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MAKE TAMIL NADU "GREEN"

AN APPEAL

Trees play a very vital role in our economy. Besides providing timber, fuel wood, fruits and various other indispensable items, they help preventing environmental pollution. Our country falls in the deficit zone so far as forests are concerned with barely 23% and in Tamil Nadu it is only 17% of total geographical area under forests.

For over two decades now Vanamahotsava has been celebrated as an annual festival. But the achievement has not been much. Nehruji, our beloved leader, has several times expressed grave concern at the cutting down of trees in the country. He significantly pointed out "though it is easy to cut down a tree, it takes a generation to grow one." So, a vigorous drive for planting trees and protecting them should be launched.

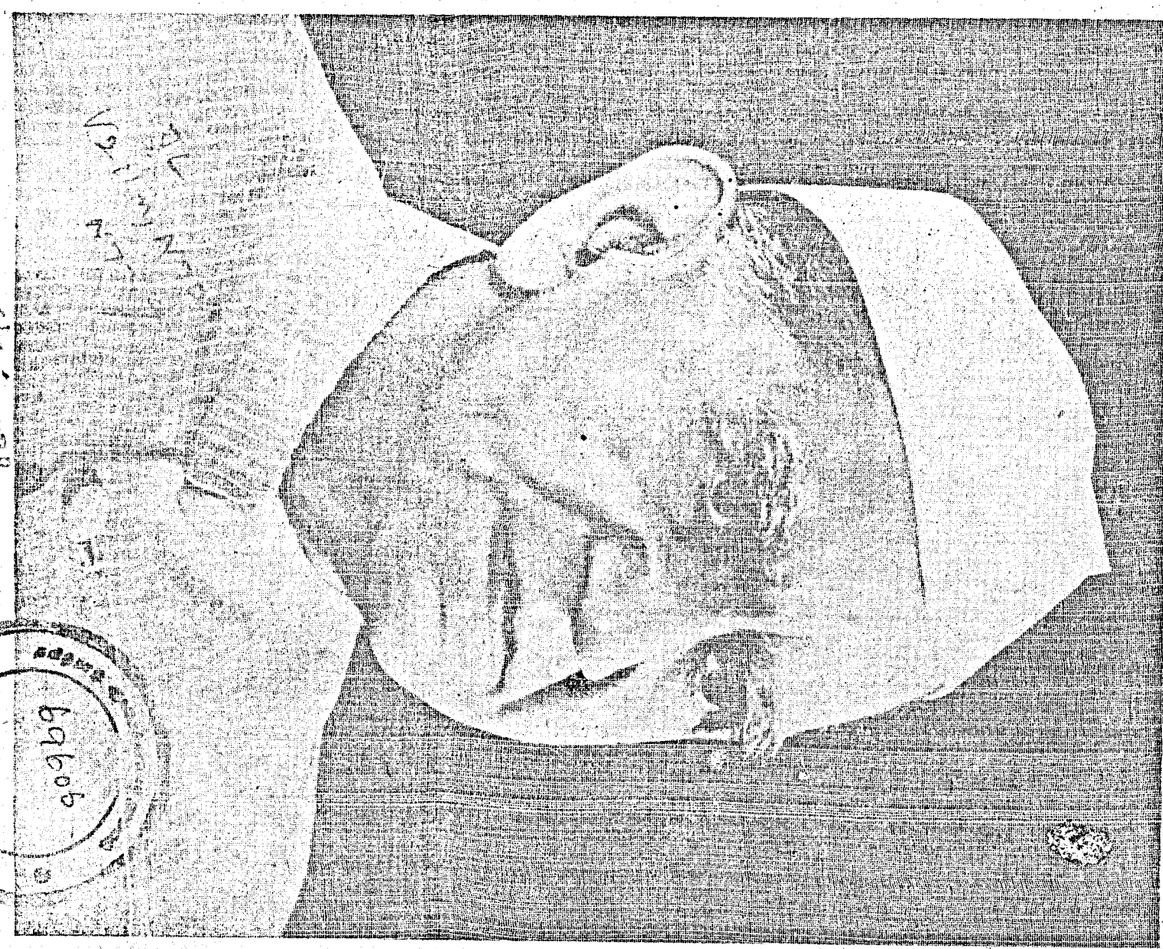
Every citizen young and old, men and women, would like to ensure that our country prospers. It is, therefore, possible, given the will and determination, to execute time-bound programme to re-establish vegetation on a substantial portion of such denuded areas.

An extent of 51,849 hectares of Panchayat lands and other unutilised Government waste lands has been brought under plantation. In addition 10,535 hectares have been planted along canal, and river banks mostly in Thanjavur, Tiruchirapalli and Tirunelveli Districts. Besides these Governmental efforts, pub[illegible] institutions and local bodies [illegible] involve th[illegible] this [illegible]

Corporations and Municipalities may have some existing arrangements for raising nurseries and supply of seedlings to the public. If they are not there, at present, organisations concerned should be persuaded to start nurseries and they should be actively associated in the tree planting programme in urban areas. Other organisations like Agri-Horticultural Society, which are already involved in tree planting work, should be associated. Apart from this, the Forest and Agricultural Departments could establish nurseries in the cities and larger towns. The Forest Department can raise mainly seedlings of trees, known for the beautiful flowers or large and well-shaped crowns, while Agricultural Department may concentrate on fruit yielding trees like Mango, Guava, Lime, etc. A large variety of species can be grown with a view to give beauty to the landscape and also for their utility as timber, fuel, etc. Species will be chosen according to the soil and climate conditions of the localities. It is vital, therefore, that we plant well and wisely the right species in right places and at right time. Tree planting will incidently help to provide beauty and colour to the country side.

A detailed scheme has been drawn up by Government to make this year's tree planting programme a grand success. So, I earnestly appeal to the people of Tamil Nadu to extend their unstinted co-operation and to plant trees with renewed enthusiasm and thus make Tamil Nadu "Green."

Demise of Thiru FAKHRUDDIN ALI AHMED, President of India



Born : 13-5-1905 **Died : 11-2-1977**

On the demise of President Fakhruddin Ali Ahmed on 11-2-1977 the [illegible] resolution of the Executive Committee of the Government of Tamil Nadu was published in the Government Gazette Extra-ordinary :

"The Governor and the Members of the Executive Committee of the Government of Tamil Nadu record their deep sense of sorrow at the sudden demise of the President of India, Thiru Fakhruddin Ali Ahmed and wish to convey their sincere and heartfelt condolences to Thiruvathi Fakhruddin Ali Ahmed and family and the Government of India."

Tamil Arasu

Vol. : VII FEBRUARY 1977 Issue : 3

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ACKNOWLEDGMENT

The articles appearing on pages 7 to 33 in this issue are published by kind courtesy of "Economic Times" which published them in the form of a supplement on 2-3-'77.

THE LATE THIRU FAKHRUDDIN ALI AHMED

A FLOWER OF INDIAN SECULARISM

Thiru Fakhruddin Ali Ahmed was born at Delhi on May 13, 1905. His father, the late Col. Z. A. Ahmed, was an Assamese originally belonging to Kakharihat in Gollaghat Sub-Division of Assam.

Thiru Fakhruddin Ali Ahmed received his early education in Government High School at Gonda (UP) and in the Government High School, Delhi, from where he passed the matriculation examination of Punjab University in 1921. He joined St. Stephens' College, Delhi but soon proceeded to England where he was admitted to St. Katherine's College of Cambridge University. Thiru Fakhruddin Ali Ahmed graduated from Cambridge in 1927 in history tripos. After completing the law course, he was called to the bar from the Inner Temple, London in 1928.

On returning to India, Thiru Ahmed got himself enrolled as an advocate of Punjab High Court in undivided India. He went to Assam with his father in 1928 and remained there most of the time except for a brief period when he practised law in Calcutta. He joined the Indian National Congress as a primary member in 1931. In 1935, he successfully contested the Assembly Election from a reserved Muslim seat in the teeth of opposition from Sir Md. Saadullah, who was then in power in Assam.

Since 1936, he had continuously been a member of the Assam Pradesh Congress Committee, Working Committee of the Assam Pradesh Congress Committee and the AICC except for short breaks. He joined the Assam Government in the First Congress Cabinet (Bardoloi Cabinet) in 1938-39 as Finance and Revenue Minister. His tenure of office in the Bardoloi Cabinet was memorable for some radical measures. These included giving 50 per cent land revenue remission, imposing tax on agricultural income and tapping other sources of revenue which helped the State to more than double its resources.

Along with late Gopinath Bardoloi, he resigned from the Government and offered individual satyagraha in 1940 as commended by Mahatma Gandhi. He was imprisoned for one year. Soon after his release, he was again taken a security prisoner and was detained for a continuous period of three and half years before being released in April, 1945. In the 1945 election, when he stood for a seat in the State Assembly, all the might of the Muslim League was marshalled against him and he was defeated by a Muslim League candidate. In 1946, he became Advocate General of Assam.

He became a member of the Congress Working Committee soon after and in 1952-53 he became a Congress Member of Rajya Sabha. In 1955, he led an Indian Lawyers Delegation to the U.S.S.R.

In 1957, he went to the United Nations as an Indian delegate.

In 1957, he was again elected to the Assam Assembly by an overwhelming majority and the following year he joined the State Cabinet holding charge of the portfolios of Finance, Law, Community Development, Panchayat and Local-Self Government.

In 1962, he was re-elected to the State Legislature and continued to remain a Minister holding charge of all the previous portfolios, except Local Self-Government. He had been a member of the All India Congress Working Committee and also member of Parliamentary Board since 1964.

In 1964, on an invitation from the United States, he paid a visit to the United States and spent about five weeks there touring different parts of the country. He returned from there *via* Japan and Hongkong. In 1965, he went to Malaysia, Kualalumpur as a Representative of the Government of India to participate in the celebration of their Independence Day and Inauguration of the International Mosque and Airport at Kualalumpur.

In 1966, he was elected to Rajya Sabha. On 29th January, 1966, he was sworn in as Minister of Irrigation and Power in the Central Cabinet and on the 14th November 1966, he became Union Education Minister.

In the General Elections in 1967, he was elected to Lok Sabha from the Barpeta Constituency in Assam. On March 13, 1967, he was appointed Cabinet Minister for Industrial Development and Company Affairs.

As the Minister of Industrial Development and Company Affairs, a new Industrial Policy aimed at providing accelerated growth, wider base for small and ancillary industries, special attention to backward areas and selective foreign collaboration was laid down by him. He piloted monopolies bill and introduced patents bills. Thiru Ahmed visited U.K., West Germany, Bulgaria, Hungary, France, Italy, U.A.R., U.S.S.R., Ceylon and Iran as Minister for Industrial Development and Company Affairs.

In 1969, Thiru Fakhruddin Ali Ahmed represented India at the Conference of Heads of Arab States at Rabat.

On June 27, 1970, Thiru Ahmed took over as Minister for Agriculture. He was reassigned the same portfolio after having been elected to the Lok Sabha in 1972 General Elections from his old constituency in Assam.

He went to attend FAO's Conference to Australia as a special guest in September, 1970 and visited Japan, Philippines and Hongkong. He led the Indian Delegation to the FAO Council's Sessions in Rome in November, 1971 and November, 1973.

During the large scale influx of refugees from Bangla Desh following the Pak tyranny in that region and subsequent attack by that country on India, Thiru Ahmed visited the Lebanon, Iraq and UAR to explain India's stand and the problems faced by her in its wake.

A DYNAMIC AND DEVOTED PUBLIC WORKER

Thiru Ahmed was the senior-most member of the Political Affairs Committee of the Cabinet and in that capacity he had been associated with all the political decisions.

Thiru Fakhruddin Ali Ahmed was a keen sportsman. He had been the President of the Assam Football Association and Assam Cricket Association for many years and Vice-Chairman of the Assam Sports Council and was connected with many other social institutions of the State. He was recently re-elected President of the All India Lawn Tennis Association.

Thiru Fakhruddin Ali Ahmed was elected as the fifth President of India on August 20, 1974 having polled votes valued at 7,65,587 and was sworn in on August, 24.

As President he undertook tours in a number of countries including Hungary and Yugoslavia in September, 1975, Indonesia in May 1975, Egypt in December 1975. Iran in June 1976 and Iraq and United Emirates in October 1976. He received rousing welcomes wherever he went and was greatly instrumental in fostering goodwill and cooperation between these countries and our Nation.

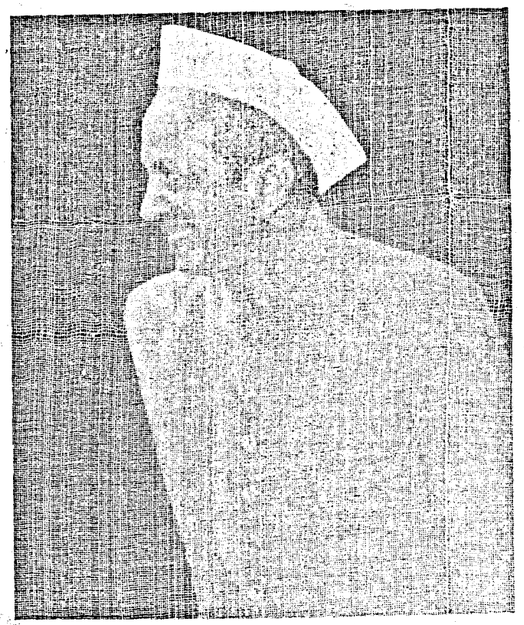
He left on a goodwill visit to Malaysia, Philippines and Burma on February 6, 1977. But he had to cancel the latter part of his engagements as he was taken ill and returned to New Delhi on 10th February, 1977.

Thiru Ahmed was the President of the country during a momentous period of the Nation's Social, Economic and Political resurgence.

His contribution to the Nation during the freedom struggle and as a sincere, dynamic and devoted public worker since attainment of Independence will be remembered for ever.

The late President leaves behind his devoted wife, Begum Abida Ahmed, whom he married in 1945 and two sons and a daughter.

Thiru B. D. JATTI Sworn in as President of India



Thiru B. D. Jatti Vice-President ,assumed charge of acting President of India, on 11-2-1977 in pursuance of Article 65 (1) of the Constitution.

The oath of office was administered to Thiru Jatti by Thiru Justice M. H. Beg, Chief Justice of India at a ceremony in Ashoka Hall of Rashtrapati Bhavan, which was attended by the Prime Minister and other members of the Council of Ministers, Cabinet Secretary, the three Chiefs of Staff and senior officials.

Thiru Basappa Danappa Jatti, born on September 10, 1912, at Savalgi, Bijapur District, Mysore, was educated at the Bijapur Government High School and the Rajaram College, Kolhapur, from where he got his Bachelor of Arts Degree and later on got the LL.B. Degree from the Sykes Law College, Kolhapur.

Thereafter, Thiru Jatti practised Law at Jamkhandi and became a Minister in the Jamkhandi State which he headed as its Chief Minister later on. He was nominated as M.L.A. to the Bombay Legislative Assembly where he represented the merged areas of the Mysore State (Now known as Karnataka State). He became Parliamentary Secretary to Thiru B. G. Kher, the then Chief Minister of Bombay, and later on became the Deputy Minister of Health and Labour in his Ministry in 1952.

After the reorganisation of the States, Thiru Jatti became an M.L.A. in the Mysore Legislative Assembly. He was Chairman of the Land Reforms Committee. From 1958 to 1962 he was the Chief Minister of the Mysore State. He was re-elected as an M.L.A. from the Jamkhandi constituency for the Mysore Legislative Assembly for the period 1962-67. Thereafter, he became the Minister of Finance 1962-65 and the Minister for Food, 1965-67.

Thiru B. D. Jatti took over as the Lt. Governor, Pondicherry on October 14, 1968, and assumed the Office of the Governor of Orissa on November 8, 1972, which he resigned on August 20, 1974. He was elected Vice-President of India on August 27, 1974, which office he assumed on August 31, 1974.

MOMENTOUS YEAR FOR NATION, CRITICAL YEAR FOR STATE

* * *

Governor's Review underlines Commitment to National Programmes

The year we passed through, has been a momentous one for the Republic. Our Constitution was amended with the objective of speeding up our progress towards socialism ; and to emphasise this commitment, our country has been formally proclaimed to be a Sovereign, socialist, secular democratic Republic.

This amendment renews the pledge of the nation to uphold the principles of Gandhi and Nehru, principles to establish which, in the words of poet Namakkal V. Ramalingam Pillai, our people carried through a prolonged struggle without sword, and bloodshed. These principles, embodied in the concept of socialism, aim at building an egalitarian society, which would do away with exploitation and poverty, and bring about equal rights and opportunities for all.

Our unhappy inheritance left us with a stratified society with large sections of backward classes and Harijans, and our efforts to liquidate this burden and bring up these sections of population left behind in the historical evolution to the same level as the forward sections of the community, have gathered momentum in the recent times. Land reforms and Minimum Wages Act which are among two important points of the 20-point programme are designed to bring about this transformation in our rural areas.

This process has been further reinforced by the coming into force of the Civil Rights Protection Act on November 19, 1976. This Act now makes practising of untouchability a cognisable offence, and prescribes various stringent measures which should contribute to end this age-long and sinful practice. **A man's birth should be of no relevance to measure his worth; but only his contribution to the social well-being.** Similarly, steps have been taken to remove the traditional disparity between men and women. Their wages have been equalised, and the practice of dowry which was a slur on womanhood, is being massively assailed.

Drought & Flood

While these momentous changes are taking place in our national life, in Tamil Nadu, we passed through a difficult year. Many districts of the State experienced very severe drought for the second and third years, and the first few months period was one of great concern and effort, to alleviate drought conditions and use drought relief measures to create permanent assets for the community. Though the south-west monsoon failed us, the north-east monsoon was beneficient and brought relief from drought conditions in most of the districts.

However, the same beneficient monsoon caused disastrous floods in the city of Madras and sorrounding areas of the Chingleput district. The floods rendered thousands of people homeless, and also damaged severely, industrial machinery, leaving thousands of workers temporarily jobless. **Rescue work was undertaken by the fire services, police, navy and other armed services and our brave fishermen in particular, on a vast scale. But for their gallantry and devotion to duty, the damage and loss of life would have been greater.** This was followed by relief measures on a scale not attempted before. Apart from the Services, many voluntary organisations, charitable groups and individuals rendered outstanding service in organising relief and raising funds for the State Relief fund. Our thanks are due to all those individuals and organisations. The Government is continuing the relief measures with due attention to avoid the mistakes of the past.

In view of the failure of south-west monsoon and scarcity of water in our reservoirs, we expect a shortfall of 10 lakhs of tonnes against the targetted 84 lakhs of tonnes for 1976-77. However, in view of the comfortable carry over stock position and the creation of the Southern Rice Zone, we do not anticipate any difficulty on the food front.

In spite of these difficulties, the State is implementing in 1976-77, an annual plan of Rs. 229 crores which is more than Rs. 60 crores higher than that of the 1975-76 outlay. It is my hope that our plan outlay for 1977-78 will be even higher. The State is today well set to implement the Five Year Plan outlay both in physical and financial terms.

This year, the power position was more comfortable than last year, in spite of tremendous shortfall in hydel power production. This was mainly due to better performance of our thermal stations at Ennore and Neyveli. Next year, we expect Tuticorin power-station to come on stream.

The State has been in the forefront of implementation of the 20-point programme, and in fulfilling the targets of family planning. We have brought down the birth rate to 29 per thousand, at present the lowest in the country.

Debt Relief

We may look back with satisfaction to a number of other major achievements. Debt relief which liberated millions of the poor from the thraldom of the money-lender, was a landmark in our efforts to remove poverty. Simultaneously, a drive has been instituted to bring more people under the co-operative fold. At present, about 33 lakhs of families have been enrolled.

Opening of the Kalrayan hills, liberation of thousands of tribals living there, and initiation of an integrated development programme, constituted the closing chapter in our efforts to encompass the entire State under modern developmental administration.

The introduction of Tamil as the language of the subordinate courts on November 14, 1976 fulfils the long-felt need of bringing administration of justice within the reach of understanding of the common man.

Even as these efforts at economic and social development were intensified, steps have been taken for administrative development as well, to sensitise the administrative machinery to respond promptly and effectively to the needs of the people, to eradicate corrupt practices and to eliminate, harassment at lower levels. Administrative development requires long and sustained efforts, and we have made a good beginning.

The past year has been a year of commitment to national programmes of economic development increase in production, stabilization of prices and many other measures of social transformation. We now move on to another year, in which I trust, we will make a disciplined effort towards further progress of this great country of ours.

THE MASSIVE DROUGHT RELIEF OPERATIONS

—oOo—

Rs. 27 Crores Spent in 4190 Villages Spread over 13 Districts

The State Government had to tackle a situation of drought over a large part of the State during 1976. The north-east monsoon was highly deficient during 1975. Coming on the heels of deficient rainfall in 1974, this resulted in severe drought conditions.

The situation was made worse by deficiency in south-west monsoon rainfall in 1976 in the areas of the State which normally receive rains during that monsoon. Catchment areas in Kerala and Karnataka feeding the major irrigation sources (Cauvery, Periyar-Vaigai, Tamraparani) of Tamil Nadu also received sparse rainfall. As a result, irrigation facilities were severely affected, requiring relief operations in certain irrigated areas of the State. **In all, relief measures had to be taken up in 4,190 villages spread over 13 districts of the State (all the districts excepting Madras and Chingleput). The population affected was about one crore, roughly a fourth of the population of the State. To meet this situation, a massive drought relief programme involving an expenditure of Rs. 27 crores was launched.**

The programme aimed at supplying drinking water and generating employment opportunities in the drought-affected areas. The programme was executed on a war footing and was kept under constant review at the highest level. The Governor and his Advisers frequently toured the drought-affected areas and took on-the-spot decisions for affording relief. The Prime Minister's tour of the drought-affected areas during September, 1976 was of immense help in reassuring the drought affected population and boosting morale.

The supply of drinking water in the drought-affected area was given first priority at a total of about Rs. 12 crores. The following schemes were taken up : (*a*) A massive bore well programme involving the sinking of 6,700 bore wells provided with hand pumps was put through. The magnitude of this programme can be appreciated from the fact that, in about 8 months time, as many bore wells were sunk in the State as in the last five years. This programme helped in tackling the water scarcity effectively. (*b*) There are certain areas of the State where the sub-soil water is saline. To help such areas, piped water supply schemes were taken up. An amount of Rs. 3 crores was provided for such schemes in Tiruvadanai taluk of Ramanathapuram district, Ottapidaram, Tuticorin and Vilathikulam areas of Tirunelveli district and Sethybavachatram panchayat union area of Thanjavur district. These schemes involved tapping of a good drinking water source at some distance from the villages and carrying the water to the village through pipes. (*c*) The bore-well programme was supplemented by a programme of deepening drinking water wells and ponds (known as ooranies) in Tamil Nadu. About 7,350 wells and 470 ooranies were deepened.

By

K. V. RAMANATHAN, I.A.S.,

Secretary,

Revenue Department.

The drought led to large scale unemployment among agricultural labourers. To generate alternative employment, a large number of works under medium and minor irrigation, soil conservation, afforestation and fair weather roads sectors were taken up at a cost of Rs. 15 crores. **The number of irrigation, road and percolation pond works taken up was about 4,600. In addition, contour bunding and afforestation works were taken up in about 35,000 hectares.** Preference was given to irrigation, soil conservation and afforestation works. Road works were given the last priority. The programme aimed at creating, to the extent possible, permanent assets while also generating employment all over the drought-affected area. The employment generation programme generated about 150 lakhs man-days of employment during April to December, 1976. The number of persons employed varied from time to time, the maximum being about 1.75 lakhs daily during September 1976.

