Assistant, Chief Secretariat—CAPTAIN.
2. S. Ramamurthy—Pallava Transport Corporation.
3. C. Mohan—Pallava Transport Corporation.

4. P. Alexander—Pallava Transport Corporation.

5. M. Shanmugham—Pallava Transport Corporation.

6. A. Koil Chitra Pandiyan,—Pallava Transport Corporation.

7. T. M. Rajaseelan—Pallava Transport Corporation.

8. Deenadayalan—King Institute, Guindy.

9. M. S. Ramachandra, King Institute, Guindy.

10. K. Dharmarajan—Public Works Department.

11. V. Mathivanan, Legislative Assembly Department.

12. M. Punuguraj—Industries Department.

VOCATIONAL TRAINING INSTITUTES FOR HANDICAPPED

Category	Name of the Centre	Trades in which training is imparted
(1)	(2)	(3)
Blind	1. Light Engineering Project for the Adult Blind, Guindy, Madras-32.	Basic Engineering, Work-shop, Filing, Cutting, Hacksawing, Drilling, Punching, and Tapping (hand), Plain turning, and revolving, Press operation (hand operated) and Assembly work.
	2. Tamil Nadu Rehabilitation Centre for the Blind, Madurai-20.	Weaving, Tailoring and Caning.
	3. Bishop Diehl Rehabilitation Home for the Blind, Tiruchirappalli.	Handicrafts.
	4. Sheltered Workshop and Training Centre for Blind Girls, Madras.	Basket-making and mat-weaving.
Deaf	1. Training Centre for the Adult Deaf, Santhome, Madras-28.	Fitting, Tailoring and Needle-work.
Orthopaedically Handicapped	1. Swedish Red Cross Rehabilitation Industries, Katpadi, N.A. Dt.	General Workshop Practice in Drilling, Tapping, Grinding, Lathe Work, Milling, Welding, Sheet-metal Work, Fabrication of Steel Furniture.
	2. Bishopinna Agnes Diehl Rehabilitation Centre, Dindigul.	Fitting, Turning, Welding, Carpentry, cloth-weaving, Mat-weaving.
	3. Indian Red Cross Society Vocational Rehabilitation Centre for Adult Amputee, Egmore, Madras-8.	Printing, Book-binding.
Mentally Retarded		
Leprosy Cured	1. Gabriel Rehabilitation Centre, Manappakkam, Madras-16.	Note-book making, Fire-polishing and petty carpentry work.
Common	1. Book Binding Training Unit, Department of Employment & Training, Guindy, Madras-32.	Book Binding.
	2. The Salvation Army Catherine Booth Hospital, Vocational Training Centre for the Physically Handicapped, Aramboly, Kanyakumari Dt.	Handloom weaving, Clock-repairing, Welding (Arc & Gas), Turning, Spray painting, poultry farming.

INSTITUTIONS FOR THE DEAF

(For Both Boys & Girls, except where stated otherwise)

Serial No.	Name and Address	Admission age range	Edu./Voc.	Hostel facility and fees
1	School for the Deaf, Cathedral Post, Madras-6 (For Girls, Boys only up to 5th Std. *)	3 to 5	Edu./Voc.	Available
2	Louis Institute for the Deaf, Adyar, Madras-20 (for boys only)*	10 & above	Edu./Voc.	Yes
3	Municipal Deaf and Dumb School, R.S. Puram, Coimbatore-2.	5 to 15	Edu./Voc.	Free boarding for Boys only.
4	Municipal Deaf and Dumb School, Karaikudi-1, Ramnad District (for boys only)	5 & above	Edu.	Free boarding
5	The Clarke School for the Deaf, 35/A Chambers Road, Madras-28.	2 to 10	Edu.	Available Rs. 100 p.m. (Some Scholarships available)
6	Santhi Samarasa Deaf & Dumb School, Kalyanapuram, Sivasailam P.O., Tirunelveli District.	6 to 12	Edu./Voc.	Free boarding.
7	Y.M.C.A. School for the Deaf and Dumb, Ellianagar, Madurai-10	5 & above	Edu.	Not available
8	C.S.I. School for the Deaf, Kottaram, Kanyakumari.		Edu.	Yes
9	C.S.I. School for the Deaf, Manamadurai, Ramnad Dt.	6 & above	Edu.	Available
10	Flowerence Swainson Deaf School, Palayamkottai, Tirunelveli-2	5 & above	Edu./Voc.	Available (Hostel fees collected according to parent's income)
11	Govt School for the Deaf, No. 1, Sivaji Nagar, Thanjavur.	6 to 12	Edu./Voc.	Free Boarding & Lodging
12	C.S.I. School for the Deaf, 148, Santhome High Road, Madras-4.	4 to 5	Edu./Voc.	Free Boarding & Lodging.
13	I.E.L.C. School for the Deaf, Ambur, North Arcot Dist.	6 to 12	Edu.	Not available
14	Little Woodford, (English Medium only) Mowbray's Road, Madras-4.		Edu.	Not available