Revenue Remitted Rs. 2.18 Crores

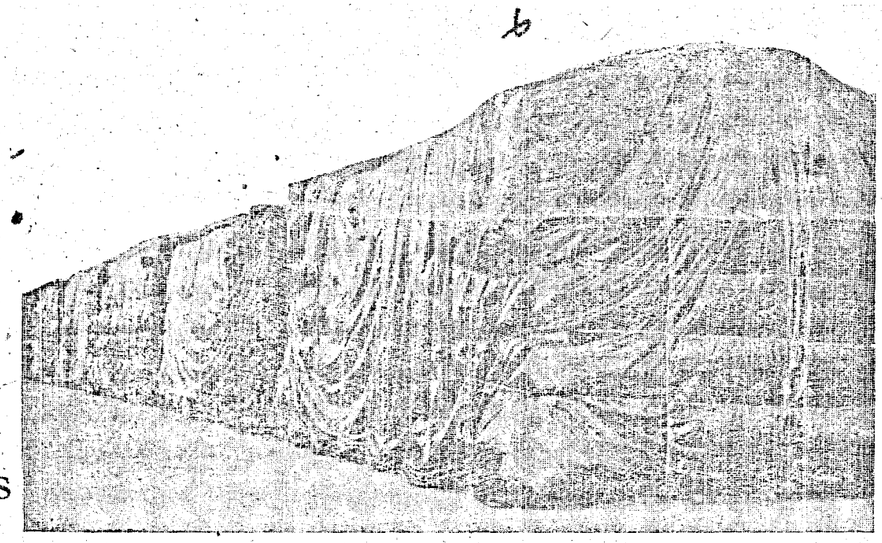
Loan Collection deferred Rs. 6.62 Crores

To afford relief to ryots whose crops were affected by drought, remission and postponement of Government dues were ordered on the basis of field-by-field inspection of crops. An amount of Rs. 2.18 crores was remitted and collection of loan dues amounting to Rs. 6.62 crores was postponed to the next year.

Central assistance was sought to meet the very large expenditure on the programme and the Centre extended advanced plan assistance of Rs. 15.70 crores.

Thanks to the massive relief programme, the distress caused by the drought was substantially mitigated. There was no report of any case of starvation. The poeple of the State, who are well known for their endurance, faced the drought situation bravely. Many voluntary agencies also participated in the drought relief programme by taking up schemes like supplying fodder for cattle at fair prices and drinking water through lorries. Thanks to the whole-hearted co-operation of the people, the drought can be said to have been tackled effectively.

Dynamic Food Policy Pays Dividends



Cover and Plinth storage of rice

A pragmatic and dynamic food policy, with a two-pronged drive to maximise procurement on the one hand and to implement a well-organised and responsive system of public distribution on the other, helped Tamil Nadu to tackle, with significant success, a difficult food situation that had been aggravated by two years of successive drought.

Over 5.5 lakhs tonnes of rice were procured during 1976, exceeding the targets fixed for the state by the Agricultural Prices Commission. A significant feature of this procurement was that it was done directly by government sponsored agencies operating purchase centres in even the remotest villages, thus eliminating the scope for malpractices by private middlemen, and ensuring that the full benefit reached the producers.

By

K. DIRAVIAM, I.A.S.

Secretary, Food Department

The Tamil Nadu Civil Supplies Corporation, an undertaking of the state government, was in charge of procurement and the bulk of the work was done by it. Co-operatives and the Food Corporation of India also procured on behalf of the state government. Even the movement of procured stocks was done entirely by the Tamil Nadu Civil Supplies Corporation without entrusting it to the private millers. After getting the paddy hulled in the 13 modern rice mills operated by the Civil Supplies Corporation and through private millers appointed as hulling agents, the Corporation moved the stocks to the various storage points spread all over the state.

The entire population of Tamil Nadu is covered by family cards and although there is no statutory rationing in any of the areas, a well knit public distribution system is maintained to cater to the needs of the public mainly through the co-operatives, and the retail points of the Corporation itself.

Another noteworthy feature of the public distribution system in Tamil Nadu is that in the entire state, except for a portion of the hilly district of the Nilgiris, public distribution is in the hands of only co-operatives, panchayats and the government sponsored Civil Supplies Corporation. Against nearly 9,500 retail points run by these agencies, only 18 are run by private retailers appointed as authorised retailers and that too only in Nilgris district. This has helped the government to maintain at peak level of efficiency the public distribution system, facilitating extension of coverage and pumping in of stocks whenever there was a problem of availability of stocks or prices in the open market tended to increase.

A chain of stores were opened by Civil Supplies Department to stabilise prices.

The year 1976 was the year in which a major breakthrough was achieved by the constitution of a larger rice zone comprising the three southern states of Tamil Nadu. Andhra and Karnataka. This larger zone which came into effect from October 15, 1976 has facilitated the free flow of rice between the three states. In the few months since the constitution of this zone, nearly 60,000 tonnes of rice were moved into Tamil Nadu. Simultaneously, with the constitution of the larger zone, all inter-district restrictions on the movement of paddy and rice in the entire State of Tamil Nadu were removed, thus enabling the unrestricted movement of rice from surplus producing districts to the deficit consuming districts. This has helped to restore the equilibrium both in respect of availability of stocks and the price levels. The producer in the surplus districts now commands a larger outlet and better prices for his produce and the consumer in the deficit district is enjoying the benefit of lower prices, thanks to the free flow of rice. The removal of inter-district restrictions has resulted in the prices of rice going up slightly in the surplus districts and going down considerably in the deficit districts. **The overall price levels of rice in the state are now approximating to a level that is reasonable to the consumer while at the same time is remunerative to the producer.** In 1975, prices of medium boiled rice, which is the item of mass consumption in Tamil Nadu, had touched Rs. 4 per kilo in the deficit districts. The comparable price level in January 1977 was Rs. 1.60 to Rs. 2.15 per kilo. While marginal fluctuations and variations in price levels are unavoidable, depending on seasonal factors and also variety preferences, an in-depth analysis of the price trends clearly reveals that the difference between the lowest price of rice and the highest price of rice as it obtained in 1974 and 1975 considerably narrowed down in 1976. The present trends are also very encouraging and lead one to expect confidently that the phenomenon of soaring prices of rice is a thing of the past.

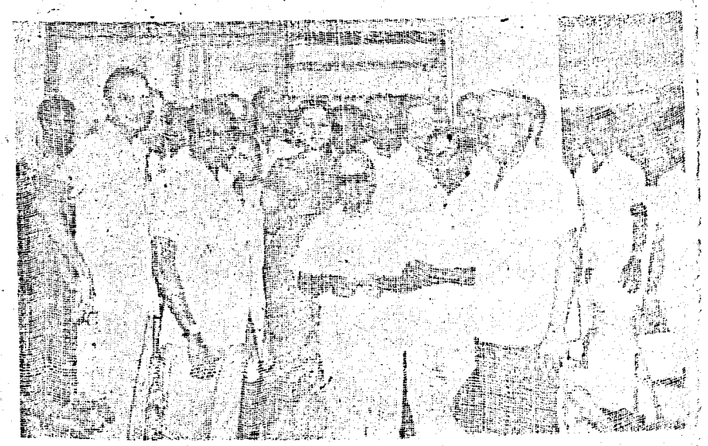
Tamil Nadu opened 1977 with a considerable reserve of rice stock. With the free and easy availability of rice in the open market, large arrivals of rice from the surplus state of Andhra, the removal of irksome inter-district restrictions on the movement of paddy and rice inside the state and the declining price trends of rice, Tamil Nadu can confidently see the year 1977 through, without any major difficulty on the food front. The Centre has also given an assurance of generous assistance if and when the situation warrants it. **The declining off-take under the public distribution system, noticed during the last few months, is a clear and convincing indication of the free and easy availability of rice in the open market and an eloquent testimony to the success of the Centre's food policy and the larger rice zone.** The government, however, proposes to maintain the public distribution system as an insurance against any untoward situation of artificially created scarcity or manipulated price increases.

Tamil Nadu has traditionally a preference for rice as the staple grain of mass consumption. Even so, it is gratifying to note that the consumption of wheat is also spreading not only in the urban centres but in the rural areas also. Following the advice of the Centre, the state government has recently lifted all controls on the prices and extraction percentages of wheat products. This policy, coupled with the liberal allotment of wheat for crushing by roller flour mills, of which there are 28 in Tamil Nadu, has led to free availability of wheat products at reasonable prices.

The concerted efforts of the government in maintaining the public distribution system in respect of rice, wheat and levy sugar, and the constant vigil exercised by it in monitoring the prices of other essential commodities have created an atmosphere of confidence and plenty. The prices of groundnut oil had risen during the last few months. The state government has brought the situation under control not only by enforcing various measures to discipline the trade but also by arranging for purchases from other states and organising distribution in large urban centres at reasonable prices.

Tamil Nadu is one of the pioneering states in providing for a low cost janatha meal at a statutorily fixed price of Re. 1. The Tamil Nadu Catering Establishments (Fixation & Display of Prices of Foodstuffs) Order has prescribed the maximum prices of nine commonly consumed dishes in hotels, including coffee and tea. Besides these measures, efforts are also being taken to persuade voluntary organisations to run canteens where nutritive food at reasonable prices will be made available. The low-cost canteens run by the Guild of Service - the Annapoorna - run by the All India Women's Food Council and the Amudham canteen run by the Avanashilingam Home Science College, Coimbatore, have been doing valuable service in providing nutritious food at low cost. The vigorous enforcement of Tamil Nadu Essential Commodities (Display of Stocks, Prices and Maintenance of Accounts) Order and the packaged Commodities (Regulation) Order has been widely welcomed by the public and has had a healthy effect on maintaining supplies of essential commodities and holding the price line.

Opening of Amudham Canteen by Civil Supplies Department



Developments In Agriculture

NEW STRATEGIES TO SURMOUNT MONSOON FAILURES

Agriculture in Tamil Nadu contributes nearly 43 per cent of the net domestic product of the state. The economic situation of this state is intimately linked up with the success of its agriculture which in turn is influenced by the seasonal conditions.

Of the gross area of 7.65 million hectares of cultivable land in the state, 48 per cent of the area is under irrigation. The remaining area supporting dry sown crops largely depends on the monsoon rains, especially the northeast monsoon. The irrigated areas comprise those fed by river systems, tanks and wells. Adequate and timely monsoons are, however, crucial for the success of farming in the irrigated areas.

The areas under the principal crops in the state are as follows (in lakh hectares): Rice. 26.41, millets 19.89, pulses 7.07, sugar-cane 1.55, cotton 2.99 and groundnut 12.53.

The principal monsoon of the state is the north-east monsoon between September and December but inflows into the hydel reservoirs of the state during the south-west monsoon (June-September) largely decide the success of agriculture in the river basins. The complete failure of the south-west monsoon during 1976 in the catchment areas of the hydel reservoirs and the erratic precipitation in the other regions in the state, besides adversely affecting paddy cultivation in the river valleys, delayed the sowings of the dry land crops as well. The overall crop prospects have, however, largely improved because of the good north-east monsoon.

The department of agriculture formulated contingency plans for implementing alternate cropping programmes for different regions to meet the situation arising out of the failure of the south-west monsoon and the belated onset of the north-east monsoon in certain parts of the state. The formulation of alternate cropping strategy, the intensive publicity given to this by the field staff and the wide adoption of the new crop patterns by the farmers served in a large measure to reduce crop losses arising out of the failure of the south-west monsoon. In the river valley system affected, the traditional rice crop was substituted by light duty crops such as millets and pulses in large-extents. In the deltaic district of Thanjavur, by switching over to dry sown paddy and other light duty crops like maize, ragi and pulses in the Grand Anicut canal area, the grim prospect of large areas lying fallow was avoided. The benefits of this strategy have been two-fold—it minimised reduction of cropped area and sustained employment opportunities for rural labour.

In certain dryland tracts of this state, double cropping practices were introduced in areas where only single crops are normally raised by switching over to crop varieties of shorter duration and by slight adjustment of the sowing time. The field staff were also able to successfully introduce dryland cultivation in large tracts especially in the southern districts, of hybrid and high-yielding millets varieties in the place of the traditional varieties with low grain yields. The success registered in this field promises to be a significant breakthrough in dry land farming.

Emphasis has been laid on stepping up the area under groundnut during the rabi season from the normal 5 lakh acres to 7 lakh acres.

Several measures were implemented to relieve and mitigate the problems of drought in the drought-prone areas of the state. One important new measure was the reclamation of sand cast areas in Rajapalayam taluk where 2,572 acres cast with sand were reclaimed within 45 days. The drought relief works, besides creating good employment potential for agricultural labour in rural areas, were effective in countering the adverse effects of prolonged drought in these areas.

Another useful item taken up to help the dry land farmers was the production and distribution of mechanical seed drills free of cost. For the first time under the drought relief work 1,000 seed drills were manufactured using the village smith and carpenters and made available for dry land farming. The utility of the implement for swiftly completing dry land sowings in large areas to take the maximum advantage of the available moisture was widely acclaimed.

The following are the salient features of the various schemes complated during the period under review :

Soil Conservation	78,515 acres
Percolation ponds	226 Nos.
Land reclamation in sand cast areas	2,572 acres
Desilting wells	120 Nos.
Distribution of seed drills	1,012 Nos.

The progress made under various minor irrigation programmes is as follows: private tube wells 2,631, boring wells 1,692, filter point tube wells 2,491 and deepening of wells 1,078.

Input distribution

The requirements of various production aids such as seeds, fertilisers, pesticides and crop credit were made available through the network of the agricultural depot and by concerting with other agencies. In spite of the reduction in crop coverage under paddy, the offtake of fertilisers during the current year compares favourably with the offtake during the same period of last year. Pests and diseases incidence was continuously monitored and appropriate prophylactic and control measures were taken. Brown plant hopper which was a menace throughout the country showed its ugly head in our deltas also but due to our prompt action we were able to nip it in the bud. During the past nine months there has been no serious pest or disease danger in any part of the state.

Production prospect

It is noteworthy that the state registered an all-time high in rice production (59 lakh tonnes) [illegible]er unit productivity of 2,20[illegible]g-ha during 1975-76. **The crop [illegible]oduction goals for the current year are as follows: Rice 63 lakh tonnes, millets 18 lakh tonnes, pulses 2.90 lakh tonnes, sugar-cane (gur) 13.90 lakh tonnes, oilseeds 13.43 lakh tonnes and cotton 3.50 lakh bales.**

By

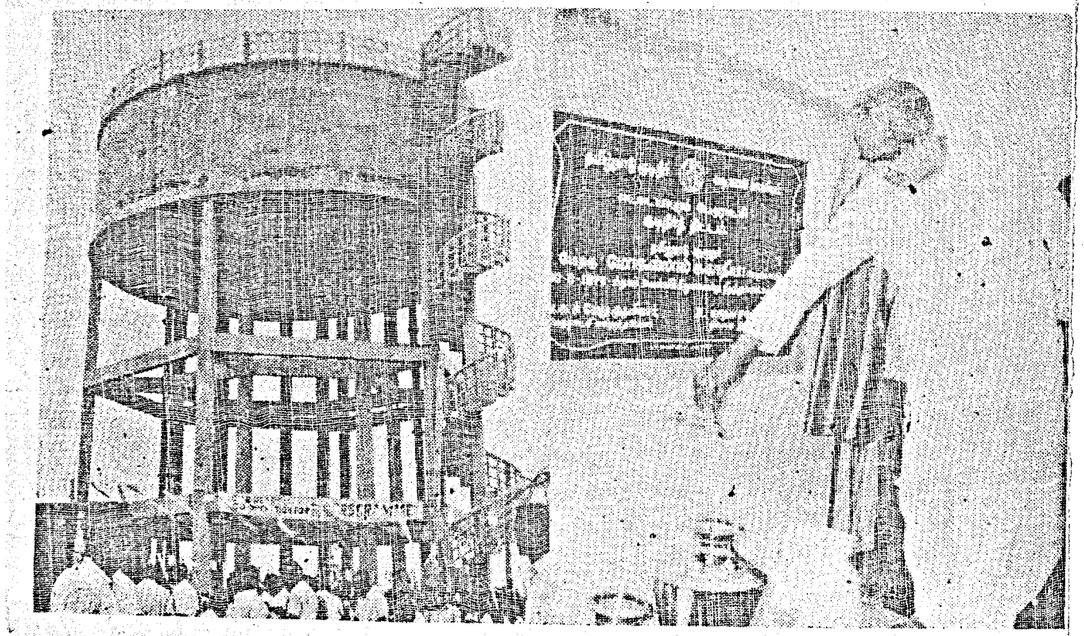
K. Venkatesan, I.A.S.,

Secretary,

AGRICULTURE DEPARTMENT.

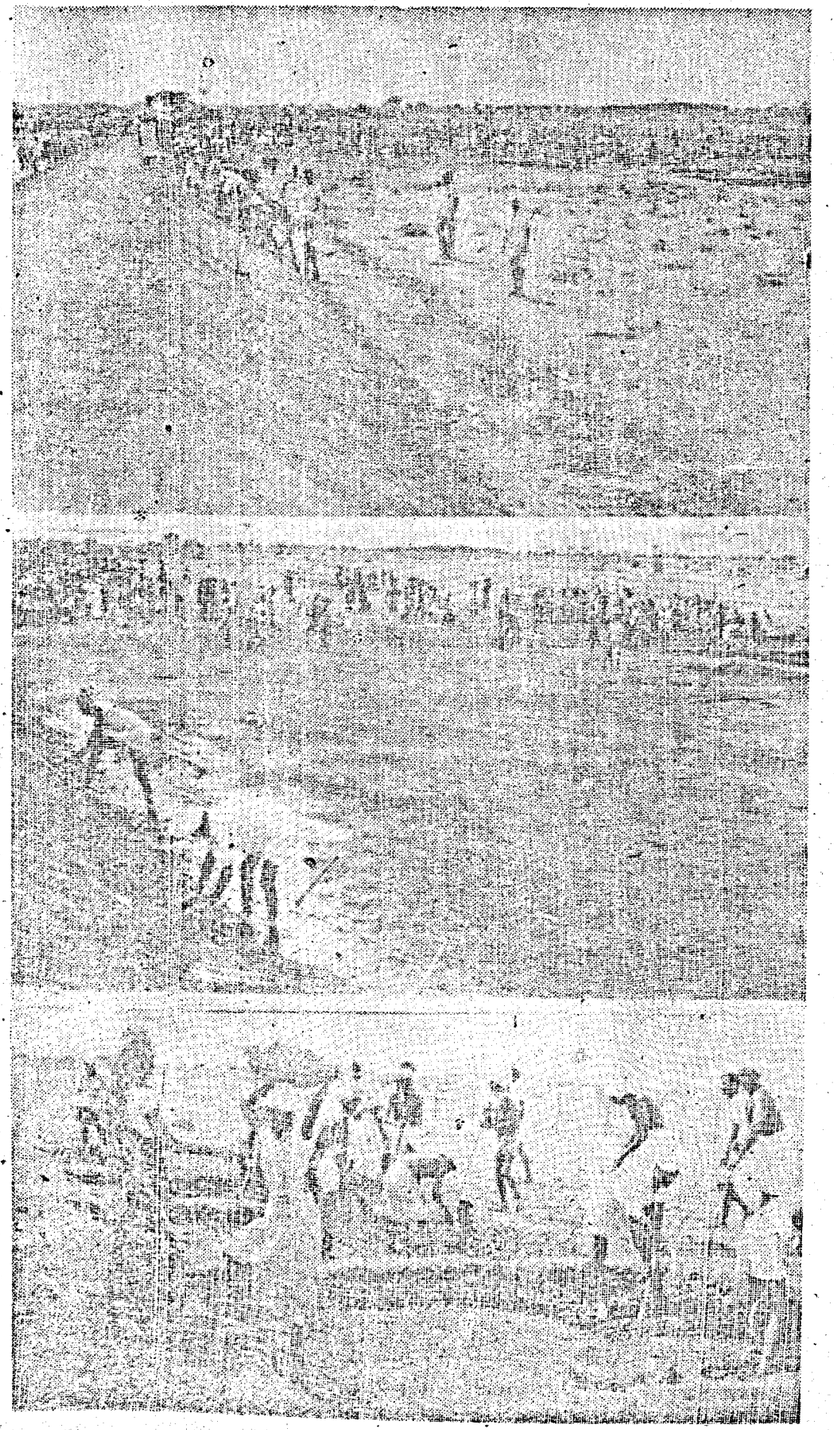
1976 WAS YEAR GRAVE CHALLENGES

First half of year was one of great concern and effort in providing drinking water to villages in grip of 3rd year drought



When Rains came, it caused disastrous Floods.
Kotturpuram Residents being brought to safety by brave fishermen

The Massive Drought Relief operations was a saga of Fortitude



Improvements in Provision of Health Services to the Poor and the Needy

TAMIL NADU PATTERN MERITS EMULATION BY OTHERS

By
P. MURARI, I.A.S.,
SECRETARY,
HEALTH & FAMILY
PLANNING DEPARTMENT

TAMIL Nadu had always a fairly well-developed system for provision of a package of health services to the urban and rural areas with a distinct bias towards the poor and weaker sections of society. However, there were certain drawbacks and problems relating to congestion and overcrowding in city and district hospitals.

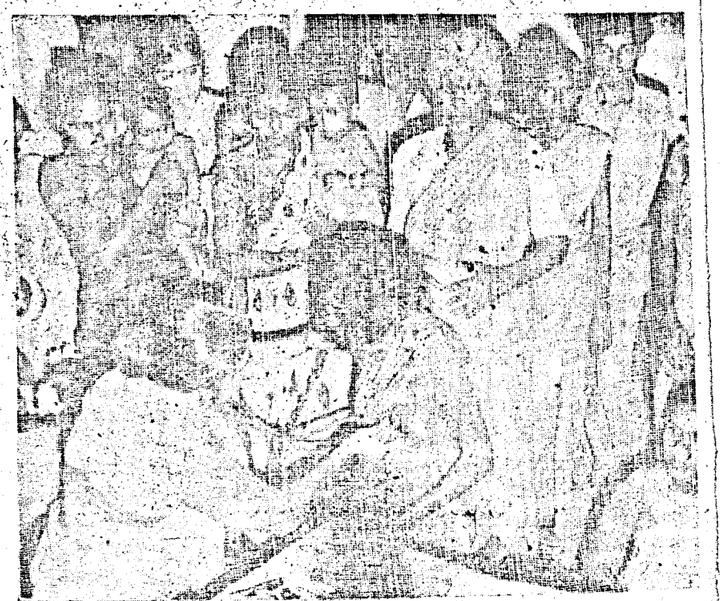
Immediately after the ushering in of the President's Rule, it was possible to introduce a number of improvements in the provision of medical facilities to the poor and the needy and today, after one year of President's Rule, the medical department is providing a package of health services that would be a model for others to emulate.

Out-patient Services

The original out-patient services consisted of a crowd of walking, serious and shock cases. All patients were receiving attention without any functional division and priority which is very essential and fundamental in a hospital system. After several studies, the Government had issued two orders functionally dividing these into Walking, Serious and Shock cases and establishing Intensive Care Units for serious and shock cases and 24 hours Fracture Services for others. These Government orders could be effectively implemented only recently and the functional division has taken place with observance of discipline in the management of out-patients and serious cases. At this crucial stage an important principle was enunciated by the Director of Medical Education, i.e., the same patient should be seen by the same doctor every day in the out-patient ward just as is done in the in-patient wards. This constitutes a major qualitative improvement in treatment. This leads to greater satisfaction to the patients and reduces the time taken by the doctor for treatment. The consumption of drugs, and laboratory investigations are all reduced and this will be followed up in all other hospitals.

In 8 Medical Colleges, 6 Intensive Care Units and 4 Intensive Coronary Care Units have been sanctioned and they are functioning effectively.

102 Medical Units have been formed in Madras City to cater to the 2.5 lakhs slum population at their door-step.



In the recent period, there has been a great deal of discussion on the Srivasta Committee's report regarding reorientation of the medical education to the needs of the community and sending doctors to the villages. In spite of this widely laudable objective, it has not been possible for the Government or the private agencies to send doctors to treat poor people free of cost at their door-step. Several conferences have taken place, several resolutions have been adopted, but all of them had no effect. At a meeting of all the Deans, Principals and Superintendents in Madras, it was suggested the unit chiefs of the various medical colleges would accept a population of 2,500 for each professor within walking distances of the medical college where living conditions are exactly similar to that of a village or even worse. This suggestion had the support of the Governor and the Adviser.

The Government have now passed orders approving the Director of Medical Education's action in having directed the 102 Medical Units in the city to serve the slums with a population of 2.5 lakhs and have also approved a total of 274 such units in the entire state in the 8 medical colleges to serve similar slums around them. **Thus a total of 6.85 lakhs of slum-dwellers are now being covered by the unit chiefs providing comprehensive health care at their own doorsteps.** Senior Professors who have consulting rooms for which appointment sought and obtained is with time intervals ranging upto 15 days are now visiting the doorsteps of slum dwellers and attend to them. **This is a major breakthrough in Health Care Delivery System inaugurated in this State.** This system came timely when unprecedented floods overtook the city 15 days after the scheme was introduced. 102 units went into action for preventive inoculation inside the city. A total of 6.11 lakhs among 8 lakhs of slum dwellers were inoculated within 15 days, a major portion being covered within 10 days. The rest of the inoculations was continued by the Public Health and the Medical Departments. This prevented a major catastrophe of cholera outbreak in the city.

When there was sudden floods in Madras last November and urgent need arose to cover 6 lakhs with Cholera inoculations the 102 medical units did the job without loss of time.

The dreaded infectious disease of smallpox which used to take a heavy toll of lives in the past has been totally eradicated in this state. Zero status in smallpox incidence has been achieved and Tamil Nadu was the first State to achieve this distinction in the country. The staff allotted for the purpose of eradication of smallpox, however, continues to be vigilant.

The problem of malaria has been controlled due to timely measures and surveillance activities undertaken by the Government of Tamil Nadu since 1st April 1976. The State Malaria Eradication Committee which had been constituted in 1966 but had not met was reconstituted with Adviser Mr. R. V. Subrahmanian, as the Chairman in March 1976 and continues to meet every month to initiate measures to combat this scourge. Due to constant surveillance activities and anti-malarial measures, the incidence of malaria has been brought down to a considerable extent. The help of voluntary organisations, the National Student Service Corps, etc., are being increasingly obtained to supplement and complement the efforts of the Government in this regard.

As part of the National Leprosy Programme, the State Government has launched a special drive from March 1976 to control the spread of leprosy and to provide modern treatment and facilities for leprosy patients. So far, 5.25 lakhs of cases have been recorded out of a total of 7.5 lakhs of estimated cases. During 1976-77, the Government sanctioned Rs. 60.53 lakhs worth schemes relating to setting up of leprosy control units, upgradation of old units into full-fledged control units, provision of urban leprosy centres; construction of temporary hospitalisation wards for leprosy patients and the setting up of reconstructive surgery units. **A new scheme, sanctioned in 1976 relates to check-up of school children to detect early cases of leprosy.** In this system teachers and para-medical workers along with a team of doctors would examine school and pre-school children in balwadis and provide effective treatment.

Housing Weaker Sections

Housing for the poor, a basic necessity, was a sector that needed more attention. After the introduction of President's rule in the state, assignment of house-sites in rural areas to the houseless poor by way of regularisation of unobjectionable encroachments is being done very systematically on a time bound and priority basis. Since February, 1976, 1,69,992 housesites have been assigned. These include 38,134 to scheduled castes and 2,009 to scheduled tribes. Regularisation of 57,000 unobjectionable encroachments is targetted for this year.

In order to provide adequate relief to the weaker sections of the society from indebtedness, a moratorium on the recovery of the earlier debts of agriculturists and non-agriculturists was promulgated. The moratorium has been continued upto 16.7.1977. The Tamil Nadu Debt Relief Act, 1976 cancels in one stroke the debts of landless agricultural labourers, rural artisans and small farmers whose annual household income does not exceed Rs. 2,400.

Proposals for extending debt relief operations, scaling down of debts of other categories and promotion of a positive movement in the community for self reliance in the matter of consumption credit through co-operatives and commercial banks are contemplated.

The minimum wages Act for agricultural labourers (wages were enhanced, in March 1976) ensure adequate wages for the labourers. This Act was followed by a notification issued in November, 1976 by which the employers who had paid wages at rates higher than the minimum wages were required to continue to pay at the higher rates. Necessary machinery for the implementation of these wages has been created in the districts.

The handloom sector has a unique status in Tamil Nadu by virtue of its providing employment to more than two million people. Since February, 1976, 117 new weavers' co-operative societies have been organised and 22,100 weavers brought into the co-operative fold from the private sector.

Cloth for Millions

The distribution of controlled cloth through co-operative societies has been streamlined, so as to ensure that about 75 per cent of the allotment reaches the rural areas. There are 4,713 distribution points for the sale of this cloth, out of which 4,035 are in rural areas. To make controlled cloth, especially sarees and dhoties, more acceptable to the consuming public, production of standard cloth dhoties and sarees on handlooms has been started: 55,000 sarees and one lakh dhoties are targetted to be distributed every month.

Helping the Weaker Sections to stand on their own is the key-note of 20-Point Plan - Adviser P. K. Dave is seen distributing milch cattle to marginal farmers.

Book banks have been organised in all the schools, numbering about 33,726 and in 245 professional and arts colleges; 1,02,455 college students and 8,,19,162 school students have benefitted under this scheme.

Under the scheme of utilisation of craftsmen apprentices' places, as against 9,057 training places located, 9,364 places have actually been utilised. Out of 9,364 apprentices, 221 are women apprentices and 4,132 belong to backward classes and minorities and 38 are physically handicapped. The actual achievement is 103 per cent.

The Government of Tamil Nadu has realised that only by expanding facilities for non-formal education can the goal of universal literacy be achieved. Hence, the government have created a separate Directorate of Non-Formal Education in March, 1976 and this Directorate is actively engaged in a number of activities to eradicate illiteracy.

Tree Planting

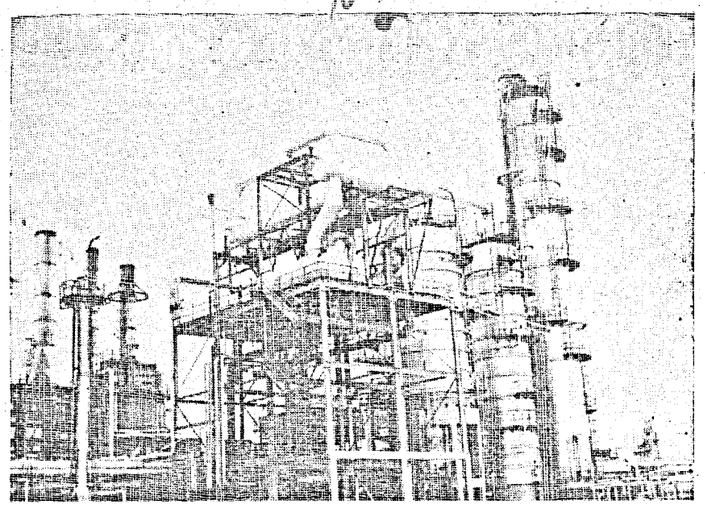
Even though large areas of the state suffered from severe drought some of them for two or three years running, and the south-west monsoon of 1976 was very much below average, a target of 40 lakh saplings for 1976-77 was fixed under the tree planting campaign. By the end of December, 1976, 55.40 lakh saplings have been planted in the state. The state council for tree planting has been formed uuder the chairmanship of the Governor of Tamil Nadu. Various incentives have been proposed and measures taken to make the tree planting programme in the state a grand success.

There has been uniform progress on almost all aspects of economic development in Tamil Nadu since the introduction of President's rule. Fifty five per cent of the annual plan outlay for the state in 1976-77 was spent on items under the 20-point programme. It is but a reasonable expectation that with the successful and effective implementation of the 20-point programme and the 5-point social programme, a new and just society will be born. If the same spirit of devotion to duty and the sense of responsibility and discipline so far shown by the people from all walks of life during the past one year are continued in the years to come, Tamil Nadu will march ahead to a better tomorrow.

Industrial Development Spreads Far & Wide

BY

T. N. SESHAN, I.A.S.,
SECRETARY
INDUSTRIES DEPARTMENT



A view of Manali Oil refinery.

THE Fifties and the early Sixties witnessed a phenomenal growth of industry in Tamil Nadu. A remarkable feature of this growth was the expansion and diversification of different types of industry, new lines of manufacture as well as the production of many sophisticated items.

This growth was not confined to any particular sector but covered the public, as well as the private and also the small scale sector. Entrepreneurship was actively promoted, the state playing a supporting role. In many sectors of industry Tamil Nadu came to occupy a truly important national position as, for example, in cement, automobile ancilaries light engineering, etc.

However, in the last few years the place of industrial investment in Tamil Nadu had slowed down. Heavy power cuts and inadequate demands for many industrial products and consumer durables contributed their share to slowing down of industrial growth. The major task after the imposition of President's rule in the state was to provide the stimulus for industry and to explore new avenues of advancement. In every area constraints had to be identified in order that efforts are made in the right direction to revive the rate of industrial growth. Undoubtedly, existing capacity must be utilized and higher productivity achieved. In respect of mineral resourees, Tamil Nadu is not as well endowed as other parts of the country. But Tamil Nadu possesses a highly trained and disciplined manpower.

Spring Board

This base can provide the springboard for entrepreneurship with progressive sophistication of technology. These factors would also indicate that our growth should be in areas of high-value-added products like high precision engineering, electronics, basic and fine chemicals, sophisticated machinery, finished leather and leather goods. In keeping with national policy the state is moving away from export of raw materials and semi-finished goods to that of finished goods.

Leather

Accordingly one area which is now receiving the attention of state agencies for industrial promotion is that of leather. This industry contributes the highest quantum of foreign exchange and employs over 500,000 workers who belong mostly to the weaker sections of society. With two thirds of the country's leather units located in Tamil Nadu alone, the state's share in the export is 85 per cent. If the national export target of finished leather set at Rs. 600 crores a year is to be achieved, finished facilities have to be created on a large scale in Tamil Nadu. While the Centre has decided to set up one service centre in Tamil Nadu by allotting Rs. 25 lakhs, the state government has identified 10 locations where similar facilities will need to be set up. It is proposed to utilise the Central assistance as seed money to set up five centres which would be implemented as industrial cooperatives.

The other sector which has been identified for a special effort is the electronics industry. To ensure a systematic and rapid growth it was found necessary to work out a plan which would include proposals for setting up of electronics industry directly by the government or in the joint sector. In addition, service support would have to be provided to private entrepreneurs. Product lines would be identified along with the required manpower. The plan would have to take into account the existing industry as well as infrastructural facilities not only in the field of electronics but also allied areas like materials technology, tools testing and development and quality control. With these objectives in view, the government constituted a committee in July 1976 which has now submitted its report. The report is under the consideration of the government and the accepted recommendations will be implemented expeditiously.

While the organised sector, both large and medium, is receiving attention, the rapid development of small scale industries has also been undertaken. There are approximately

TWO LAKHS CHILDREN COVERED BY VITAMIN 'A' THERAPY

Agitated by the survey report which indicated that nearly 2 lakhs children in Tamil Nadu were progressively becoming blind due to malnutrition and deficiency of Vitamin A, the Prime Minister sanctioned a donation of Rs. 2 lakhs as part of relief measures from the Prime Minister's Relief Fund in the middle of 1976. Utilising this donation, the Tamil Nadu Government have sanctioned the implementation of a scheme towards the prevention and control of blindness among children in one block in each district where the Applied Nutrition Programme is not in operation. The district health officer and the mass media officer are in charge of the programme. Para-medical workers and community-level workers will carry out the nutrition and health education activities, identify deficiency diseases, distribute vitamin 'A' solution to all beneficiaries and educate people to add greens to their diet.

The Medical Services Department has been paying increased attention to provide medical care to the tribal population. Special schemes for opening of hospitals, primary health centres, and dispensaries have been sanctioned in the last one year aimed to benefit tribal population and those released from the bonded labour. One such special scheme relates to provision of medical facilities in hill areas. In Kalrayan Hills, for tribes who have been liberated from bonded labour as a part of the 20-Point economic programme, the Government sanctioned the establishment of a mobile medical unit to serve the tribals, increased the laboratory facilities in three taluk hospitals at Kallakurichi, Harur and Athur, and appointed three health inspectors for immunising children and for looking after the hygienic and environmental problems in these areas.

Tamil Nadu has always been in the forefront in the implementation of the family planning programme. However, this received a considerable fillip after the ushering in of the President's Rule. The measures to be taken to sustain the programme are being discussed at every meeting to review the progress of the 25-point programme.

By means of persuasion in the midst of rural folk Tamil Nadu has achieved remarkable success in Family Planning Programme.

The Government of India fixed a target of 5 lakhs sterilisation operations, 35,500 IUD insertions, 1,47,500 conventional Contraceptives and other methods to this state for the year 1976-77. The achievement till now is as follows :

Sterilisation	...	5,15,678
I.U.D.	..	26,891
C.C. Users	..	1,42,321

In view of the limited facilities available in the Government medical institutions, this Government is laying stress on the camp concept and this has been producing significant results. Taking advantage of this, the Lions Club, Rotary Club, Round Table, etc., have been running camps within Madras City and in the mofussil towns with success. They have also appealed to their branches in the districts to run special camps, enlisting the co-operation of local Government institutions and voluntary agencies in the villages.

Special camps were run by industrialists, like Binny and Company, Madras Cements, Port Trust, Dock Labour Board etc., with encouraging results. **A special feature of these camps was that great attention was paid to after-care facilities, which served as an encouragement to others to follow.** Voluntary bodies, youth and Madhar Sangams are also involved in this programme.

Sugar industries have been asked to run special camps of 10 to 15 days duration for the benefit of factory workers, as well as a large number of sugarcane growers and their employees. A striking feature of the programme in Tamil Nadu is the acceptance of family planning concept by all religious minorities. They have come forward in fairly large numbers to adopt the programme and undergo sterilisation.

Special incentives and disincentives have been devised for Government servants, members of the general public, local body institutions, etc., to adopt this programme. So far as Government servants are concerned, grant of maternity leave, travelling allowance, grant of medical benefits are limited to the first three children. Recently, the Government has announced the grant of one advance increment to non-gazetted Government servants who or whose spouses undergo sterilisation. Several other measures to give a boost to the programme through Government servants are under consideration.

A notable feature of the Family Planning programme this year is increased emphasis on maternal and child health schemes. We have made good progress in implementing these maternal and child health schemes successfully in Tamil Nadu.

Tamil Nadu has already achieved a birth-rate of 29 per 1000 by now. It is well set to reach the target of the National Population Policy in good measure by achieving a fall in birthrate to 25 per 1000 by the end of the Fifth Plan period.

20-Point Programme A Stock-Taking Review

By

Thirumathi RATHI VINAY JHA, I.A.S.,

Joint Secretary, Public Department.

Taking stock of the achievements over the last year in Tamil Nadu, it can be said with conviction that the State has benefited largely from the atmosphere of discipline and purposefulness generated during the emergency to improve its economic development.

The 20-point programme, which was announced at a time when the socio-economic development of the country had to be speeded up to face the challenges of a developing economy, was effectively implemented in Tamil Nadu only after the introduction of President's rule. In one year, remarkable progress was achieved all round.

The very first problem that had to be tackled on a war-footing was to arrest the trend in spiralling prices of essential commodities. Systematic action was initiated in the shape of increased food production, a streamlined public distribution system and stern action against hoarders and blackmarketeers to combat inflation. As a result, prices of rice and other essential commodities have been kept within reasonable levels. The price of boiled rice (medium), the staple diet, ranges from Rs. 1.60 to Rs. 2 a kg. today as against Rs. 1.47 to Rs. 2.50 a kg. a year ago. Special attention was paid to supply of essential commodities to the weaker sections and to students. With the regular supply of rice, wheat products and sugar at controlled rates to the students' hostels attached to educational institutions, the mess rates in hostels this year are about 15 to 20 per cent less than the corresponding rates last year.

Agricultural production had to be given a special thrust on account of its being the largest single contributor to the income of the state. Keeping this in mind, sustained efforts have been taken to increase agricultural production by optimising the use of fertilizers, improvement of agronomic practices, adopting better water management techniques, continued use of high yielding varieties of seeds and introduction of multiple cropping in dry areas.

Tamil Nadu has the distinction of having the highest average yield per acre in paddy and efforts are directed towards maintaining this lead by proper application of fertilizers and continuing to have large area under high-yielding varieties with the necessary package of practices adopted.

Increased emphasis has been laid on the completion of on-going medium and minor irrigation schemes. Budgetary allocations for these schemes have been substantially stepped up ; 18,000 hectares are to be brought under new irrigation through major and medium irrigation schemes. The progress so far has been according to schedule and it is even expected to over reach the target and achieve an irrigation coverage of 21,383.6 hectares. Up to the end of December 1976, 7.677 lakhs of pump-sets were energised, which is the highest for any state. As against the target of energising 35,000 pump-sets during 1976-77, 36,093 pump-sets were energised up to the end of January, 1977.

With careful and determined management and discipline, the government has succeeded in operating the thermal stations in the state at over twice the levels reached in 1975. This has helped to avert a power cut of larger proportions and the state has been able to tide over the power crisis with a nominal power cut of 25 per cent with relaxations and exemptions to a number of categories of essential industries and small scale units.

In the interests of social justice and equitable distribution of wealth, agricultural land ceiling and speedier distribution of surplus lands have been given due importance. Since February, 1976, 13,580 acres have been assigned, benefiting 9,709 persons, of whom 4,998 belong to scheduled castes and scheduled tribes.

Following successive droughts in the state, a law for protection of tenants from eviction by way of a Presidential Act was promulgated in August 1976. No tenant can be evicted on the ground of arrears of rent up to January 15, 1978 for arrears accruing upto June 30, 1976. The question of conferment of ownership rights on cultivating tenants is also under active consideration.

Bonded labour, a relic of the feudal past, was still prevalent in some parts of the state. It is indeed creditable that the identification of bonded labour was given prime importance and since February, 1976, 2,870 bonded labourers in 2,251 families have been freed in the various districts of Tamil Nadu. Most of them have been rehabilitated by assigning cultivable lands, providing ad hoc employment and giving subsidiary farming assistance. Measures are under way to rehabbilitate the rest. Under the scheme to abolish bonded labour, a multi-pronged development programme had been launched in the Kalrayan hills. Under the tribal subplan, schemes relating to agriculture, khadi and village industries, animal husbandry and social welfare departments had been sanctioned to the tune of Rs. 1.95 lakhs. Under these schemes, nine balvadis had been opened. So far, 353 children had been admitted to the balvadis.

38,000 registered units already of which quite a few are dormant. The reasons for dormancy include factors like process insufficiency, raw material problems, problems of finance, marketing problems and managerial problems. A few of these units were earlier organised to corner scarce raw materials. A detailed review of small scale units is being undertaken to assess their capability for revival and the remedies required by those not working. This process which commenced a few months back has now been taken up vigorously. In the drive for new small scale units which concluded recently more than 8,000 new units were registered. These units are spread out over all the districts. **The industries department is only too aware that registration is merely the first step and considerable effort will have to be directed to convert these units into productive units. This effort has been taken up vigorously and inputs like infrastructure and raw materials are being provided.**

The development of the handloom sector which is an important element of the 20 point programme has been taken up vigorously. Over 30 per cent of the four-and-ahalf lakh weavers in the state are already under the co-operative umbrella. Another 30 per cent will be brought into the fold in the next three years. The Co-operative spinning mills are being expanded to meet the weavers' requirements of yarn. Other inputs like dyes, chemicals, processing are being organised. The marketing organisation i.e., Cooptex, has been geared up to handle an increase in annual turn-over from Rs. 16 crores to Rs. 25 crores. New projects for handlooms have been taken up at Karur, Erode and Kancheepuram which will cover the weavers outside the co-operative fold.

Sick Mills

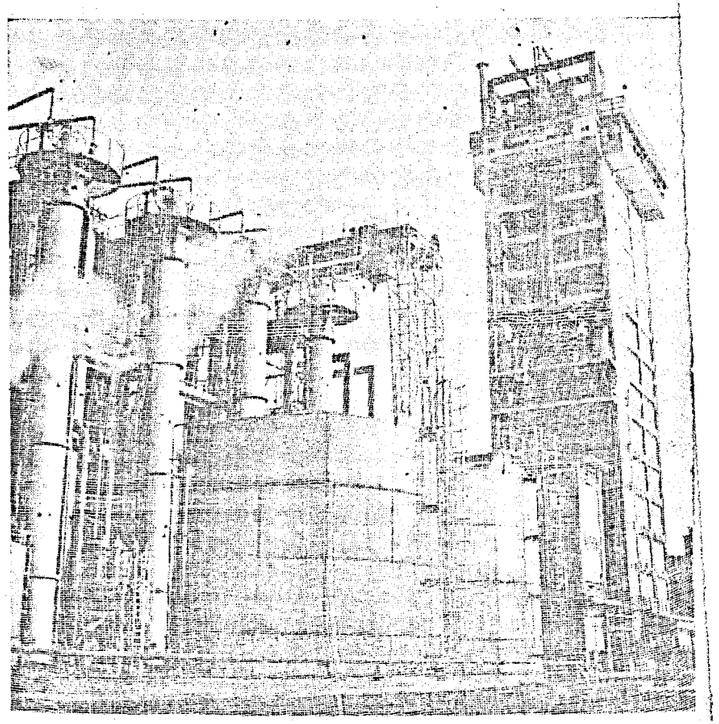
While new industry is being fostered in a variety of areas, the state government has given close attention to the problems of existing industry. In order to study the problems of sick textile mills and restart closed mills, the government has constituted a state-level committee which has assessed the situation in 29 mills and has recommended, among other things, financial assistance, government guarantee, postponement of dues, modernisation of machinery and reduction in over head charges and administrative expenses by the mill management. A similar committee of the Centre has taken up 16 badly-affected mills in Tamil Nadu for study.

The joint sector is another area where new achievements are being chalked up by the Tamil Nadu Industrial, Development Corporation (TIDCO). Apart from the 12 projects like SPIC, Dynavision. Tamil Nadu Chromates and Chemicals etc. that are already in production, 12 more projects are in various stages of implementation. Some of these are Tamil Nadu Chemical Products. Arkonam Castings and Forging Limited, Tamil Nadu Fluorine and Allied Chemicals Ltd. Other projects for the manufacture of resins, drugs, magnesium metal etc. are under consideration. In the public sector, TIDCO has just commenced work on its new Rs. 20 crore cement plant at Ariyalur.

The sugar industry is receiving a fresh impetus with the coming up of a number of new units in addition to the existing factories in the private and co-operative sectors. Two co-operative units at Tirupattur Vellore and one at Thanjavur in the public sector are almost ready after having been completed in record time. Another mill at Perambalur will be ready later in 1977. Work is about to commence on yet another mill at Sankarankoil. From February 1976 onwards, the sugar directorate geared up its efforts towards development of cane and supply of other inputs for the co-operative sugar mills.

With reference to the 20-point programme, greater attention is focussed on creating more employment opportunities through industrial co-operatives. In 1976-77 industrial co-operatives societies were started to provide employment to more than 1,000 artisans and technicians. In Tiruchi district about 210 bonded labourers engaged in gem cutting were freed and two new gem cutting societies were formed at Vadassari and Tirupanjeeli. In Ramnad district 17 match workers co-operative societies were formed with a government share capital contribution of Rs. 1.60 lakhs. A common facility centre for leather finishing has been organised at Vaniambadi at a cost of Rs. 41.50 lakhs. Two new co-operative tea factories in Nilgiris district have been commissioned.

Urea Plant, NEYVELI.



MAJOR THRUST BY CO-OPERATIVES

The year 1976-77 witnessed a multipronged thrust by the Co-operatives of Tamil Nadu in improving their services to the people.

When the term co-operation is mentioned, one thinks mostly of co-operative credit movement. In Tamil Nadu, it is estimated that there are around 54 lakhs of agricultural families. As on 31-1-1976 only 27.98 lakhs of those families were enrolled in the co-operatives. An enrolment campaign was therefore launched. The campaign was fairly successful, in that, as on 30-11-1976, 35.84 lakhs of families are covered under the co-operative umbrella and in this extended coverage of 7.86 lakhs of families, 6.07 lakhs of families are small farmers, marginal farmers and landless tenants. Thus, the main tenet of the 20-Point Programme, *viz.*, to help the weak and downtrodden, was translated into action in the enrolment programme.