*Indicates institutions where both English & Tamil are medium of instruction. Tamil is the medium of instruction in the rest, Tuition free in all except in Sl. No. 5 where the fee is Rs. 50 p.m.

INSTITUTIONS FOR THE BLIND

(For Boys & Girls except where otherwise stated)

Serial No.	Name and Address	Admission age range	Edu. Voc.	Hostel facility and fees.
1	School for the Blind, Teynampet, Madras-6 (For Girls, Boys upto 5th Std.)*	3 to 9	Edu./Voc.	Yes.
2	St. Louis Institute for the Blind, Adyar, Madras-20.	10 & above	Edu./Voc.	Yes.
3	Govt. School for the Blind, Bungalow Street, Salem-2.	6 to 10	Edu.	Yes
4	School for the Blind, Swedish Mission Hospital Post Office, Tirupattur, Ramanathapuram Dist.	3 to 30	Edu./Voc.	Yes
5	T.E.L.C. School for the Blind, Podanur, Coimbatore (Boys only)	5 to 20	Edu./Voc.	Free
6	School for the Blind, Fort Round, Vellore	5	Edu.	Yes
7	Govt. School for the Blind, Nellikuppam Road, Cuddalore-1	10	Edu.	Rs. 20 p.m.
8	School for the Blind, Palayamkotta, Tirunelveli-2.	6 to 10	Edu./Voc.	Free
9	Govt. School for the Blind, Punur, Trichy-17	7 to 10	Edu.	Yes
10	Govt. School for the Blind, Poona-mallee, Madras-56	8 to 35	Edu./Voc.	Free
11	School for the Blind, Madurai.	—	Edu./Voc.	Free

Tamil medium in all except No. 1 above. Tuition Free in all.

FOR THE MENTALLY RETARDED (BOTH BOYS & GIRLS)

1	Bala Vihar, Hills Road, Kilpauk, Madras-10 (Free Tuition)	8 to 14	Edu./Voc.	Rs. 60—100
2	Institution for the Mentally Handicapped, Race Course Madurai-7 (Tuition Free by means Test)	6 to 13	Edu.	No. hostel
3	Balar Kalvi Nilayam, 2 Ritherdon Road, Madras-7.	—	Edu.	—
4	Dr Boaz Memorial School for Retarded Children, No 29, II Main Road, Gandhinagar, Madras-20.	—	Edu.	—
5	School for the Mentally Retarded, 35/A, Chaudhri Road, Madras-28.	—	Edu.	Rs. 50 p.m. No

(Tamil Medium in all. English Medium in 4 & 5. Telugu Medium in 4.)