Credit Advances :

Mere enrolment is not meaningful unless it is followed by a quantitative and qualitative improvement in the agricultural credit advanced to the cultivators. In March, 1976, the credit advanced was only Rupees 100 crores. The programme is to advance 115 crores by March, 1977. Between February and November, 1976, a total sum of Rs. 81 crores has been advanced and of this nearly 46% was issued to the weaker sections. The qualitative improvement in the agricultural credit advances is reflected in the nexus that has been firmly established between the area under cultivation of a particular crop and the proportionate share in the total loans issued by a society to that crop. This qualitative improvement becomes evident if the credit advanced by Salem Central Co-operative Bank is examined as an example. This Bank in 1975 had given maximum advances to crops like Tapioca, Plaintain and sugarcane as compared to Paddy and groundnut. It was alleged that these crops were favoured as the cash-components of the advances given for these crops was fairly substantial. So even cultivators who might have sown paddy claimed assistance as if it was a Tapioca crop.

A systematic study was therefore initiated by the Special Officer with reference to the actual acreage sown as noted in the village Revenue accounts and the pattern of lending was based on the verification of the actual acreage of crop sown. The results as shown below are quite revealing :

Name of the crop	*Advances from* 1-4-76 *to* 31-10-76		*Advances from* 1-4-75 *to* 31-12-75	
	Acre	*Amount (Rupees in lakhs)*	*Acre*	*Amount (Rupees in lakhs)*
Tapioca	9,848	83.71	49,742	339.37
Sugarcane	6,351	76.58	8,087	98.98
Paddy	19,492	137.93	2,139	11.51
Groundnut	30,173	102.13	1,566	7.83
Plantain	880	21.06	5,039	62.98

Yet another qualitative improvement was the operation "weed out" introduced to liquidate the non-viable and dormant co-operative societies. To illustrate there were 2,442 Lift Irrigation Societies, most of which had not even started functioning. It was seen that only 123 of these societies had some scope to work profitably. Action was taken to wind up all except these 123 societies.

Recently Government have also amended the Tamil Nadu Co-operative Societies Act so as to facilitate quick amalgamation of Co-operative Societies by the Registrar if public interest requires such amalgamation.

Selvi M.S. RAMESH I.A.S.,

Secretary,

Co-operation Department.

The Co-operatives in Tamil Nadu continued to play a prominent role in supplying essential commodities to the public. Out of 9,000 retail outlets distributing essential commodities. 7,000 are run by Co-operatives. To help the Primary Societies play a more significant role in this regard, Government have come forward and guaranteed repayment of the advances taken by the Societies for the consumer business from the Central Co-operative Banks, upto Rs. 7 crores.

The State has also taken full advantage of the N.C.D.C. sponsored Rural Consumer Scheme. The scheme provides for strengthening the share capital base of the wholesale store and provides financial assistance for purchase of furniture and a vehicle for quick transportation of goods. Ten projects costing Rs. 13.88 lakhs were sanctioned under this scheme in March, 1976. This linked 232 primary societies with wholesale consumer stores. Fifteen more such projects, involving 325 village credit societies and 12 wholesale stores with a total financial assistance of 18.86 lakhs

is 90 MW, the output of the station was generally limited to 50/55 MW in the past years due to constraints in cooling water and ageing of old boilers. By initiation of improvement measures the station output was stepped upto 60 MW, from January, 1976. It has now reached a peak performance of 70 MW and an average output of 1.5 MU per day. The maximum output recorded is 72.6 MW and 1,675 MU a day during 1976-77.

The performance of Neyveli station has also improved as compared to last year. As against 1987 MU made available with Tamil Nadu grid during 1975-76, Neyveli was able to step up the assistance to 1941 MU in the first nine months of 1976-77 itself.

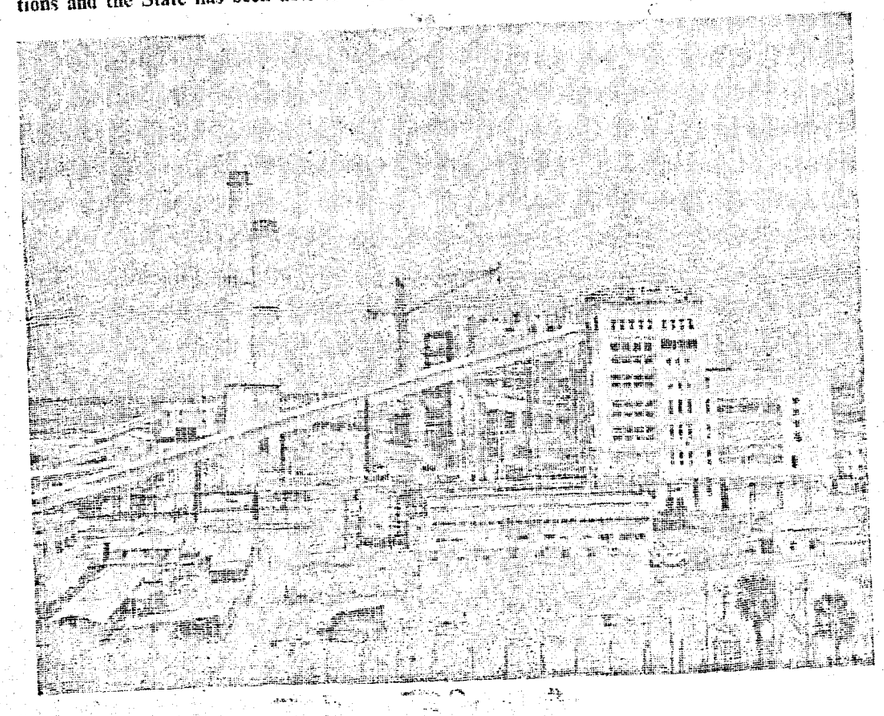
Due to unprecedented failure of the south west monsoon, the storage position in the hydel reservoirs of Tamil Nadu reached an all-time low during July, August and September, 1976. The position was such that a power cut of over 50 per cent was dictated even at the outset. However, with careful and determined management and discipline, it has been possible to operate the thermal stations of the Tamil Nadu Electricity Board at over twice the level reached in 1975. This tremendous improvement in thermal generation has helped to avert a power cut of larger proportions and the State has been able to tide over the power crisis with a minimal power cut of 25 per cent to 30 per cent in energy consumption and a demand cut of 20 per cent to 40 per cent with relaxations and exemptions to a number of categories of essential industries and small scale sectors.

Electricity has given a face-lift to rural economy and life all over the country. This is particularly perceptible in Tamil Nadu, where rural electrification has almost reached a saturation point after decades of progress achieved and maintained since Independence through planned power development and distribution. The tempo is, however, sought to be kept up under the 20-Point Programme with more acres to be irrigated as the target. In all 36,093 pump sets have been energised in 1976 as against 29,280 connected during 1975. A record number of 5,770 pumpsets were energised during April, 1976. 8,064 L.T. industries have also been connected during the period.

In order to ensure undivided attention for the consumers in Madras City, the existing system has been bifurcated recently. The Madras City and its suburbs including certain areas in Chingleput district were badly affected by the unprecedented cyclone and floods in November, 1976. Supply had to be switched off in many areas as a precautionary measure to avoid accidents. Soon after the floods receded, normalcy was quickly restored. Extensive damage done to the distribution system was identified and repaired very quickly and revamping measures initiated and long-range plans for permanent improvements also drawn up, for time-bound implementation. Financial assistance from the State Government to the Electricity Board has also been assured in this connection.

The Tamil Nadu Electricity Board is well geared to take up further programmes of expansion to augment its generating capacity so as to meet adequately the requirements of all the categories of consumers. With the commissioning of Kalpakkam Nuclear Project in 1978-79 and 1979-80 the power position is expected to ease. The State can look forward to a balanced power supply condition in future years.

The persistent demand for power in the State has always been outstripping the availability. To meet the power needs of the State in VI Plan and beyond establishment of a super thermal station (1,000 MW) is under active consideration. A favourable decision to go ahead with the project will raise the hopes and aspirations of the people of Tamil Nadu, and create a climate of confidence for future growth.



The Ennore Thermal Station which made up hydel power shortage in 1976

Welfare Schemes For The Socially Handicapped

13

By

G. THIRUMAL, I.A.S.,
SECRETARY, SOCIAL WELFARE DEPARTMENT

The caste system had its origin in "Varna Dharma" of the ancient Hindus. The intention at that time was not to divide the Hindu society into numerous castes. The classification of people was based on the professional ethics but later it assumed the rigid frame of caste system.

The concept of superiority in birth appears to have developed at a later date based on certain hierarchical stratification in regard to various forms of labour. The people who were benefiting the society by contributing certain forms of labour became Untouchables in the course of time and Untouchability became an evil deeply rooted in our social system. Social Reformers, Religious Preachers and other enlightened thinkers tried to dissuade people from the evil practice of Untouchability. However, until Mahatma Gandhi's assumption of national leadership, the movement for the abolition of Untouchability did not gain the necessary momentum. Mahatma Gandhi made Harijan uplift as one of the main planks of his constructive programmes. It may be recalled that he undertook a fast unto death to ensure integration of Harijan Community into Hindu fold and to prevent their being ensnared in the separate electorate system.

To eradicate Untouchability, provisions had been made under Article 17 and 35 of the Constitution of India and in pursuance of this, Untouchability (Offences) Act, 1955 was passed. Experience of the last decades have shown that two penal provisions of the Act were not deterrant enough and they did not yield the expected results. The Protection of Civil Rights Act which is the amended form of the original Act of 1955 makes more stringent provisions for punishments.

The Government of Tamil Nadu have taken various steps to enforce the provisions of the Civil Rights Act. The Police Department is entrusted with the responsibility for taking action or register cases under the Act. Six Mobile Squads with a staff of One Inspector, One Sub-Inspector, two Head Constables and two Police Constables in each squad are functioning in six districts, where there is a concentration of Scheduled Caste population. The mobile squad commenced work in 1972 and have registered 5,046 cases upto 30-6-1976. Out of this, in 3,206 cases conviction has been given.

In order to effectively enforce the provisions of the Protection of Civil Rights Act, the Government of Tamil Nadu have constituted a State Level Committee with the Adviser as Chairman and other prominent citizens as members. A special Cell for exercising supervision over the enforcement of the provisions of the Act has been formed with a Deputy Inspector-General of Police in charge. The State Publicity Department had distributed posters and handouts indicating the important provisions of the Act. The period from 11th to 21st November, 1976 was celebrated as Protection of Civil Rights Week and the objectives of the action in providing the enactment have been widely explained to and disseminated among the public.

Untouchability leads to waste of human resources.

The spirit and the intention of the Act could be achieved only if there is change of heart among the people and the age-old prejudice is wiped out from the minds of the Caste Hindus. Harijans should also be conscious of the rights guaranteed to them and try to assert their rights more and more. People must realise that practice of untouchability leads to enormous waste of human potential and constitutes a form of 'apartheid.' It is a violation of human rights and its existence is a continuous reminder that we are not wholly a free nation with equality of opportunity for everyone.

All efforts are being made by the Tamil Nadu Government to ameliorate the living condition of Scheduled Castes and to enable them to advance faster to come upto the level of more advanced sections of the Community. The Prime Minister's "20—Point Programme" contains a number of measures which have a direct bearing on the welfare of Scheduled Castes and Scheduled Tribes. These include provision of lands to landless Harijans, supply of essential commodities at controlled prices to Harijan students in Hostels, provision of note-books and stationery for Harijan students at controlled price, etc.

Government poramboke lands wherever available are acquired and assigned to Scheduled Tribes for cultivation purposes as well as house-sites. Where Government lands are not available, private lands are acquired and distributed as House-sites to the Harijans. From 1-2-1976 to 31-5-1976 *i.e.*, after the introduction of President's Rule in Tamil Nadu 15,457 house sites involving an extent of 771.72 acres have been acquired at a cost of Rs. 39 lakhs and distributed to the Harijans. A crash programme for provision of house-sites to all Harijans before November 1978 have been announced by the Governor of Tamil Nadu recently. This will benefit about 3 lakhs Harijans.

There are 61 hostels maintained for the Harijans and in all these hostels, essential commodities are supplied through the Civil Supplies Corporation or Co-operative Societies at control prices. There are 118 schools for Scheduled Castes and Scheduled Tribes in the State. Within 15 days of the opening of the schools in the current academic year, 1,47,125 students studying in these schools have been supplied with text books, note-books and slates, free of cost at a total cost of Rs. 11.50 lakhs.

For the Scheduled Tribes, who form about 0.76 per cent of the total population, a Tribal Sub-Plan costing Rs. 794.65 lakhs has been drawn. This plan will be implemented in 9 areas of Tribal concentration in the 5 districts of Salem, North Arcot, South Arcot, Dharmapuri and Tiruchirapalli. During the current year,

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of rupees has also been sanctioned recently. Further 43 consumer co-operative societies were sanctioned a margin money of Rs. 29 lakhs so as to enable them to get larger bank credit from financing banks for distributing essential commodities. It is evident that the Co-operatives have played a significant role in consumer trade, as the value of consumer articles sold through the Co-operative stores which amounted to only 120.93 crores of rupees in 1974-75 went upto Rs. 144.65 crores of rupees in 1975-76 and in the period from July 1976 to September 1976 it was Rs. 48.65 crores. If the same tempo is maintained, it is likely that the total turnover of the consumer co-operatives may reach 200 crores of rupees in 1976-77.

Controlled Cloth :

In Tamil Nadu, controlled cloth is distributed only through the Co-operatives. The number of retail outlets for distribution of this controlled cloth went up from 4,276 in the beginning of 1976 to 4,687 by the end of 1976. Of these 4,007 are in the rural areas. Between February to November, 1976, 15,342 bales of cloth were distributed through these outlets. Government of India also sanctioned 9.28 lakhs of rupees as margin money to 35 co-operatives for raising additional working capital for distributing controlled cloth.

In the beginning of the year only 195 hostels were being catered to by the consumer co-operatives. By December, 1976 this number grew to 240. Because of the price differential when supply is effected through the co-operatives; not only have the mess bills of the students shown significant downward trend, the students also have had the satisfaction of getting unadulterated quality goods. To help the college students, who do not have the facility of staying at home and having cheap messing facilities, action had been initiated in 1976 to establish common kitchen centres through the college co-operative consumer stores. Recently Government of India have sanctioned one such common centre to be set up in the campus of Thiagaraja College of Engineering at Madurai. It is hoped that many more such common kitchens would spring up in all the Colleges in the State.

Consumption Loans touch New Peak of Rs. 45 Crores

Pioneering Role of Tamil Nadu Co-operatives

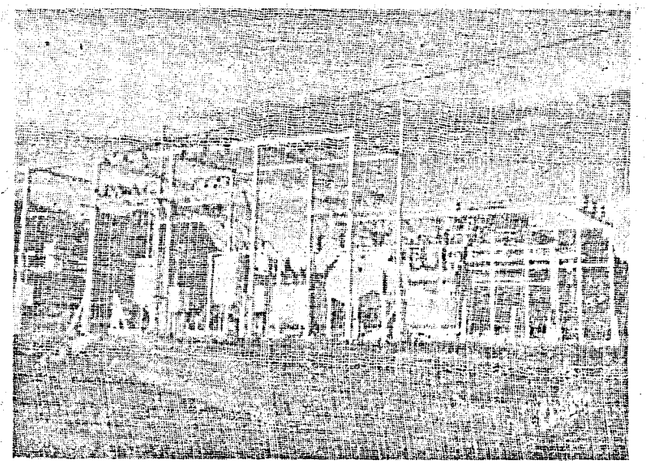
Books and Stationery :

Yet another significant first to the credit of the co-operative movement in this State was the distribution of nationalised text-books. Hitherto, the work was done by the private trade and there were complaints of delayed lifting of books and consequential failure or make available the books in time for the academic year. The co-operatives therefore, took up the challenging task and it is gratifying to find that the very first year 169 lakhs of books valued at Rs. 2.55 crores were distributed through the Co-operative outlets, to the students and the whole operation was completed well in time and much ahead of school reopening dates. A special quota of 400 tonnes of paper was obtained from the Government of India at concessional rates and were converted into exercise notebooks and supplied to the students at cost prices.

The introduction of the Debt Relief and Moratorium Legislation and the consequent shrinkage in availability of consumption finance from the traditional sources like Pawn Brokers and Money Lenders has led to the Co-operatives shouldering greater responsibility in the sensitive field of provision of consumption finance. In the period from 1-2-76 to 30-11-76, the Co-operative Urban Banks have advanced as jewel loans 20.12 crores of rupees to 3.45 lakhs of persons. In the Rural Areas, the Central Co-operative Banks have stepped up the issue of consumption loan through their branches and major agricultural credit co-operatives. Bewteen 1-2-76 and 30-11-76 these societies have issued jewel loans to the extent of 11.22 crores of rupees to 1.88 lakhs of beneficiaries. Thus, the average monthly issue of jewel loans by all the co-operatives, which was of the order of only 11.82 crores of rupees prior to 1-2-76 has been stepped up to 31.3 crores of rupees by November, 1976.

The Co-operatives also undertook to advance consumption loans on personal security through the Agricultural Credit Societies to the weaker sections of agricultural community *i.e.*, farmers owning less than 2.5 acres of irrigated or 5 acres of dry land, landless tenants and labourers and artisans. These consumption loans were limited to amounts ranging from Rs. 75 to Rs. 250 for the purposes like marriages, medical expenses and funerals. The consumption loans advanced by the Cooperatives are not refinanced by the Reserve Bank of India. Yet, the co-operative Banks in Tamil Nadu have been unhesitatingly shouldering this burden out of an awareness of their national responsibility to provide consumption loans to weaker sections of society. It is expected that in 1976-77 the co-operatives may be advancing between 40 to 45 crores of rupees as consumption loans as against only 22 crores of rupees issued during 1975-76. In this respect the Co-operative Movement in Tamil Nadu is playing a pioneering role.

GAINS ON THE POWER FRONT



By

C.N. RAGHAVAN, I.A.S.,

Secretary,

Public Works Department

The investment on power is almost a pace setter for economic progress and prosperity. The outlay on power has been significantly stepped up in 1976-77. As against an approved outlay of Rs. 29.50 crores in 1974-75 and Rs. 40 crores in 1975-76, the outlay for the current year is Rs. 70.18 crores, this being more than the provision in the last two years taken together. The total outlay for power is proposed to be further increased to Rs. 94.1 crores in 1977-78. The allocation for generation projects alone has been enhanced to Rs. 43.7 crores as against an annual average of Rs. 17 crores in order to support adequately the project activities in the on-going schemes.

The year 1976 witnessed successful completion of three generation schemes, *viz.*, Ennore Thermal Extension (110 Mega watts), near Madras, Naduvattam Diversion Scheme (69 million units) in Nilgiris District and Kuttiar Pumping Scheme (40 million units) in Kanyakumari District.

Among the schemes taken up for construction, the benefits from Kundah IV stage, Suruliar Hydro Electricity Scheme and Tuticorin are expected in the Vth Plan (before the end of 1978-79).

Kundah IV stage scheme envisages installation of a third 60 mega watts unit at Kundah Power House 3 and a second 50 Mega Watts unit at Kundah Power House 4. Estimated to cost Rs. 11.64 crores, the scheme located in Coimbatore district is targetted for completion in 1977-78.

Suruliar Scheme envisages utilisation of run-off flows of Suruliar with a catchment area of 39 sq. Km. of Suruliar, Eravangalar etc., in Madurai district. Estimated to cost Rs. 19.41 crores, the scheme is targetted for completion in 1978-79.

Tuticorin Thermal Scheme envisages the establishment of a thermal station at Tuticorin with a capacity of 2 X 210 MW initially and 630 MW ultimately. Estimated to cost Rs. 140.86 crores, the scheme is targetted for completion in 1978-79 (first unit).

As against Rs. 2.43 crores spent for Suruliar Scheme during 1975-76 the expenditure in 1976-77 has been Rs. 3.74 crores upto December, 1976. Similarly, the expenditure for Pandiar-Punnapuzha Scheme has been increased from Rs. 24 lakhs in 1975-76 to Rs. 73 lakhs for nine months in 1976-77. The effort in respect of Tuticorin Project has been given additional thrust. The outlay has been stepped up from Rs. 11 crores in 1975-76 to Rs. 34·5 crores in 1976-77. This is to be further enhanced to Rs. 43 crores for 1977-78.

The investment on transmission and distribution progress has been only of the order of about Rs. 10 crores in a year. This has been stepped up to Rs. 15 crores during 1976-77, keeping in view the enhanced physical programme targetted to be achieved. As against the total 14 Nos. sub-stations and 14 Nos. EHT lines with a total length of 196 KM erected during the previous three years, the target for the year is to erect 26 Nos. sub-stations and 15 Nos. E.H.T. lines with a total length of 340 Km. The accent is on ensuring adequate facilities for satisfactory and stabilised supply conditions in the grid. To meet the requirements of consumers, an ambitious programme for 1977-78 has been drawn up to erect 28 Nos. sub-stations and 20 Nos. E.H.T. lines with a total length of 408 Km. The financial outlay has been fixed at Rs. 28.5 crores indicative of the anxiety of the Board and the government to correct the imbalance in the grid.

In view of the urgent need to maximise the utilisation of the existing capacities, concerted efforts were taken to revamp the units at Ennore Thermal Station which was plagued with a series of troubles since 1970. With the closest co-operation and association of the suppliers M/s. B.H.E.L. and expertise available with the Central Electricity Authority, the trouble spots were identified, remedial measures initiated and the units brought back to normal operation for the first time in 1976. The station as a whole has started stabilising at a time when greater contribution was expected of it. Improvement at Ennore has also off-set to a significant extent the shortfalls in hydro generation caused by unexpected monsoon failure.

The generation at Ennore during the year 1976 is 1853 M.U. as against 812 M.U. in 1975. This is certainly a record performance for Ennore. The station has touched a peak output of 400 M.W. and energy generation of 913 M.U. a day. The availability of individual units has vastly improved and the forced outage hours are being gradually brought down. A stage has come where reliable generation at Ennore at a satisfactory level is being assured.

Similar to Ennore an "Operation Basin Bridge" was also launched with satisfactory results. Though the installed capacity of the station

works costing more than a crore of rupees under agriculture, animal husbandry, minor irrigation, cooperation, forestry, roads, social services etc., have been sanctioned for execution and they are in fast progress in the tribal areas.

In 1974-75, the Government set up the Tamil Nadu Harijan Housing and Development Corporation with a view to provide houses to the Harijans. This Corporation is constructing houses at a cost of Rs. 4,000 in plains and Rs. 6,000 in hilly areas. More than 33,000 houses have so far been constructed under this programme.

A scheme for the sanction of interest free loans for starting of petty trade to Scheduled Castes to better their economic conditions is in operation in this State, The amount of loans ranges from Rs. 125 to a maximum of Rs. 15,000 according to the nature of the trade. Till the end of 1975-76, 9,784 persons have been given loans to the tune of Rs. 65.45 lakhs under the scheme.

Industrial Training Centres are run by the Director of Employment and Training for the benefit of Scheduled Castes and Scheduled Tribes. Stipends are granted to the trainees in these centres from the funds of the Harijan Welfare Department. Wherever possible, milk supply co-operative societies are also run for the benefit of Scheduled Castes and Scheduled Tribes.

Special coaching schemes are implemented to improve the employment opportunities for Scheduled Castes and Scheduled Tribes such as coaching for I.A.S. and I.P.S. examinations, Group IV Services Examinations of the Tamil Nadu Public Service Commission, training in typewriting and Shorthand, etc. There is reservation in favour of Scheduled Castes/Scheduled Tribes to the extent of 18% of posts in the Government of Tamil Nadu both Gazetted and Non-Gazetted Service. The actual position is that about 10% of the total posts in the State have been filled up by Scheduled Castes/Scheduled Tribes as against the reservation of 18%. Eighteen per cent. of seats in Medical and Engineering Colleges are reserved for S.C. & S.T. students. The number of S.C. & S.T. students admitted to Medical and Engineering Colleges in 1976-77 are 178 and 189 respectively. The reservation system is also being adopted in the matter of admission to Industrial Training Institutes and special stipends are granted to S.C. & S.T. students.

In order to wipe out caste differences and to develop a cosmopolitan outlook in the society, intercaste marriage between Harijans and other castes are encouraged by the Government of Tamil Nadu. Gold medals at the rate of 1.5 sovereigns of 14 ct. purity is given to each couple. So far, 417 intercaste married couples have been awarded gold medals. In addition to this, a cash grant of Rs. 200/- is given to each couple for the purpose of house hold utensils. So far, 112 couples have been awarded cash grants. Government also give 3 cents of house sites to such couples in rural areas. In Madras City, the Government have decided to allot 10 tenements to such couples from among the houses constructed by the Tamil Nadu Slum Clearance Board and also plots or houses within the 10 per cent reservation made for Scheduled Castes and Scheduled Tribes by Housing Board. A subsidy not exceeding Rs. 1,200/- will be given to each couple towards the purchase of these tenements or houses.

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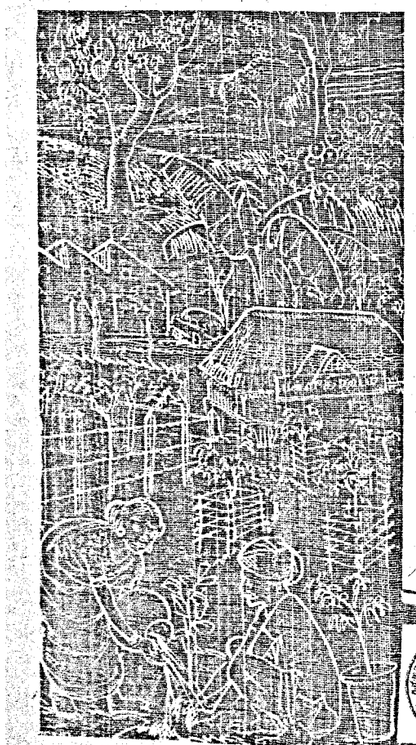


TREES MEAN RAIN-
RAIN MEANS FOOD-
AND FOOD IS LIFE.

"O! NANDALALA! I BEHOLD
YOUR GREEN COLOUR
IN ALL THE TREES
I SEE AROUND ME"

-SUBRAMANIA BHARATI-

PLANT, PROTECT AND PRESERVE.
GROW MORE TREES
AND MAKE TAMILNADU "GREEN"

ISSUED BY
DIRECTOR OF AGRICULTURE
TAMILNADU

Administration of Religious Bodies

51,000 Religious Institutions Have Landed Properties

Progress of "Operation Clean-up"

By

G.S. SESHADRI

Secretary, Commercial Taxes & Religious Endowment Department

Tamil Nadu can legitimately be proud that its temples and mutts have significantly contributed to the preservation of the nation's culture and heritage. This is primarily due to the fact that the State has always considered protection of public religious endowments as one of its functions from time immemorial.

The numerous regulations starting from the Madras Regulation Act VII of 1817, culminating in the Act presently in force (Act 22 of 1959) have helped to implement this policy.

Under the 1959 Act, Hindu public religious institutions are classified as listed and non-listed. Through the exercise of powers vested in the commissioner and his subordinate officers for the appointment of trustees, for approval of dhittams, sanctioning of budgets, audit of their accounts etc. supervision is being done. The entire expenditure on the administration of the department—except for a token sum of Rs. 1,00,000 per annum given by the Government from the state funds, is met by a contribution levied on these public religious institutions ranging from two to seven per cent of their annual income, besides a further levy of one-and-a-half per cent as audit fees from institutions having an annual income of Rs. 1,000 and more. Similarly, the expenditure on the salary and allowances of the executive officers appointed for the administration of the temples and endowments is recovered in full from the institutions. As all the institutions may not have the same capacity to bear the expenditure in this connection, it has been so arranged that only those institutions which have the capacity to pay are required to meet the cost, while free service is rendered for the supervision of other institutions.

A recent survey conducted by the Hindu Religious and Charitable Endowments Department revealed that there are over 51,000 religious institutions in this state having landed properties.

Public Complaints

With the ushering of the President's Rule, in the state, innumerable petitions and complaints from various sections of the public were received by the government alleging maladministration of these public religious institutions by the erstwhile trustees. The main charge was that the appointment of trustees had been politicised. Persons belonging to the then ruling party or from among their sympathisers had been appointed as trustees. Various allegations were also received about the mismanagement of the lands, buildings and sites belonging to the temples. Irregularities and favouritism in the matter of lease or sale of these lands, malpractices in the award of contracts for the construction and renovation works undertaken., diversion of temple funds for purposes totally unrelated to the endowments, discriminatory purchase of books and periodicals brought out by specific individuals and indiscriminate advertisements in party magazines were some of the major charges made against the erstwhile trustees.

The government, after careful consideration of these numerous complaints, appointed a Special Enquiry Cell consisting of a sernior administrative officer, a senior audit officer drawn from the Accountant-General's office and an executive engineer of the Public Works Department to enquire into the various allegations that were received by it.

Political Trustees Ousted

At the same time pending receipt of the enquiry report and findings, the government decided to tackle the problem both at the level of the temples and at the departmental level. By the President's Act (No. 24) of 1976, offices of all non-hereditary trustees appointed by the department earlier were terminated with effect from 1-6-1976. In temples where there were no hereditary trustees, persons carefully selected were appointed by the government to discharge the functions of the trustees. A large scale reshuffle of the executive officers was made and all temples with an annual assessable income of Rs. 10,000 and more were placed under their charge. In addition to the executive officers of the department, other departmental and government officials were appointed as 'fit persons' to discharge the functions of the trustees in many cases in addition to their own duties.

Second Lock Officers

In order to ensure that these fit persons who replaced trustees discharged their duties satisfactorily, a series of administrative measures were undertaken. In addition to the fit persons, officers of other departments were appointed as second lock officers to have joint custody of all the jewels and valuables and *hundis* in the temples. Clear directions were given that all receipts of the temples should be

STEADY PROGRESS IN WATER SUPPLY SCHEMES

EQUAL IMPORTANCE GIVEN TO URBAN & RURAL SCHEMES

The population of Tamil Nadu was 41.1 million as per the 1971 census. The urban population of 15.5 million is spread over two municipal corporations, 101 municipalities and municipal townships and 524 town panchayats. The rural population over 58,595 villages and hamlets comprising 12,347 village panchayats.

Of the 103 municipalities and townships and corporations, only 7 municipalities and 3 townships are yet to be provided with protected drinking water. A survey conducted in 1972 indicated that there were approximately 18,960 villages where the water supply was either inadequate, scarce or susceptible to water borne endemic diseases. To provide these municipal and rural areas with drinking water, the Tamil Nadu Water Supply and Drainage Board has been taking up various programmes at a steady pace. On an average about 1,750 villages were provided with drinking water per year for the last 4 years commencing from 1972-73.

During the latter part of 75-76 and during 76-77, Tamil Nadu had been experiencing unprecedented drought in 12 of its 15 districts. The Government ,therefore, took up a massive programme for providing drinking water supply in a very large number of villages and urban areas affected by scarcity. On April 3, 1976 a programme for sinking deep bore wells covering all the drought affected districts was launched, with the objective of sinking 6,700 bore wells at a cost of approximately Rs. 7 crores. To take up this programme, drilling rigs from all over the State as also from other States were mobilised. Each of these bore wells go down to a depth of about 120 to 300 feet and are mostly fitted with hand pumps. In Coimbatore district, where the depth of wells is about 250 to 300 feet, power pumps have also been installed in many sites. Within the short period of just 8 months, the entire programme of providing 6,700 new successful wells were completed, thereby providing as many drinking water supply points as were provided during the entire preceding 5 years. To tackle a few difficult pockets still remaining, another 1,000 deep bore wells are being sunk, and will be completed before the end of March 1977 at an additional cost of Rs. 1½ crore. To maintain these hand pumps and also the pumps installed earlier, the Government has also sanctioned a maintenance organisation costing annually Rs. 25 lakhs.

The deep bore well programme could not be of assistance to some of the villages of Tamil Nadu where the ground water is saline or scarce. For decades, people in these areas have depended for their drinking water supply on open rain-fed ponds, resulting in transmission of a variety of water borne diseases. During drought, even these ponds also dry out. To tackle the problem of these areas, the Government of Tamil Nadu has for the first time taken up several schemes for providing drinking water to these villages by a net-work of pipes fed from a common groundwater source at distances up to 40 km. A total population exceeding two lakhs will, for the first time, be enjoying the benefits of a perennial source of drinking water. The over-all cost of these schemes is expected to be of the order of Rs. 3 crores this year. Three schemes benefiting 51 villages and a population of about 40,000 have already been completed: The remaining work is in rapid progress. The schemes completed include supply for 44 villages in Ottapidaram Panchayat Union in Tirunelveli district and five hamlets in Rameswaram Island.

Apart from sinking bore wells, the government has sanctioned Rs. 97.5 lakhs for deepening 3,200 wells spread over the drought affected areas as also for improving water supply. These works were executed by the panchayat unions. Apart from this, a sum of Rs. 17.21 lakhs was also sanctioned to Ramanathapuram, Pudukottai and Thanjavur districts for deepening of Ooranis.

The drought has revealed serious lacunae in the information available regarding the drinking water position of rural areas. A new hamlet-wise survey has, therefore, been initiated. It is hoped to finalise the survey within the next few weeks and then review the priorities. The Government hopes, to provide protected water supply to all areas affected by scarcity and endemic diseases within the next 3 years.

Municipal water supply programmes have also been accelerated in the current year. As against an average expenditure in the past of about Rs. 5 crores per annum on urban water supply schemes, in 1976-77 expenditure is expected to be of the order of Rs. 8.2 crores. Sixty water supply schemes are now in progress. The most significant scheme is the programme for Coimbatore city and 27 neighbouring villages and towns. Coimbatore which hitherto was a chronically water-short city will by 1980 receive a supply of 22 million gallons as against the present seven. The Trichy scheme will increase the city's supply from 4 million gallons a day to seven millions. It is hoped to provide protected water supply to all municipalities and municipal townships within a period of three years.

The total expenditure in the year 1971-72 upto 1975-76 on rural water supply through the TWAD Board was of the order of about Rs. 13.6 crores. On the other hand this year's programme alone is expected to be of the order of over Rs. 12 crores covering almost as many villages as were benefitted in the last five years. **

T. V. ANTONY, I.A.S.,
SECRETARY,
Rural Development &
Local Administration Department

ELECTRICITY BOARD'S STEPS FOR MORE CONTACT WITH PUBLIC

With a view to establish direct contacts with the public on outstanding issues, a Complaint Cell has been formed in the Board in December, 1976. The Cell will receive petitions from the consumers direct and will dispose them of quickly without routing them through normal channel and subjecting them to usual procedures.

The efficiency in the administration and the organisation as a whole has been toned up. Strikes, gheraos, and demonstrations have become things of the past. There is wide-ranging co-operation between the management and the employees and a new spirit has permeated at all levels and the organisation is now more responsive than ever to public contacts and public service.

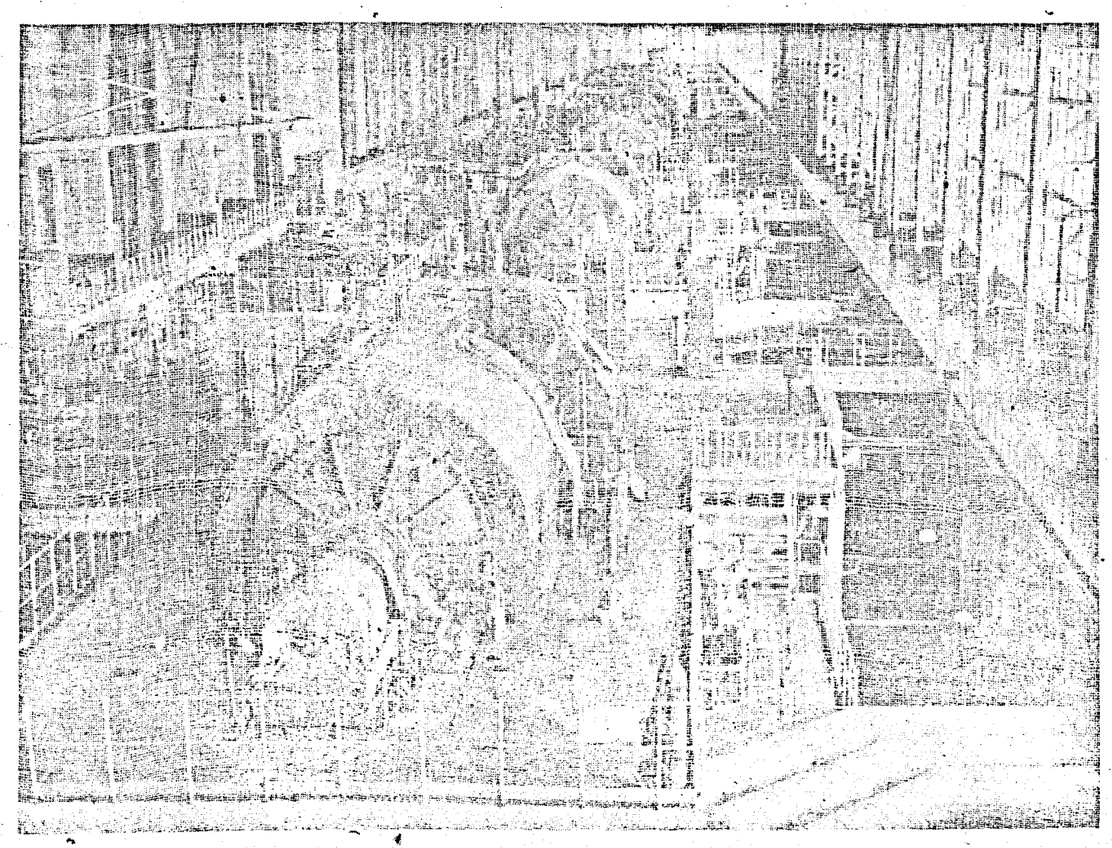
With a view to ensure professionalisation and functionalisation of management, officers are being deputed for various training courses with institutes of repute. Modern management techniques have been introduced and are being adopted in an extensive manner for project implementation and monitoring. System level performance is being closely monitored in order to effect reduction in inventory level, clearance of pending works in various areas and to induce a healthy competition among the systems.

Several economy measures to reduce cost of generation, transmission, and distribution, operation and maintenance and administration have been initiated. Steps have also been taken to prevent technical and commercial losses of energy. The reduction in line losses is of the order of 40 MU valued at Rs. 80 lakhs. The organisation for inspection of services has been strengthened by forming special surprise squads for each system to detect theft or misuse of energy. Mass-scale surprise raids have also been organised and conducted successfully.

Routine inspections covered 1.84 lakhs of services in 1975 ; this has risen to 5.57 lakhs in 1976. The total No. of services inspected by surprise were 1.05 lakhs in 1975 with 313 cases of energy pilferage. The services inspected in 1976 numbered 4.67 lakhs with 606 cases of theft of energy. The revenue assessed as realisable from these cases including defective services is Rs. 2.042 lakhs for eleven months in 1976 as against Rs. 6.23 lakhs for 1975. The inspections are deterrent in nature in preventing malpractices and also infusing a sense of fear in the minds of erring consumers.

[From the article by Thiru C. N. Raghavan, I.A.S., Secretary, P. W. D.]

Generator hall in Neyveli Thermal Station



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TAMIL NADU LABOUR WELFARE FUND

Significant Role in Labour Welfare

By
A. PADMANABHAN, I.A.S.,
Secretary, Labour & Employment Department.

Labour Welfare plays a significant role in the field of labour relations in the industrial society. Though it is the primary concern of the industrialists to provide the labourer all his needs, the Government of Tamil Nadu has taken the initiative to enter the field of labour welfare.

Various labour legislations such as Plantation Labour Act, Motor Transport Workers Act and Factories Act dn provide for labour welfare for the benefit of the workers. Yet the statutory provisions do not cover all the needs of the labour community and there is a wide gap between the statutory labour welfare measures and the actual needs. This resulted in the enactment of the Tamil Nadu Labour Welfare Fund Act and the creation of Labour Welfare Fund with annual subscription from both the employer and employee at the rate of Rs. 2/- and Re. 1/- respectively. Nearly 20,000 industrial establishments employing 6,83,464 workers fall within the provisions of this Act.

This Fund is administered by the Tamil Nadu Labour Welfare Board under the Chairmanship of the Adviser(S) to the Governor and 19 other members. The employers and the employees have been given due representation on the Board, so that the workers and the employers can suggest useful schemes to improve the lot of the working class. The Tamil Nadu Labour Welfare Board meets once in a quarter and decides on useful labour welfare measures to be implemented.

TEN WELFARE CENTRES

The Board is now running 10 Labour Welfare Centres at 1. Ambattur (Madras), 2. Sembiam (Madras), 3. Coimbatore, 4. Madurai, 5. Dindigul, 6. Kovilpatti, 7. Somanur, 8. Gudiyattam, 9. Vaniyambadi and 10. Sivakasi. These places are industrially concentrated areas. The tailoring classes for women workers and the wives and dependants of workers are conducted in these centres. Each trainee is given a stipend of Rs. 30/- p.m. This will help the workers to get a substantial increase in family income as their wives or dependants, on completion of the tailoring course, can also earn independently. In these Labour Welfare Centres a trained Tailoring Instructress is employed to impart tailoring to the trainees. The duration of the course is one year and the trainees appear for the Government Technical Examinations for diplomas. A Kindergarten school is also run in each of the above welfare centres where the children of the labourers are admitted. The children are given pre-school education. They are supplied with a meal and milk daily.

A qualified Balasevika is appointed to conduct the class. Toys are given to these children for playing. The Board will be very shortly supplying Balahar and nutritious food to the children in collaboration with CARE organisation. The Board has also a proposal to bring the children under the Integrated Health Package Scheme.

Another decision of the Board is to open Reading Rooms for the workers. Four reading rooms, two at Madras and one each at Coimbatore and Madurai, are being run by the Board. News dailies and magazines are supplied in the reading rooms for the workers. This will help the workers to gain more knowledge.

A Magalir Manram at Thiru-Vi-Ka. Nagar at Madras is run entirely financed by the Board. This is a registered society run by the family members of the workers. In this Child CARE Centre run by the Magalir Manram, 50 children below 5 years of age are given milk and kindergarten classes are conducted.

A multi-storeyed office building at a cost of Rs. 35 lakhs is being constructed on an area of 6.33 ground in Anna Salai donated by Government of Tamil Nadu. The building will house the office of the Tamil Nadu Labour Welfare Board. The surplus space will be rented out and it is expected to fetch a recurring revenue of Rs. 4 lakhs per annum to the Board for taking up labour welfare measures. The Governor of Tamil Nadu recently laid the foundation stone for the building.

There is a proposal to construct a stadium at Tondiarpet with facilities for indoor and outdoor games for workers.

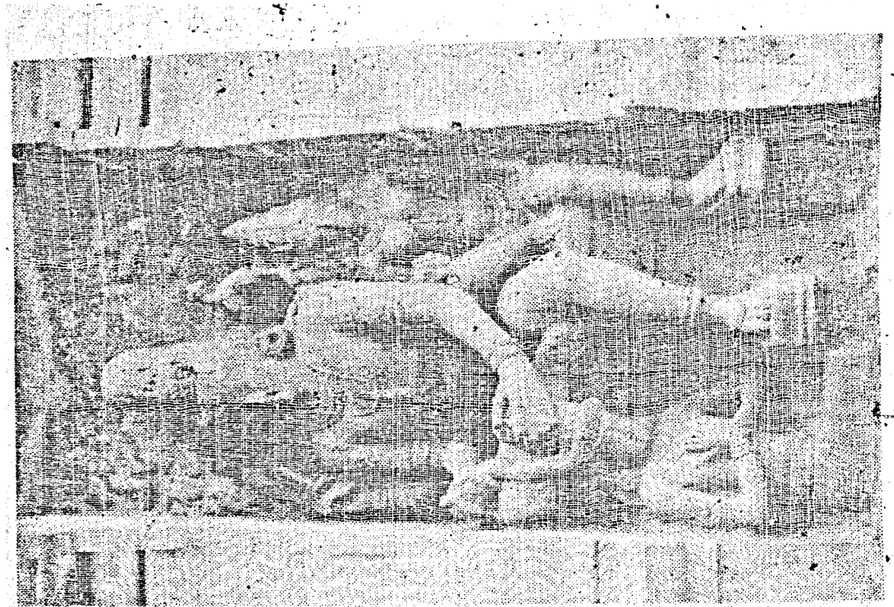
The incidence of Tuberculosis is more prevalent among the workers than among other people. This is perhaps due to the unhygienic condition of their employment. The socio economic condition of our workers is very bad and they find it difficult to afford treatment immediately after the disease is diagnosed. They also find it difficult to get admission in the few TB hosiptals in this State. The Board is therefore constructing a TB Ward with 26 beds in the TB Sanatorium at Tambaram exclusively for the workers at a cost of Rs. 3.6 lakhs. The Governor of Tamil Nadu recently laid the foundation stone for the workers' ward.

Holiday Homes in Ooty and Yercaud ready :

Holiday Homes at the places of tourist attraction and health resorts will be of much benefit to the workers who go on sight seeing tour for recreation. The Board has therefore decided to construct holiday homes for workers at Mamallapuram, Courtallam, Kodaikanal, Ooty and Yercaud. The Holiday Home at Mamallapuram will come up shortly. The Holiday Homes at other places will spring up in the course of this year. **Private Buildings are being rented at Ooty and Yercaud as an *ad hoc* measure to locate the Holiday Homes as the construction of Holiday Homes at these places may take some time. The workers may come, either in groups or with families, and stay in the holiday homes for a short period to get relaxation.**

The Board felt that workers would be interested in seeing films of educational importance on working conditions of labour in this country and other countries. So it has been decided to purchase a film projector for the use of workers.

The Board has many more ambitious schemes to promote the welfare of the labourers and their families. The Board is actively and untiringly functioning to provide more and more welfare measures to the workers so that the workers get rich dividend in return for their hard earned money contributed to the Labour Welfare Fund.



Outstanding sculptures such as the one above in the Gangaikondacholapuram Temple will be protected and preserved in all Temples.

The Thiruchendur Temple (TOP LEFT) and Chidambaram Temple (LEFT) are being taken up for renovation.

Temple Renovation and Restoration Works Can be Taken up Only After Scrutiny by Archaeological Department

credited only to Account No. 1 which stands under the Rules in the name of the chairman Board of Trustees. Any transfer from Account No. I to Account No. II, which stands in the name of the executive officer, has to be done only with the prior clearance from the deputy commissioners. Executive officers should spend only in accordance with the approved dhittams and budgets. Their powers for creation of new posts as trustees were curtailed. Printing or *archana* tickets in which according to the allegations, considerable abuse had taken place was centralised at the level of the assistant commissioners deputy commissioners and are issued with their seal after maintaining proper and regular accounts. All civil works where estimates had been approved but work had not actually been begun were stopped for *denovo* examination of the necessity and availability of funds. For works which were already in progress, it was ordered that payments should not be made without recording measurements and further that no final payments should be made without check-measurement by the departmental engineers. Restrictions were also placed on the issue of advertisements limiting such issue only for the purpose of informing the public about the arrangements for festivals.

Verification Wing Created

At the departmental level, all those officers who had been in one station or in their home districts for fairly long periods, were shifted to other stations or other districts. Restrictions were imposed on the commissioner with regard to release of amounts from the Common Good Fund and on diversion of surplus funds from the institutions without prior clearance of the government. An advisory committee was constituted to assist the commissioner, consisting of representatives from different walks of life. To speed up the disposal of judicial proceedings pending for long with the regional deputy commissioners, a special post of deputy commissioner with powers to have sittings in various districts was created. Another post of executive engineer was created to assist the public religious institutions by fixing fair rent for the buildings both residential and non-residential owned by them, so that the institutions can augment their resources. A drive for collection of arrears of contribution, audit fees and the executive officers' salaries was launched and between 1-2-1976 and 30-11-1976 over a crore of rupees was collected. The drive is still continuing. Audit objections which had piled up over the years to over four lakhs relating to more than 15 faslis and involving an amount of over Rs. 18 crores are being tackled vigorously by arranging division-wise joint sittings of the audit and administrative officials. Wherever misappropriation or misapplication of rules have been noticed, surcharge proceedings have been initiated to recover the loss sustained by the institutions. Proposals are under consideration of the government to strengthen the verification wing, so that the verification of jowels and other valuables belonging to the religious institutions are brought as up-to-date as possible, quickly.