VOCATIONAL AND REHABILITATION CENTRES

Sl. No.	Name and Address	Admission Age range	Details and types of training offered.	Duration of the course	Stipend	others
DEAF (For both Males & Females)						
1.	Training Centre for the Adult Deaf, 37, Santhome High Road, Madras-28.	14 to 28	Fitter, tailoring Needle work	2 yrs	Nil	
2.	Society for aiding the Handicapped, 35/A, Chaudhri Rd., Mds-28	Any age	Cane work, tailoring, knitting, embroidery	no specific period	Rs. 30 p m	limited hostel facility available.
ORTHOPAEDIC (Males only)						
1.	Gabriel Rehabilitation Centre, Manappakkam, Madras-89. (For disabled by Leprosy too)	15 to 30	Note books making, Birmopolishing and petty carpentry work	6 months to 1 year.	Rs. 65 p m	Hostel facility for 20 is available-Rs. 55 p. m.
2.	SALVATION ARMY, C.B.M. Vocational Training Centre for the Physically handicapped, Aramboly Kanyakumari.	18 to 24	Handloom weaving, clock-repair, welding (Arc & Gas), turning spray painting, poultry farming.	2 to 3 yrs. (in service)	Nil Nil	free boarding and lodging. Admissions through Catherine Booth Hospital, Nagercoil.
3.	Book Binding Unit, Industrial Training Institute compound, Guindy, Madras-32.	18 to 36	Book binding.	6 months	Rs. 50 p.m.	
4.	Red Cross Vocational Rehabilitation Centre for the Adult Amputees, Egmore, Madras-8.	15 to 30	Printing and book-binding	6 months to 1 year	Rs. 65 p.m.	This is a training centre-cum - production centre. Hostel facility for 20 at Rs. 65 p.m.
5.	Bishopinna Ages Diehl Rehabilitation Centre, T.E.L.C. Compound, Nagalnagar, P.O. Dindigul.	below 40	Fitting, Turning, Welding, CARPENTRY, Cloth weaving, mat-weaving	3 to 5 yrs	Rs. 60 p.m.	Hostal for 25 at Rs. 60 p.m. (number limited by the church).
LEPROSY (Males only)						
1.	Swedish Red Cross rehabilitation Industries, B5&B6 Industrial Colony, Katpadi Extension (N.A. Dt.,)	18 to 28	General workshop practice in drilling, tapping, grinding, lathe work, milling, welding, sheet metal work, fabrication of steel	3 yrs.	Rs. 60 p.m. I yr Rs. 75 p m. II yr Rs. 80 p.m. III yr & free lunch	Lodging facility for 36 persons share in rent and electricity.

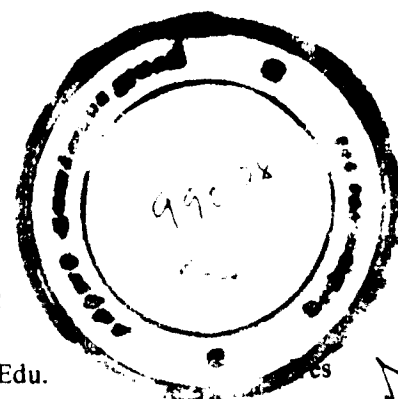
VOCATIONAL AND REHABILITATION CENTRES FOR BLIND

Sl. No.	Name of Institution Address	Admission Age range	Details of Training type OFFERED	Duration of course	Stipend	Other Remarks.
1.	Light Engineering Project C-22, Industrial Estate, Guindy,	18 to 40	Basic Engineering Work shop-Filing, cutting, hack sawing, drilling punching, tapping, turning and revolving press operations & assembly work.	6 months	Pocket money Rs. 2 per weeks	Free hostel facility available
2.	Book binding Unit, Industrial Training Institute Compound, Guindy, Madras-32	18 to 36	Book Binding	6 months	Rs. 50 p.m.	
3.	Bishop Diehl Rehabilitation Home for the Blind, Tranquebar house, Tiruchirapalli	Any age	Handicrafts	No specific period	Pocket money provided	
4.	Tamil Nadu Rehabilitation Centre for the Blind, Madurai-20.	18 to 40	Mobility & Orientation perpetual motor skill training programme, psychological services, counselling, tailoring, canework and weaving.	6 months	Rs. 40 p.m.	
5.	SOCIETY FOR AID-ING the Handicapped 35/A, Chamiers Rd., Madras-28	15 to 50	Cane work, Tailoring, Knitting, Embroidery,	No specific period.	Rs. 30 p.m.	limited hostel facility available.
6.	Society for the welfare of the Handicapped, 24, Halls Rd., Egmore, Madras-8. Conducting sheltered workshop for Blind women at Thiruvanniyur	Middle Aged	Chairs Re-caning, Knitting, Basket Making, Mat weaving, Cloth weaving.			

FOR THE ORTHOPAEDIC

1 Iswari Prasad Dattatreya, Orthopaedic Centre Andhra Mahila Sabha, No. 3, Adyar Bridge Road, Madras-28. (Tution Free)

Edu.



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