Proceedings for recovering losses

Provision of Rs. 15 lakhs has been made in the current year's budget and Rs. 17 lakhs in the next year's budget for assisting various institutions for renovation. It has, however, been made clear that renovation committees, wherever formed, should first obtain the approval of the commissioner and should have the executive officer in charge of the temple as its secretary, the secretary being charged with the responsibility to maintain accounts of the funds collected and received for such renovation. The renovation committee should first have the plans cleared with the directorate of archaeology, so that the director of archaeology could ensure and guide the committee in the matter of preservation of the original architectural pattern of the temple as well as the valuable inscriptions if any therein. A scheme has also been drawn for the protection of icons, of great antique value found in the temples.

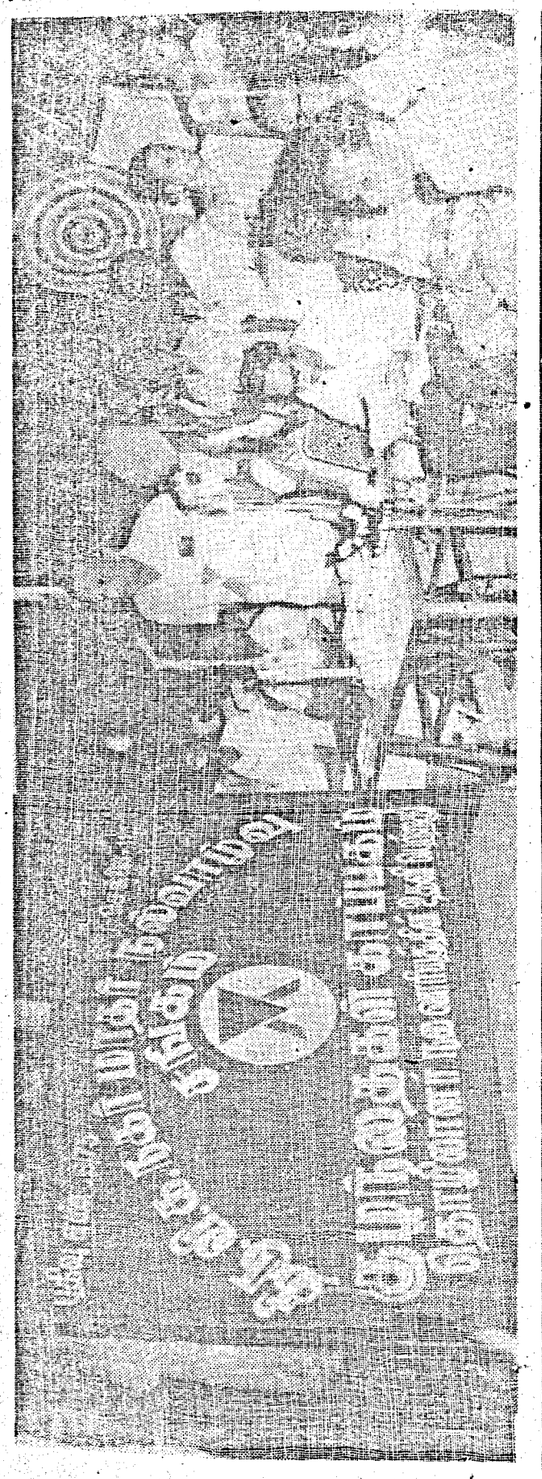
Temple Restoration

The department is also collecting details of ancient temples that have fallen into decay, so that they could be restored in a phased manner. As a first measure in this direction, arrangements have been made to reconstruct the Tranquebar temple in Thanjavur which has been badly affected by sea erosion. Similarly master plans have been drawn for effecting improvements in a phased manner, in a number of temples including such famous temples as Arulmigu Sabanayagar temple, Chidambaram, Arulmigu Subramaniaswami temple, Tiruchendur, Arulmigu Sriranganathaswami temple, Srirangam.

Social Welfare activites also continued

The department is also continuing its social welfare activities rendered out of surplus funds of the religious institutions. Contributions have been made in the past to the various social welfare schemes undertaken by the government. Two deaf and dumb schools, three mercy homes, 204 libraries, 22 siddha dispensaries, one allopathic dispensary and a number of orphanages (with over 3,000 children) are being maintained out of the temple funds. **Seven colleges and 18 high schools are run under the auspices of the various religious institutions in this State. Steps have also been taken to streamline the administration of these colleges and schools and to raise the standard of education.**

The state government is quite aware that this task of managing the innumerable number of religious institutions cannot be left for long periods in the hands of officials alone and it is contemplating association of leading non-officials by appointment as trustees from among persons of integrity with devotion to the cause and service.



THIRU V. KARTHIKEYAN
Adviser to Governor of Tamil Nadu

On 16-2-1977 Thiru V. Karthikeyan assumed office as Adviser to the Governor.

Re-allocation of Subjects

Consequent on the appointment of Thiru Karthikeyan as Adviser, the Governor has directed re-allocation of business of Government among the Advisers as follows :—

Thiru P. K. DAVE : Public (Law and Order, Political, Political Pension, Foreigners and Officer on Special Duty) Finance, Agriculture, Animal Husbandry and Milk Projects, Forests and Fisheries, Health and Family Planning, Medical Services and Medical Education, Housing, Commercial Taxes, Registration and Legislation on Chits and Prohibition and Excise.

Thiru R. V. SUBRAHMANIAN : Education, Social Welfare, Industries, Khadi, Handloom and Textiles, Public Works, Labour and Employment, Food, Co-operation, Religious Endowments and Waqfs and Tourism.

Thiru V. KARTHIKEYAN : General Administration, High Court Judges, District Judges, Matters relating to Indian Civil Service and Indian Administrative Service Officers, District Revenue Officers, Elections, Official Language and Ex-Servicemen, Personnel and Administrative Reforms, Home Department (including Information and Film Technology) Revenue, Law, Rural Development and Local Administration, Transport (including Ports and Government Press) and Legislature.

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HOW SIDCO HELPS SMALL INDUSTRIES WITH RAW MATERIALS

It has served more than 5000 Small Scale industries by supplying materials worth Rs. 2403 lakhs.

WITH MACHINERY UNDER HIRE PURCHASE SCHEME

1202 entrepreneurs secured machinery worth Rs. 532 lakhs from 1970 to 1974. From 1.4.74 under the TIIC-SIDCO CONSORTIUM SCHEME 781 small scale entrepreneurs have been recommended to the tune of Rs. 1042 lakhs for purchase of machinery.

WITH WORKSHEDS

315 worksheds on SIDCO land at Ambattur, Kurichi, Ranipet, Trichy, Mathur, Namakkal, Krishnagiri and Kumbakonam at a cost of Rs. 285 lakhs, 127 sheds to entrepreneurs on their own land at a cost of Rs. 89 lakhs.

WITH GRANT OF SUBSIDY IN BACKWARD AREAS

Subsidy for 391 units involving 85.5 lakhs has been sanctioned under the Central Subsidy Scheme providing employment opportunities for 9951 persons. Further sanction of Rs. 45 lakhs to 200 units is in process.

ASSISTANCE TO EDUCATED UNEMPLOYED AND TECHNOCRATS.

1219 Educated Unemployed candidates including 805 technocrats have been assisted by margin money for purchase of machinery, construction of sheds, who in turn provide employment opportunities for 15,900 candidates.

FEASIBILITY REPORT

Rs. 74,000 has been granted as assistance to prepare feasibility reports and for consultancy services.

SIDCO proposes to assist small Industries by setting up Industrial complexes.

SIDCO for sound, stable and speedy assistance

TAMIL NADU SMALL INDUSTRIES DEVELOPMENT CORPORATION LIMITED
(A Government of Tamil Nadu Enterprise)
No. 5, Greams Road,
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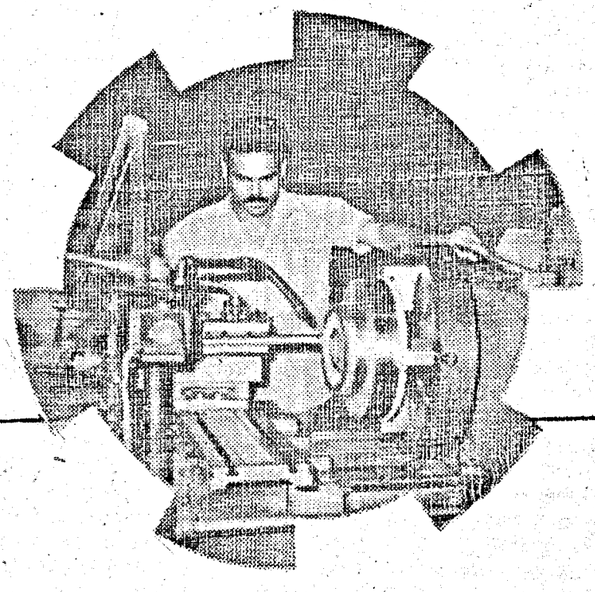
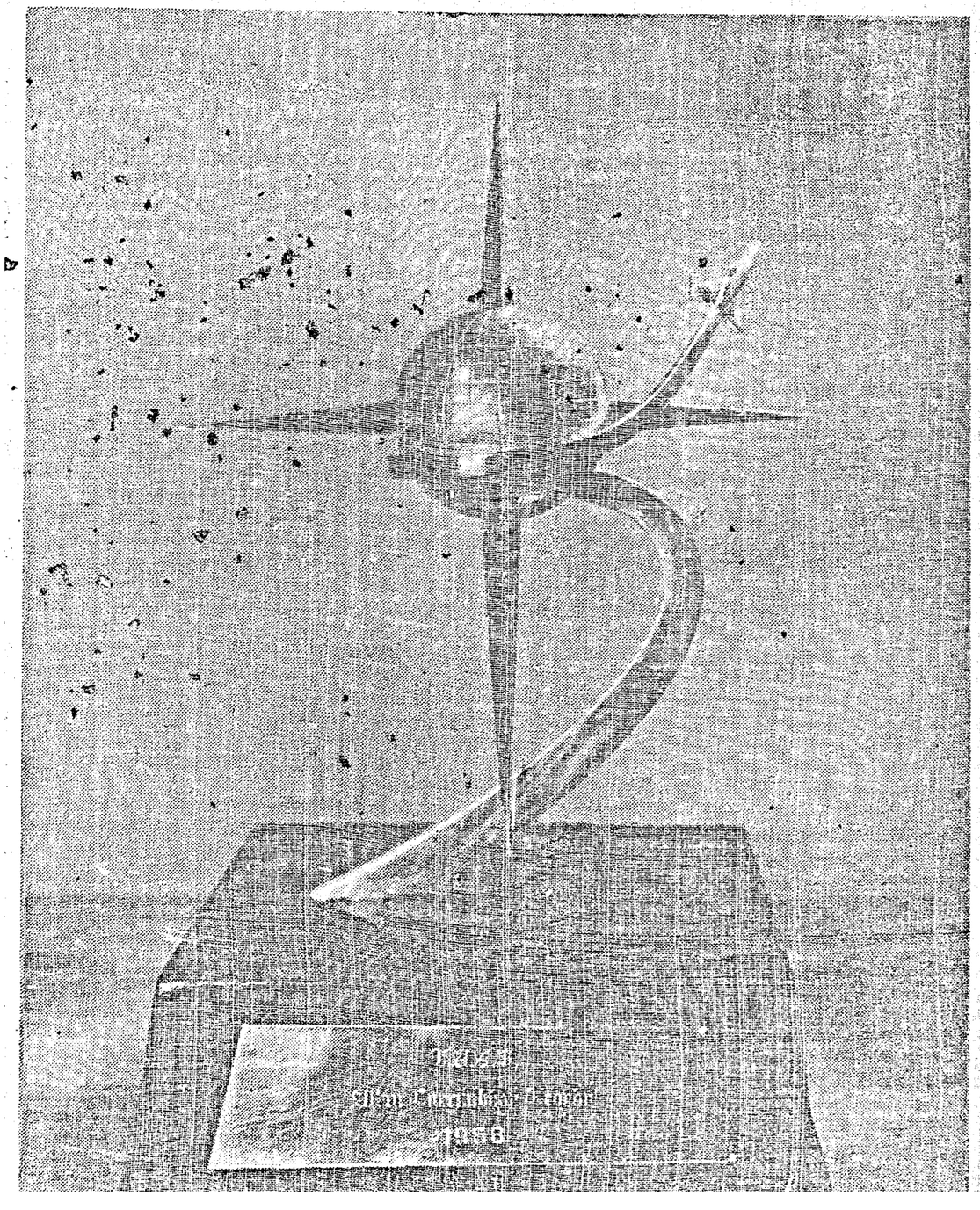
Sidco at your service



The "Allan Currimboy Trophy 77" awarded to the Tamil Nadu Tourism Department this year for its publicity efforts to promote Tourism.

Tamil Arasu

Vol. : VII MARCH 1977 Issue : 4



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20 POINT PROGRAMME

IS A BLUE PRINT FOR PROGRESS

IN THE FARM

IN THE FACTORY

IN THE CAMPUS

WORK IT WITH MIGHT AND MAIN

A PROGRAMME OF WIDE -ANGLED VISION
IT CALLS FOR SINGLE -MINDED DEVOTION.

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Tamil Arasu

MARCH, 1977 50 Ps.

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BETTER TECHNIQUES OF WATER MANAGEMENT

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Agriculture Department Starts Demonstration Plots

The State Department of Agriculture has started a Central sponsored 3 year operational research project on water management in Madurai district in a block of 400 hectares in the Periyar River command area. The research will cover the means of reducing the quantum of water used in this paddy growing area, the possibility of growing other crops with a view to higher productivity per unit of land/water, the problem of percolation of water in the field and seepage in transit from canals and irrigation timing for different crops. The Department has already a water conservation project covering 10,000 hectares in Thanjavur and plans to extend this to water management of irrigation tanks and its best utilisation on command area development basis.

* * *

NEW PADDY AND CUMBU VARIETIES

xxxxxxxxxx

Agricultural University's Latest releases

In January the Tamil Nadu Agricultural University released 7 new varieties of various crops. One was 00.40 paddy called Rajarajan with a duration of 170 days, blast resistant, yielding 7 tonnes per hectare, which will replace 00.25 in Thanjavur, Coimbatore, Tirunelveli and Kanyakumari and produce 10 lakh tonnes of additional production over 5 lakh hectares during Thaladi and Samba. A second variety is 00.21 cholam with a duration of 105 days and the possibility of 3 crops per annum, pest resistant, yielding 6 tonnes per hectare with high straw yield in replacement of COH-2. A third variety was 00.6 cumbu yielding 2 tonnes per hectare in 95 days. The variety is susceptible to ergot and should be controlled by adjusting the sowing time to winter and appropriate plant protection action. Another variety is the 00.3 red gram which can be grown in rainfed lands, resistant to root rot and bores and yields 60 per cent higher output than 00.2. A new variety of lablab CO-9 can be grown all the year round and yields in 120 days 7 tonnes of green pods, 00.2 Amaranthus is a quick green yielder in 25 to 30 days of 10 tonnes of greens per hectare. A new chillies variety Madurai 1 which can be grown in Madurai, Ramanathapuram and Tirunelveli is of 200 days duration and yields 18 quintals of pods per hectare.

* * *

FORAGE CROPS

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Separate Dept. Started in Coimbatore Agricultural University

In order to improve the State's supply of cattle fodder, the Tamil Nadu Agricultural University has started a Department of Forage Crops to breed new varieties and formulate the technology to grow new crops.

* * *

SUN-FLOWER CROP OF 85 DAYS

xxxxxx*vxx

From Koilpatti Experimental Station

The Koilpatti Experimental Station released in January a new variety of sun-flower (an oil seed crop) HA-115/1, with an 85 days duration and can be grown in all seasons in both rainfed and irrigated lands with a yield potential of 1,000 kg of seeds per hectare, under rainfed and 2,000—2,500 kg per hectare under irrigated conditions. It can be grown as a border crop in irrigated groundnut, chillies and cotton and when mixed in cropping with maize, cumbu and cotton improves its seed setting.

* * *

LENGTH OF SURFACED ROADS

Tamil Nadu's Distinction

Over 62 per cent of road length in Tamil Nadu is surfaced, according to study conducted by the Union Government. The All India average of surfaced roads is 34 per cent.

* * *

TO PROMOTE INDUSTRIES IN VILLAGES

SIDCO Plans Infrastructure for 1000 Villages

SIDCO is planning to construct 1,000 sheds in rural and backward areas of the State to provide infrastructural facilities for the spread of small industries in those areas.

* * *

MID-DAY MEALS FOR COLLEGE STUDENTS

A common kitchen centre at a cost of Rs. 20,000 has been started in Thyagaraja Engineering College, Madurai to feed day scholars in the area. Similar centres are planned at Usilampatti and Courtallam. The aim of the scheme is to provide cheap but wholesome meals to the poorer sections of the student community living outside the Hostels, particularly those hailing from rural areas and also those whose parents or guardians (income is small). Under this scheme, the State Government has recently received sanction to the tune of roughly six and half lakhs of Rupees covering 33 colleges.

To ensure availability of essential goods at controlled prices, 350 co-operative societies are being started in Tiruchirapalli, Thanjavur, Madurai, Ramanathapuram and Coimbatore districts with Union Government assistance of Rs. 12.92 lakhs.

Massive Step-up In Plan Expenditure In TAMILNADU

RS 227 CRORES IN 1976-77 : RS 260 CRORES IN 1977-78

THE Budget of the Government of Tamil Nadu for the year 1977-78 was laid on the Table of Lok Sabha on 28-3-77 by the Union Finance Minister Thiru H.M. Patel. The following is the Text of the Annual Financial Statement:

The Budget Estimates for 1976-77 envisaged a revenue deficit of Rs. 5.32 crores and a closing cash balance of minus Rs. 2.98 crores. In the Revised Estimates, the revenue deficit is estimated at Rs. 12.78 crores with a closing cash balance of minus Rs. 1.18 crores. The major factor which has led to the increase in the revenue deficit is the expenditure on drought relief and flood relief. The Plan and Non-Plan expenditures on drought relief have been Rs. 27.52 crores. Rs. 4.1 crores will be spent on flood relief. The total expenditure of Rs. 31.62 crores on the relief for natural calamities has been covered to the extent of Rs. 18.75 crores by way of advance Plan assistance from the Centre.

The approved Plan outlay for the current year was Rs. 201 crores. It is now anticipated that Plan expenditure will be of the order of R.s 227 crores in 1976-77.

In the Budget as now proposed for 1977-78, the revenue receipts are estimated at Rs 635.91 crores and the expenditure on Revenue account at Rs 645.81 crores, resulting in a revenue deficit of Rs 9.9 crores. The capital expenditure in 1977-78 has been estimated at Rs 62.69 crores.

A Plan outlay of Rs 260 crores has been approved for 1977-78. The provisions in the Plan for major sectors are: Power—Rs. 95 crores; Irrigation—Rs 25 crores; Agriculture and allied sectors—Rs 30 crores; Industry—Rs 14 crores; Transport and Communications—Rs 24 crores; Water supply and sewerage—Rs 25 crores; Housing and Urban Development—Rs 16 crores; and other social and economic services—Rs 18 crores.

The overall effect of the transactions on the Revenue, Capital and Loan accounts will result in a closing cash balance of minus Rs 13.92 crores at the end of 1977-78. Government will endeavour to fully eliminate this deficit through a variety of measures including economies, better collection of taxes and other dues to Government and by improving the financial performance of the public sector Corporations. We can also expect a measure of buoyancy in receipts due to better fiscal discipline and improved efficiency in the operations of Government, provided seasonal conditions are reasonably normal. Specific targets for economy will be formulated and implemented in all departments of Government. Similarly, intensive reviews have been undertaken of the financial performance of public sector undertakings and improved surpluses on their part will be planned for and achieved during the year.

At present, we are seeking a 'Vote-on-Account' for five months on the basis of the Annual Financial Statement placed before theHouse.

	Accounts 1975—76	*Budget Estimate* 1976—77	*Revised Estimate* 1976—77	*Budget Estimate* 1977—78
	(IN CRORES OF RUPEES)			
I. Consolidated Fund—				
Revenue Receipts	5,63.36	5,75.63	6,14.49	6,35.91
Expenditure met from Revenue (Net)	5,57.92	5,87.95	6,27.27	6,45.81
Surplus or Deficit on Revenue Account	5.44	—12.32	—12.78	—9.90
Capital Receipts	1,78.74	2,86.84	1,56.30	2,45.65
Expenditure met from Capital including Loans and Advances (Net)	2,22.39	3,21.99	1,83.05	2,85.01
Deficit on Capital Account	—43.65	—35.15	—26.75	—39.36
Total Consolidated Fund (Net)	—38.21	—47.47	—39.53	—49.26
II. Contingency Fund (Net)	5.06	—	—	—
III. Public Account (Net)	49.84	43.75	33.06	36.52
Total Net Transactions (I II III)	16.69	—3.72	—6.47	—12.74
Opening Balance	—11.40	—6.26	5.29	—1.18
Closing Balance	5.29	—9.98*	—1.18	—13.92

* Does not include additional mobilisation of Rs. 7.00 crores.

For the horizontal joints between wall panels and roof panels, the top reinforcement protruding from the peripheral ribs of the panels are connected together running a tie bar. The joint is then filled with by M. 250 grade concrete with aluminium powder to prevent shrinkage cracks.

The external joints are sources of penetration of mastic and water. An effective treatment for the external joint is a challenging problem facing the construction engineers throughout. There has been no development of materials for this joint. A sealant strip in tar felt manufactured by Shalimar tar products struck on the inner face of the projecting ribs of the panels and joints filled from outside by mixtures of asbestos fluff and Armarall heavy duty mastic manufactured by Westrex Engineers, Bombay is being tried in this project.

SITE ORGANISATION AND ERECTION

Site organisation and the production is planned with the following assumptions :

1. Only one tower crane is available for handling erection work.

2. The casting yard is located in continuation of line of blocks and stacking yard is placed opposite to the casting area.

3. The crane is operated nearly 12 hours of the day time.

Production is planned in such a way that the panels will have an age of at least 15 days before it is erected. Casting platform of 2,000 sq. m. was made ready and 57 sets of moulds manufactured to do casting. The casting sequence and the number and type of panels to be cast are predetermined. The sequence of production is geared to the proposed erection schedule. 858 number of panels are required for erection of one block. As minimum of one mould per type of panel is available, all types of panels are cast simultaneously. The maximum output of casting is 27 panels per day involving 230 sq. m. of panels. The casting yard is designed for the use of limited area, and it is not possible to erect the panels straight from the casting platform. Hence panels covering the production of 15 days are stacked in specially made stacking frames.

The erection is done block by block in nearly 35 days per block. In the erection operation leader trolleys moving on the crane track are used to feed the crane with panels for the erection. This reduces the number of movements of crane to and from the stacking yard to pick up each element. The trolleys are loaded in the beginning of the shift with the help of the crane. The crane is then moved into the erection point. The trolleys are then pushed on the track within the reach of the crane and erection of the component is done from one location. The trolleys are loaded to suit sequence of erection of panels and they are returned to the stacking yard to repeat the operation in the afternoon.

Layout and width of the panels are first marked with the help of thedolite. Wall panels are lifted off stacking yard by slings and hooks. The crane places the panels over the marked position. A wet mortar receives the panels. The props connected to the floor at one end are attached to the wall panels in an inclined position. The crane hooks are then released for bringing the next panels. The adjustments of the panels is done by wall props. The wall panels erected are jointed by in-situ concrete.

In the designed sequence of erection, floor panels are erected on to the wall panels wi h the maturity of atleast 24 hours to the joint concrete. The wet mortar pad one to 2 cm. thick is laid over the top of wall panel. The floor panels are hooked to the crane with the help of spreader beams and positioned over the mortar pad. On completion of erection of floor panels over two or three rows of room the joint reinforcements are threaded through overlapping loops. Concrete is then poured in the floor joints. The erection of wall and floor panels are carried out in a sequence to complete floor by floor.

FERRO CEMENT WATER TANK

Ferro cement water tanks have been provided for these prefabricated flats. Each block has been provided with 2 Nos. of tank consisting of 12 compartments each having a capacity of 120 gallons. The ferro cement tank is made up of 5 cm. thick base slab, 2.5 cm. thick cover slab, all cast in cement mortar 1: 2. The base slab is reinforced with two layers of chicken mesh of 10 mm. X 10 mm. X 10 gauge and one layer of 100 mm. X 100 mm. X 10 gauge weldmesh at centre. The side walls and cover slab are reinforced, with one layer of chicken mesh (10 mm. X 10 mm. X 10 gauge) and one layer of welded mesh (100 mm. X 100 mm. X 10 gauge). The ferro cement tanks are cast in a plain platform in Ground floor and cured in the ground for 15 days. After the curing period is over the tanks are lifted, by the crane and placed in position over the terrace. The advantage of the ferro cement tanks are as follows :

1. They are leak proof.

2. They are lighter in weight. The weight of a ferro cement tank with 12 compartment is only 2,200 kg. as against 14,500 kg., the weight of the conventional water tank with brick wall and R.C.C. slab.

3. The ferro cement tanks are cheaper and economical when compared to the cost of conventional water tanks with side walls in brick wall. The cost of a ferro cement tank with 12 compartment is Rs. 2,600/- as against Rs. 3,000/- required for conventional water tank in brick wall.

WOOD WORK

The entire wood work required for this project (Doors and windows) has been manufactured in the Wood Working Unit set up by Tamil Nadu Housing Board, where provisions exist for ascu treatment and seasoning. The frames of doors and windows are made of treated secondary species of timber and they are fixed in the internal or external wall panels at the time of casting the panels itself. The shutters for the doors and windows are made of teak wood. The windows have been provided with glass panels to economise the cost and to improve the appearance of the building.

ADVANTAGES AND DISADVANTAGES OF PRECAST CONSTRUCTION

The advantages of precast construction are :

1. Economy in scaffolding and form work.
2. Economy in cost of mould through repetition.
3. Mass production.
4. Production is independent of weather conditions in factories.
5. Reliable products.
6. Speed of construction.
7. Better quality of work.
8. Less shrinkage forces on the structure.
9. Facility for routine testing of components.
10. Special joints for isolation of vibration, noise etc. can be introduced.

The disadvantages are :

1. To ensure monolithicity and and to take care of free ended conditions more reinforcement will be necessary in some cases.
2. In case handling and erection stresses are very excessive, extra reinforcement has to be provided.
3. To avoid damage and breakage more care is needed in handling.
4. Joints between the panels require careful treatment as otherwise they will facilitate entering of rain water inside.

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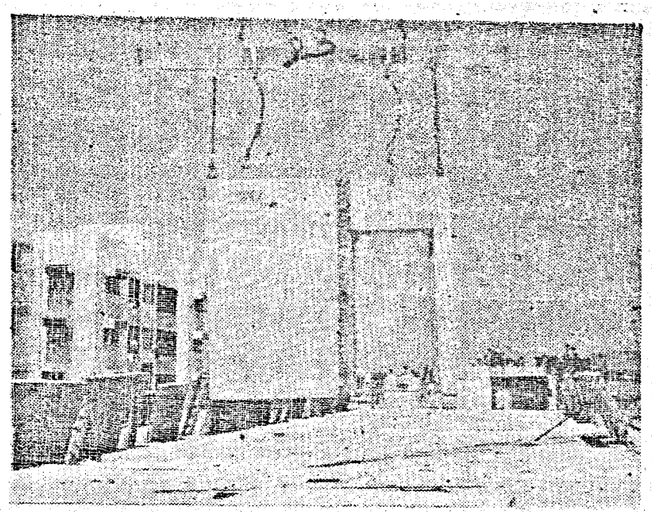
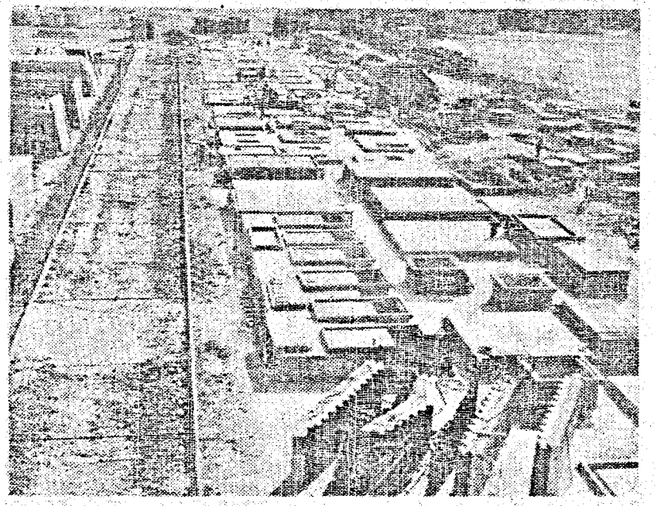
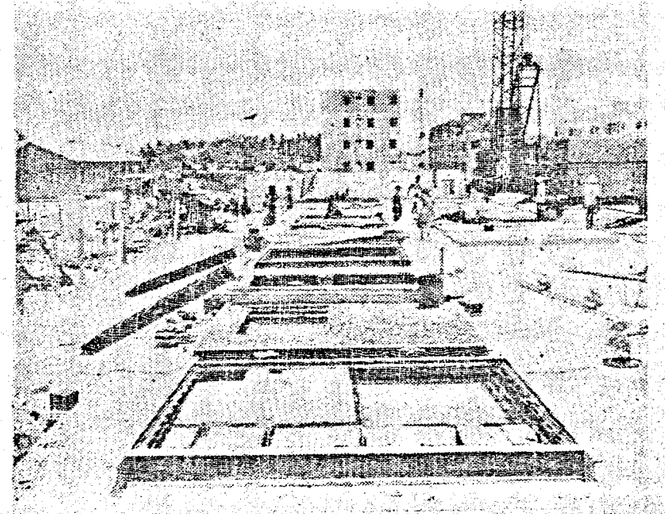






TOP : Prefabricated panels being stacked.

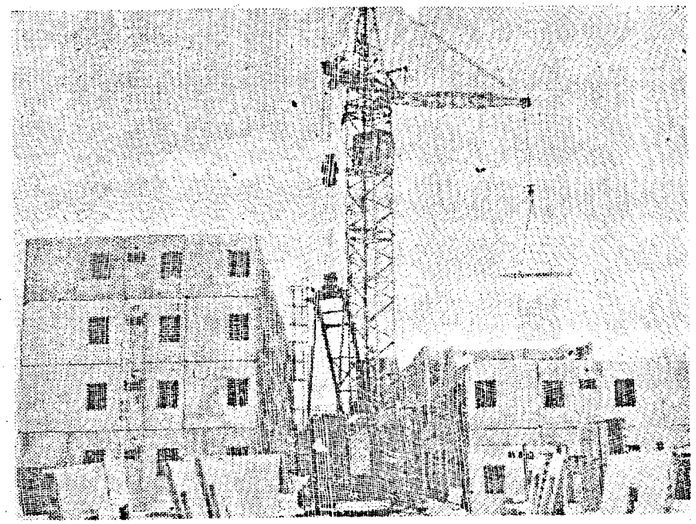
MIDDLE : Floor panel through in casting yard.

BOTTOM : Internal wall panels being cast.

Tamil Nadu Makes Beginning With Pre-Fab Housing

Pioneering Work By T. N. H. B.

by
B. A. JEYAPALAN, B.E.,
CHIEF ENGINEER,
TAMIL NADU HOUSING BOARD,
MADRAS—600 035



Pre-cast room-size components for walls, roofs and floors are laid easily by this 80—ton crane capable of loading upto 40 metre height.

THE traditional methods of construction in India consist of craft based processes like masonry, carpentary, bar bending etc. used in masonry construction or reinforced concrete. These processes involve lesser investment in equipment and capital finances and provide employment to large number of people and are therefore suited to the conditions prevailing in our country. Therefore, traditional materials and building techniques would continue to be of advantage in building low cost large scale housing projects. Still however, in urban centres especially in metropolitan cities where we face huge backlog of housing, it has become a matter of urgency to build large number of houses economically at a fast rate to wipe out the shortage. In the metropolitan city of Madras, the housing shortage as on 1st July, 1970 has been estimated as 3.37 lakhs. At the rate of 2,000 to 4,000 houses per year by public agencies, it will never be possible to achieve the target with traditional methods of constructions. Besides the backlog, the housing shortage in urban areas is further aggravating due to influx of large population and natural increase in population at the rate of 3.5 per cent per annum. Hence prefabrication will be only solution to solve the mass housing programme and to speed up the building construction work. Large panel prefabrication will be only solution to solve the mass housing programme and to speed up the building construction work. Large panel prefabrication has been employed for the first time in a housing project of Tamil Nadu Housing Board at Besant Nagar, Madras. This project has been undertaken by Tamil Nadu Housing Board as an experimental project in collaboration with the Structural Engineering Research Centre and the National Buildings Organisation. The total cost of the project is Rs. 75.00 lakhs excluding the cost of land.

Special Features

Although factory oriented prefabrication is largely adopted in most of the developed countries, conditions in most of the developing countries make on site prefabrication a more attractive proposition. This does not require use of heavy equipment, except a crane for handling and erection of the components. Further investment on capital will be less, no transport problem will be involved and relatively unskilled labour can be used for most of the operations. Hence on site prefabrication has been adopted in this project.

The system consists of precast room size components for walls, floors and roofs. Each flight of staircase is also precast. All wall panels are load bearing, with floor and roof panels supported on them. For casting precast panels, local materials such as bricks, hollow clay blocks and fly ash have been utilised. The handling and transportation of the panels are done with the help of 80 Tonne metre rail mounted tower crane which can move at a speed of 20 metre/minute. The tower crane has been hired from Structural Engineering Research Centre Institute, Adyar, Madras. The operating radius of the crane is 20 metre and its height is 40 metre. The crane can be operated along either direction with slowing and hoisting arrangements. The distance between the rail gauge is 4.50 metre and the weight of the crane is 70 M Ton including the counter weight. Facilities are available to operate the crane from two different levels with separate cabin to suit the need of tall structures. The power required for operating the crane is supplied with a separate transformer arrangement to avoid fluctuation in voltage. The structural rigidity for the building is achieved by jointing the components in cast-in-situ vertical and horizontal joints for which nominal inter connecting steel reinforcements are kept protruding from the precast elements. Additional steel for peripheral ties is provided in the horizontal joints at every floor level.

THE BESANT NAGAR PROJECT OF 144 FLATS IN SIX 4-STOREY BLOCKS MAKES FULL USE OF CELCRETE AND HOLLOW CLAY BLOCKS

The project contemplates construction of 144 flats in 6 Nos. of four storeyed blocks at Besant Nagar, Madras. Each of the six blocks has twentyfour middle income group type flats, six in each floor. Each block consists of 16 flats with a plinth area of 91.4 sq. m. and 8 flats with a plinth area of 83 sq. m. Access is provided by staircases each to serve two families at each floor level. All service lines have been provided externally. Water supply and sanitary connections for the intermediate flats are grouped together and taken through two open courtyards in each block. Balcony and sun shades for windows have been obtained, by in-setting them from the outer face of the building. The space available over the window on the interior can be used as loft. The foundation and plinth for the buildings have been done in the conventional way. All precast components are cast horizontally on concrete platforms using only peripheral moulds. The wall panels on demoulding are tilted to the vertical position. Floor panels of the same type are cast one above the other to save much of the space available for casting.

FOUNDATION

The foundation provided for the prefabricated flats consists of cast-in-situ reinforced concrete strip footing running alround along the load bearing walls (external and internal) with provision of R.C.C. columns of size 20 cm. X 20 cm. at all junctions. 23 cm. thick brick work has been provided from the top of strip footing upto the bottom of plinth beam. The plinth beam for a thickness of 10 cm. has been provided at basement level connecting all these columns.

EXTERNAL WALL PANELS

The external wall panel has an overall thickness of 22.5 cm. made up of burnt hollow clay blocks to a thickness of 18.5 cm. on the interior and a 4 cm. thick concrete skin on the exterior. The hollow clay blocks have been obtained from the Government Mechanised Brick Factory at Thirumalisai, Madras and the crushing strength of these blocks is around 50 kg/cm. Suitable exterior finish can be incorporated in the concrete itself at the time of precasting the panel. A reinforced concrete rib runs on the periphery of the panels and also around openings. Nominal steel is only provided in these ribs unless otherwise required by design consideration. Lifting hooks and inter connecting loops are anchored in the peripheral ribs. Compared to a brick wall of equal thickness, the wall panel is lighter by 10%. The provision of hollow clay blocks in external wall panels helps to achieve enough thermal comfort. The internal faces where the hollow clay blocks are left exposed are subsequently plastered. Eighteen different types of external wall panels weighing from 1.5 to 4 Tonnes are being used in this project.

INTERNAL WALL PANELS

The internal wall panel has an overall thickness of 15 cm. consisting of a layer of bricks sandwiched between two layers of the concrete. These panels do not require any plastering as they are finished smooth while casting. Instead of bricks 59 X 59 X 10 cm. celcrete panels manufactured from the Cellular Concrete Plant of Tamil Nadu Housing Board are also used for internal wall panels. As in the case of external wall panels, reinforced concrete rib runs in the periphery of the panels. Fifty eight different types of internal wall panels weighing from 0.5 to 3.50 Tonnes are being used in this project.

FLOOR AND ROOF PANELS

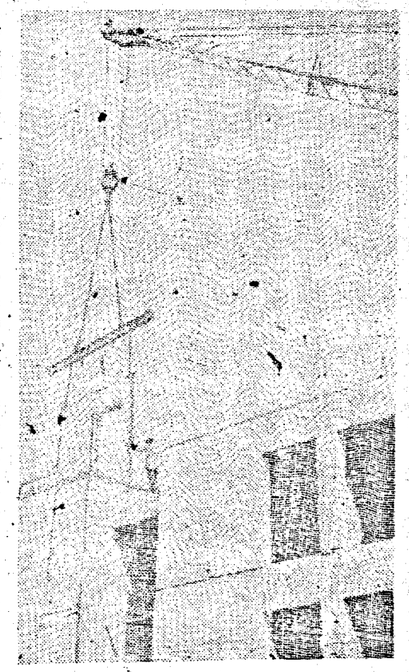
Floor and roof panels are cast with precast funicular shell units which provide an attractive waffle pattern for the ceiling. Five different types of shell units have been used for casting 14 different types of floor and roof panels. Celcrete panels of size 59 X 59 X 10 cm. are also used for floor and roof units.

Totally 858 Nos. of panels under 105 varieties are required for erection of one block of 24 flats. The details are as follows :

External wall panels ..	148 Nos.
Internal wall panels ..	405 Nos.
Floor panels ..	220 Nos.
Roof panels ..	36 Nos.
Stair case	12 Nos.
Parapet	37 Nos.
Total	858 Nos.

JOINTS

The vertical joints between wall panels are made by connecting the protruding bars of peripheral ribs of the panel by a tie bar and subsequently filling the panels with M. 250 grade concrete with aluminium powder.



How the Madras Building Centre helps evolution of more efficient house construction

A Nucleus of Building Centre was formed in Tamil Nadu under the advice of the National Buildings Organisation, New Delhi. The Building Centre is engaged in research on building works, to provide useful scientific information regarding building materials, their availability, correct and economic uses, methods of manufacture, upto date techniques of construction, plant and equipment etc.

The Building Centre Division consists of the following two wings- (i) Laboratory (ii) Information wing.

In the Laboratory wing, tests are conducted on building materials to ascertain their conformity with I.S. or for their suitability for any particular use. Some of the latest innovations are also tried out by this wing with a view to popularise or improvise their use in P.W.D. if they are found to be cheaper and efficient.

The Information wing consists of a Library and a Display wing :

There are about 1600 Technical books. The library is also subscribing to 25 foreign journals and 20 Indian journals. Besides these, technical bulletins, pamphlets, digests etc. from various organisations are collected and kept in the library for reference. About 4000 Indian Standards are also available for reference. The Library is being used intensively both by Departmental Officers as well as others.

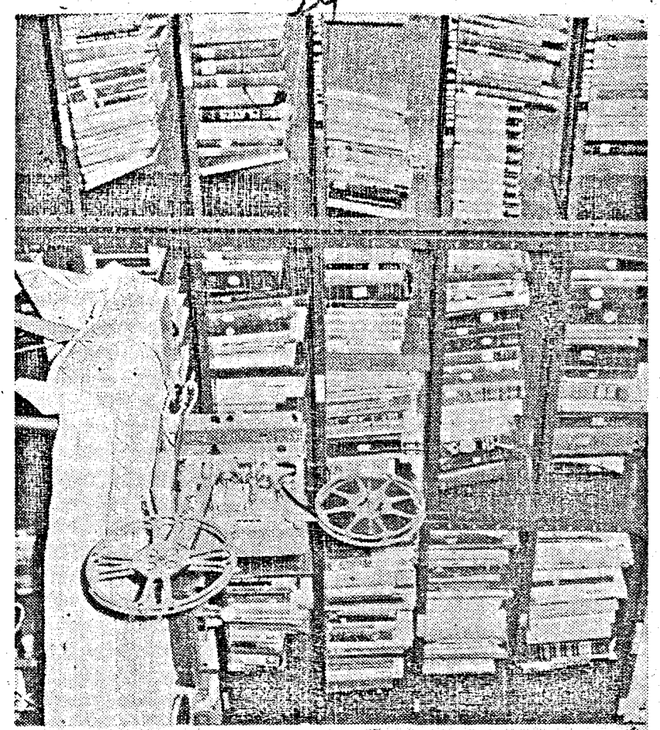
The Display Section permits and encourages from various manufacturers and dealers of various build ing materials, to display their wares for the benefit of the public as well as of the Departmental officers.

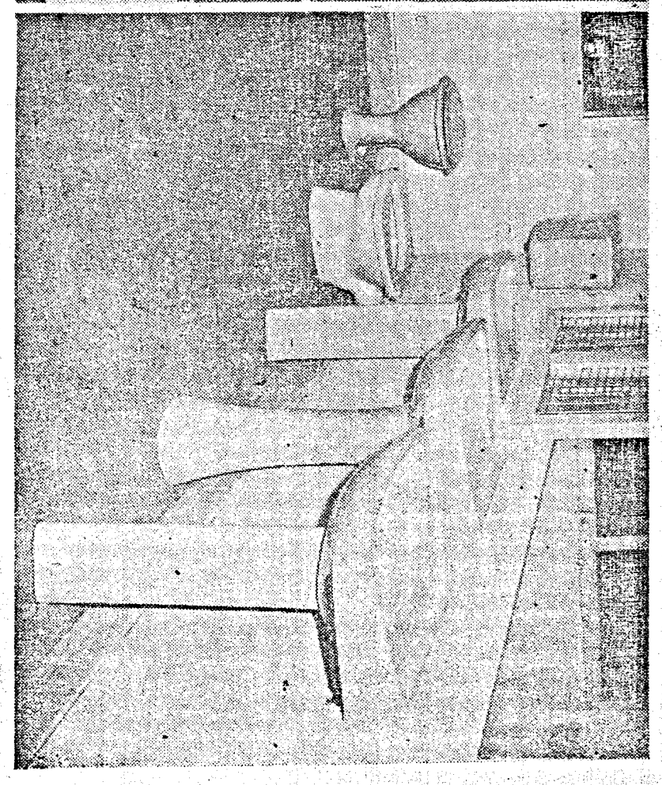
The aim of the Display Section is to provide facilities for those interested in building construction to see at one place, all the materials available for construction, their suitability availability and price. The Centre gives only factual information and makes no recommendation regarding any particular brand. The Centre also arranges to exhibit and demonstrate new innovation techniques by way of posters, drawings and models. More than 70 firms have displayed their products.

The Centre also arranges for technical meetings twice a month. Engineers and technical persons of eminence, both from public as well as private sectors are invited to talk on subjects of their specialisation. Technical films are also screened twice a month.

Recently, in connection with the Low Cost Housing Seminar held at Madras in January 1977, an exhibition was conducted in K.K. Nagar, Madras wherein 23 houses were exhibited to the public. The main theme of the exhibition was to exhibit cheap houses involving new techniques, materials etc. suited for economically weaker sections of the society. The house exhibited by Tamil Nadu P.W.D. was awarded the second prize, wherein new techniques of under reamed pile foundation, lime mortar, thin brick walls, piller slab etc., were incorporated.

A liaison unit of National Buildings Organisation has been established for the southern region. Thiru M.N. Ramanujan Superintending Engineer, Tamil Nadu P.W.D. has taken over charge as Liaison Officer for this Region comprising Tamil Nadu, Pondicherry Kerala and Karnataka.





Library and display rooms of Building Centre. →

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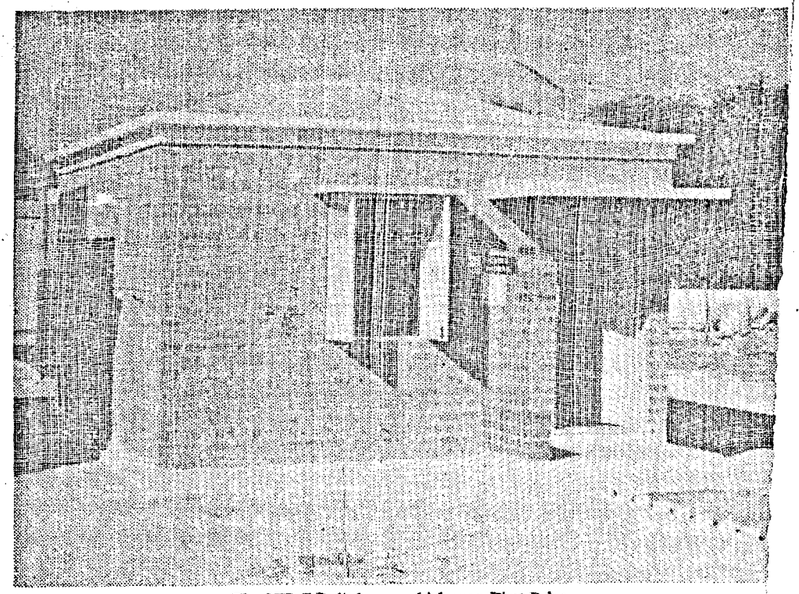
POSITION IN INDIA

Prefabrication has made only a beginning in our country. The volume of prefabricated construction will be around 1% of the totas building construction. For pre-fabrication to become a success the people connected with the work *i.e.*. Architects, Engineers and Contractor will have to reorient themselves to adjust for the same. Thus, plans will have to be made more streamlined. Modular coordination leading to standardisation is a must for the success of prefabricated construction. To make use of the advantages in the mass production, the types of dwellings must be few and must be unchanged for a few years. With such measures, it is expected that prefabricated construction will become more popular in the future. Prefabricated houses are expected to be initially higher than the traditional type of construction. However, if mass house building projects are undertaken on the basis of long range programme of housing, in the course of time a stage may soon come when the cost of prefabricated houses may be lower and eventually such houses may become economical.

Since all the panels required for walls, floor, roof, staircase, parapet etc. are cast in the platform available in the work site under strict supervision and management. better quality control is achieved. This is one of the major advantages in the large panel prefabrication system.

A VIEW OF LARGE PANEL PREFABRICATION FLATS IN BESANT NAGAR, MADRAS

Structural Engineering Research Centre Wins Low Cost Housing Prize



The SERC Built house which won First Prize

The International Jury appointed to adjudge the houses built at the Housing Exhibition has recommended the award of the first prize to the house developed at the Structural Engineering Research Centre by Prof. Ramaswamy, its former Director, and his associates.

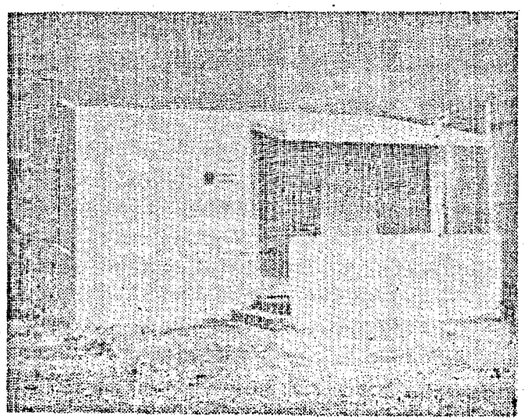
With a total cost of about Rs. 5,240/- the house features innovations both by way of materials and design concepts. Both the roof and the wall are built of a new building block stronger, denser and more impermeable than brick, but unlike brick needs no fuel. The block is produced by a non-fuel intensive pollution-free technology. It is made by compressing a mixture of lateritic soil and lime. Lateritic soil is abundantly available in the States of Maharashtra, Andhra Pradesh, Tamil Nadu and Kerala.

The roof is shaped to the funicular form thus obviating the need for reinforcement. The roof is cast on light mobile forms ensuring repeatability which is an essential requirement for mass-housing. The outisde walls need no plastering. The natural colour and texture of the building block has considerable aesthetic appeal.

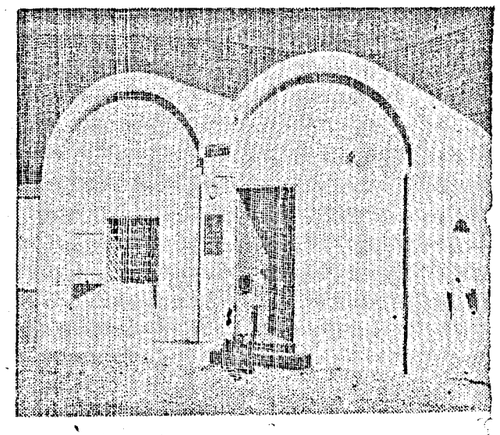
The Second Prize went to the house designed and built by the Public Works Department, Government of Tamil Nadu.

The model houses put up by the Kerala State Housing Board, Trivandrum and Thiru N. G. George, Madras, shared the Third Prize.

The PWD built house which won II Prize

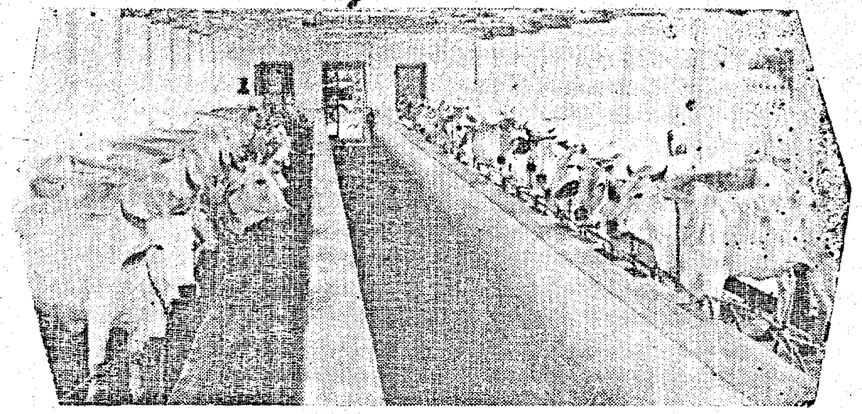


The III Prize went to this House built by N. G. George



DAIRY DEVELOPMENT CORPN. DEALS DIRECT WITH MILK PRODUCERS

MIDDLE MEN ELIMINATED GIVING MORE MONEY TO PRODUCERS



Amul Type Producers Co-ops. have perfected dairying on Scientific lines

The Dairy Development Corporation of Tamil Nadu started functioning from July 1972, under the Operation Flood Programme. The whole of Tamil Nadu is divided into five milk shed areas consisting of Madras, Vellore, Erode, Madurai and Ootacamund covering two districts each except the Ooty zone which covers only one district.

The Corporation has not only succeeded in eliminating the exploiting middle men between the producer of milk and the consumer, but has also increased the quality and quantity of milk by helping rear high yielding calves through scientific aid to the cattle rearers. The cost of production of milk on the producer's side has also been considerably brought down through supply of subsidy for growing high potential fodder grass. Calf subsidy is also being given to encourage taking to scientific rearing of high yielding calves.

Developing the milk potential and encouraging people to supply milk to the Co-operative Societies with the accompanying benefits are the other steps taken. All the available milk is also being tapped for organised and scientific distribution. The flow of money from the urban to the rural areas is also facilitated. Besides improving the standard of life with quality cattle and quality milk increased and assured income, confidence is also being generated among the rural farmers. The demands of the Urban public are also met in the process in a scientific way. The ordinary producer has also been saved from the money lenders who take milk from him at very cheap rate after granting him a high interest loan which can never be repaid. The self-employment scheme for graduates and matriculate besides helping to solve the unemployment problem has also encouraged more people to take to dairying as a profession. The excellent animal health cover provided through scientific treatment and prevention of diseases has also, in its own way, helped improve the standard of human health.

The progress on the above lines in the field of dairying has been phenomenal in the Vellore zone. Prior to the operation Flood Programme the procurement in the zone was only negligible at six thousand litres of milk a day. This has remarkably improved during the past years, especially, during 1976. The zone started organizing Amul pattern Milk Producers' Co-operative Societies directly involving the farmers to form a co-operative organisation from 1975 onwards. During 1975, fiftysix Amul type of milk producer's societies were organised. In 1976, about one hundred and thirtynine societies were organised in the zone.

In the 1975 flush season, about 30,000 litres of milk were handled by the zone per day. Now fortysix thousand litres of milk are being handled per day. Further, expansion has been taken up of chilling centres and dairies. Milk was also procured, besides from Milk Producers Co-operative Societies, from traditional co-operatives and contractors. Slowly, the contractors are being eliminated as middle men. By forming more milk co-operatives, milk is now being procured from two hundred milk Producer's Co-operative Societies and from ninety-four traditional societies. After the formation of the societies, a steady market has been assured to the producers and exploitation eliminated.

PROMPT WEEKLY PAYMENT

The once a month traditional practice of payment through contractors has been stopped and farmers have been paid weekly once on fixed dates. A better price is given to better quality milk. This encourages the ordinary farmer to take to scientific lines to improve quality of milk by improving the health of the animal by balanced feeding and management.

More and more milk bars are coming up in Urban areas, Here Thiru V. Karthikeyan opens a Milk bar in Madras.

Improved Breeds of Cattle

INTENSIVE cross-breeding of indigenous cattle with exotic germ plasm has been introduced in all the producer cooperatives as well as in traditional societies at a limited expenditure to produce calves giving about ten to fourteen litres of milk per day. In the Vellore zone about four thousand and three hundred graded calves have been produced out of which two thousand forty-seven female calves are available in the zone helpful to poor farmers. Now cross-breeding is going on at a fast rate with the help of training given to Secretaries of Milk Producer's Societies. Nearly about two thousand three hundred artificial inseminations were done per month in the zone, which will help dairy farmers who had earlier to spend more than Rs. 3,000/- for purchase of cross-bred cows. When these heifers become milch cows within twentyfour months, it will definitely improve ten fold the earnings of the poor dairy farmers.

Technical Help

With the help of technical services at the door step, the farmers have got confidence to rear cross-bred cattle. In view of this confidence among the rural public for increased earnings from scientific dairy farming, the movement of rural people to city in search of employment has come down. With the procurement of fortysix thousand litres of milk per day in the zone twentyseven lakhs of rupees are pumped into the villages every month. Over three crores rupees in a year is circulating in the rural areas to help the rural dairy farmers. This also helped meeting demands of the urban public for whom milk was a scarce commodity some two years back.

Self-Employment for Graduates and Matriculates

Loans were arranged from Nationalised Banks for unemployed graduates and matriculates for construction of cattle shed and purchase of cross-bred cows. To enable successful running of the dairy farm, technical help is rendered by the Tamil Nadu Dairy Development Corporation Veterinary Officers. In the Vellore zone alone, seven graduates are maintaining dairy farms in addition to three matriculates who have just started dairying. The repayment of loan to the banks has been regular on easy instalments basis. Many such farms will be started in the near future after seeing these graduates as model dairy farmers.

Madurai Milk Project's fleet of Milk Vans

INCENTIVES TO TAKE UP DAIRYING AS A PROFESSION

Besides loan and technical help, feed on credit basis, assured market and better prices, incentives are also given to cultivate grass fodder to reduce production cost. The green fodder is an important factor in the programme. The grass, which is giving about one hundred and fifty tonnes per acre per year is propagated now in the Tamil Nadu Dairy Development Corporation Ltd., to encourage dairy farming. Encouragement is also given to cultivate leguminous fodder. Nearly about one hundred and thirty acres are under Napier Bajra in the zone, cultivated by farmers of milk co-operatives. Subsidy of two hundred rupees per acre is given per year. If the farm supplies one lakh of slips for propagation, five hundred rupees per year per acre is given as subsidy.

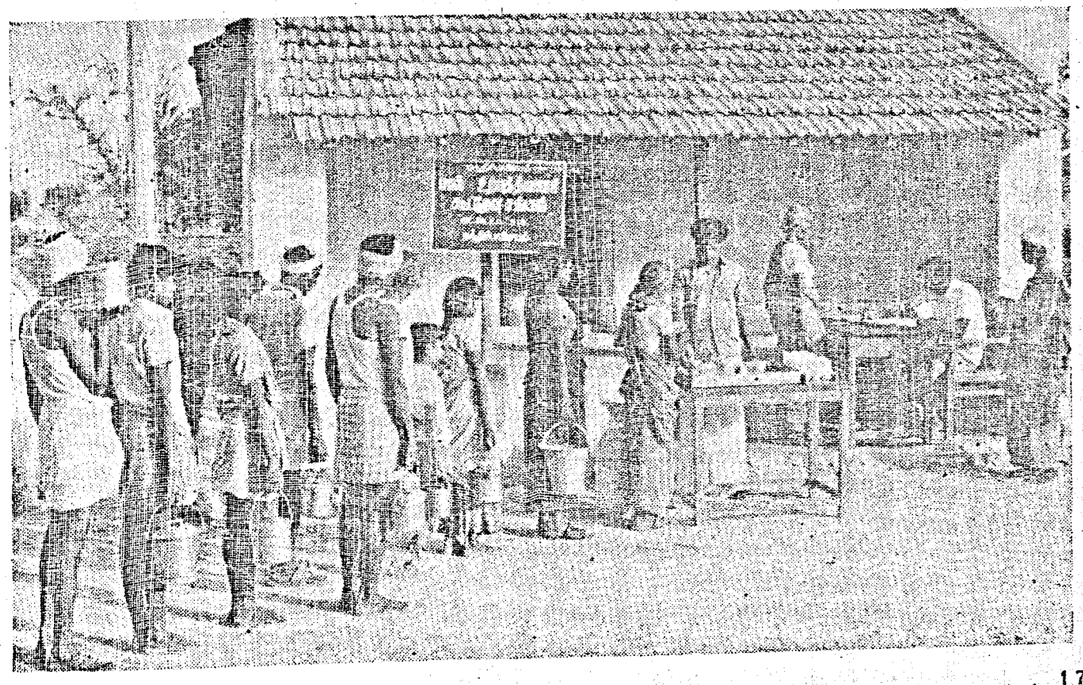
A large number of cross-bred heifers have to be taken care of in the growing stage to get maximum results. To help the farmers, there is a scheme of subsidised supply of "calf starter" to the growing heifers, from six months to eighteen months, at the rate of ten rupees per month. Since the majority of farmers are marginal farmers and agriculturists, the Government of India has come forward to help these poor farmers with the subsidised "calf starter" from three to twentyeight months. One thousand five hundred calves will have thus been covered shortly. During 1977-78, two thousand poor farmers will be benefitted in addition to this.

HUMAN HEALTH THROUGH ANIMAL HEALTH

Preventive measures, free treatment, emergency services and periodical vaccinations contribute to protect animals from epidemic and endemic or contagious diseases. The animal husbandry department is helping in this to the maximum extent possible. To sum up, this sort of package programmes of milk shed areas in Tamil Nadu will help poor farmer's further well being, and further uplift in the long run.

The Zonal Manager of the Tamil Nadu Dairy Development Corporation, Vellore, says, Tamil Nadu stands first in the field of dairy development when compared to all other dairy development corporations in India except Kaira District in Gujarat which had done enough work in the past thirty years. He says, the above facts were communicated by the high level committe constituted by the Government of India who recently visited the zone during the month of November, 1976.

Producers sell directly to Co-ops. which pay better price for the better quality milk



Work of P.W.D.'s Building Centre Appreciated

BECOMES REGIONAL SET-UP OF NATIONAL BUILDINGS ORGANISATION

The Government of India has appointed a Liaison Officer for National Buildings Organisation at Madras for the Southern Region. Thiru. M. N. Ramanujam, Superintending Engineer, Tamil Nadu P.W.D. has been nominated to take charge as the Liaison Officer.

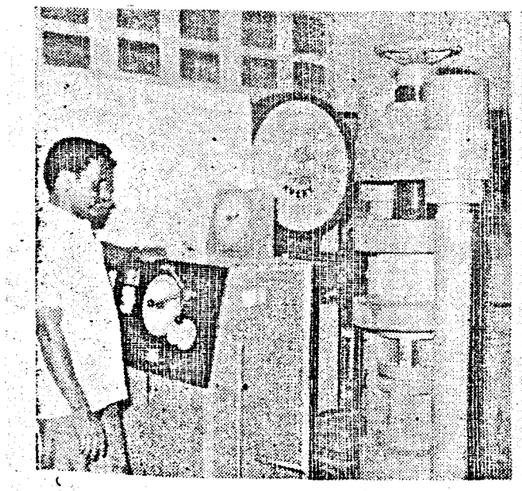
Thiru G. C. Mathur, Director-National Buildings Organisation, Ministry of Works & Housing observed that the opening of N.B.O's Regional Office in Madras, is intended to intensify the activities of the organisation for the benefit of the Southern States—Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, and Union Territory of Pondicherry.

Thiru Mathur said that the N.B.O. was a co-ordinating and advisory body and it was necessary for it to undertake extension work to bring about speedier implementation of results of research and work done by N.B.O. in the field of low cost housing and building construction on country-wide basis. Thiru Mathur said that already close contacts have been established by N.B.O. with Tamil Nadu P.W.D., Housing Board, Slum Clearance Board, Structural Engineering Research Centre and the like. The establishment of N.B.O's Regional Office will strengthen this link and provide two-way channel to tackle housing and building problems of the Southern region. He informed that on the lines of N.B.O. Display Centre — Permanent building Exhibition at Delhi, the Tamil Nadu P.W.D. has set up a Display Centre at Chepauk, which is serving the architects, engineers and house builders. The Tamil Nadu Housing Board has taken up construction of 144 prefabricated houses at Besant Nagar, Madras with active collaboration of S.E.R.C. The project has been sponsored for execution under the N.B.O. Experimental Housing Scheme with a grant-in-aid of over Rs. 5 lakhs.

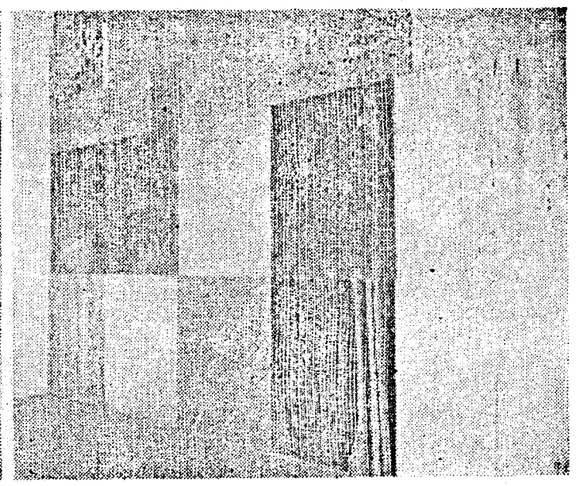
The N.B.O. has been actively collaborating with the Structural Engineering Research Centre, Madras in research and development work for low cost housing. The S.E.R.C. has successfully completed two construction projects at its campus which were sponsored under the N.B.O. Experimental Housing Scheme. In one of these projects, use of fly-ash a waste product from thermal power station was profitably made in mortars and structural concrete work, thereby saving upto 20 per cent cement. Use of precast concrete components for roofing/flooring was also adopted which saved considerable construction time.

Thiru Mathur appreciated that the Tamil Nadu P.W.D. has come forward to adopt the all India Standard Schedule of Rates and Specifications drafted by N.B.O. He hoped that the opening of N.B.O. Regional Liaison Office at Madras will effectively contribute to transfer of technology and application of results of research in practice to achieve reduction in cost of construction and optimum utilisation of resources in the Southern Region.

Compression Testing Machine



Granite polished stone & Mosaic Tiles



PIONEERING WORK OF N.B.O. IN LOW COST HOUSING

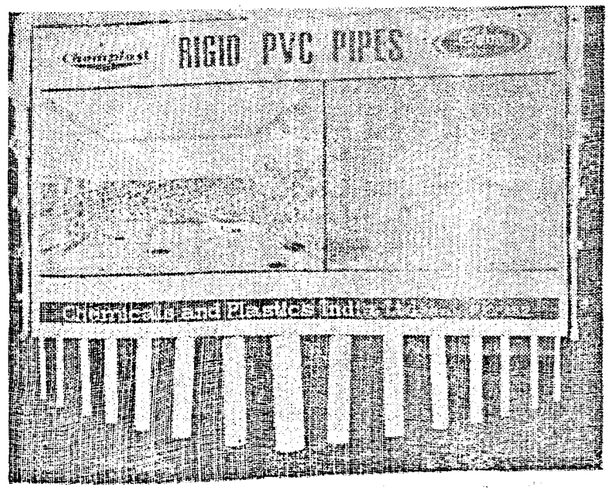
Thiru Mathur mentioned that for improvement in rural housing and environmental conditions, a Regional Rural Housing Wing at Viswesvarayya College of Engineering at Bangalore has already been functioning under the aegis of N.B.O. since 1958. The Wing has done very useful work in training rural overseers, undertaking social and economic surveys of a few selected villages, developing designs of cheap rural houses and other types of buildings. The Wing has put up a cluster of 10 demonstration houses. along with environmental improvement in Village Honnenhalli in Kolar District. Each house costs only Rs. 2,500 and has been built with only locally available materials through self-help. The Wing has already commenced work on a similar demonstration project in Pondicherry and selected a village for this purpose, in the State of Tamil Nadu and Kerala. Tihru Mathur hoped that the N.B.O. Regional Liaison Office will bring about greater involvement of other States like Kerala and Andhra Pradesh in the work programme of N.B.O. In Andhra Pradesh with the colloboration of N.B.O. the State Housing Board, a Building Display Centre is proposed to be opened. Recently a training course on Timber identification and a workshop on Labour and Material Constants in Building were organised by N.B.O. in Hyderabad.

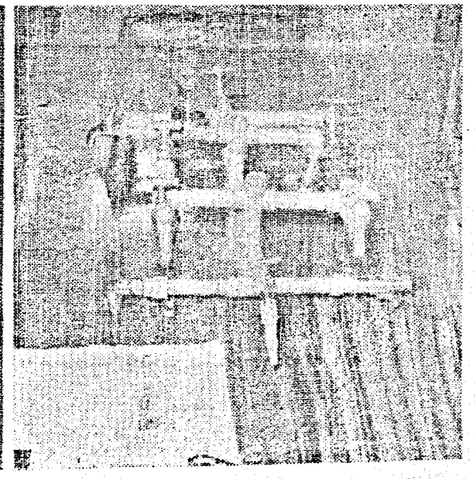
There has been a significant impact of the Experimental Low Cost Housing Project sponsored by the National Building Organisation. So far, 27 projects valueing Rs. 14.5 million have been successfully undertaken by various housing Board, Public Works Departments and other agencies in various part: of the country. In these projects, as many as 41 new materials and construction techniques were utilised. The techniques involved in these projects, included under-reamed pile foundations resulting in up to 40 per cent saving in the cost in black cotton soil areas, use of different types of precast roofing units enabling saving of cement and steel and construction time and single brick-thick load bearing walls for upto 5 storeyed residential buildings affecting saving of bricks and reduction of construction cost.

Several of these techniques had been adopted in large scale housing projects resulting in lower costs. The National Buildings Organisation is setting up Demonstration-cum-Training Centres to augment production of improved and new mate rials. One of the centres has already started functioning in Delhi for producing ready-to-use hydrated lime and clay pozzolana, the organization is identifying its activities through its six regional liaison cells set up at Madras, Bombay, Bhopal, Srinagar, Calcutta and Shillong and also through its five Regional Rural Housing Wings at Bangalore, Howrah, Chandigarh, Delhi and Vallabh Vidya Nagar. Two more rural housing wings are being set up at Jodhpur for Desert Regions in Rajasthan and at Srinagar to cater to cold and Hilly Regions of Jammu and Kashmir.

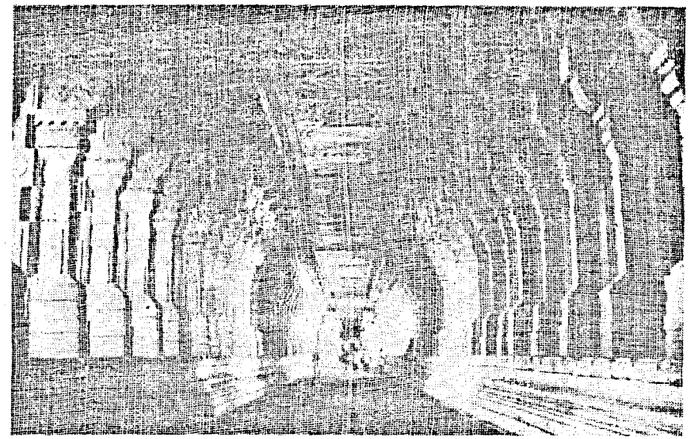
In the fields of Research, The National Buildings Organisation, which is also functioning as United Nations Regional Housing Centre for ESCAP Region, is now engaged in Co-ordinating Buildings Research and the application of results to Low Cost Housing.

Exhibits at Building Centre, Madras





THRIVING HERITAGE



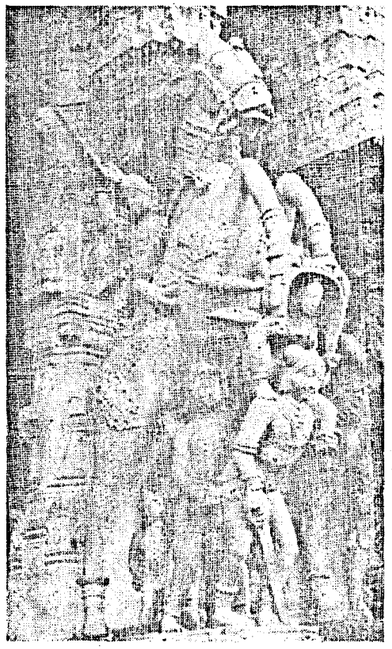
OF ART IN TAMIL NADU

A LIVING FORCE

The old temple architecture of Tamil Nadu gives a clear impression as to how, in spite of political barriers, art played a unifying role. Even today thousands of people come to Tamil Nadu to see the grandeur of this architecture and they never feel that basically this is different from the rest of the country. In Rajasthan, which is very rich in Art, there is difference in Art from one place to the other; somuch so that many paintings are known after the names Bundi. Kishangarh, Udaipur, Jaipur etc. On Art, there is always the impact of the time when it is created. North had the impact of Mughals in the later period. Similarly in the South, there is the impact of the times of the Vijayanagar, Hoysala, Chalukya Kingdoms. Even that impact is not limited to any linguistic boundaries. Like Science and Technology, Art and Literature do not recognise that man-made barriers. Of course, it had to recognise the wishes of the patrons to some extent.

INTENSE DEVOTION

Art has been a living force in Tamil Nadu which has a rich continuous artistic tradition going back to early times. Their ancient temples are not only places for pious devotion but artistic creations. Their architecture and the sculptures that abound in them are outpourings of intense artistic feeling that set the mood for the devotee to elevate himself to a world of spirituality on going into them. One cannot enter any of these magnificient temples — even the smallest of them — without being overcome by a feeling of awe, admiration and devotion —all sub-consciously generated by the artistic riches that abound in them.



A pillar sculpture in Srirangam Temple

The bronzes of Tamil Nadu have similarly been the envy of the world at large as superb pieces of art. Painting also has a no less distinguished tradition here. Sittannavasal, Panamalai and Thanjavur mural paintings at once come to the mind as remarkable achievements in this field of art. In fact, there are a lot more paintings in temples, which decorate the walls and recount the legends and stories pertaining to the temple and its deities and serve to enlighten the devotees as much as to enchant them with their arts. There are wood carvings, Ivory carvings, metalware etc. in which people here have excelled and have left lasting souvenirs of their excellence.

The artistic past, however, has not been deadened and lost. It has continued down to the present. Art activity had not ceased with the great achievements of the years gone by. The artist and the craftsman maintained their devotion to their metier and when modern art came with its revolutioning tenets, the artist here entered this new world and maintained his own place.

Our Bronzes are Envy of the World

A bronze exhibit in Saraswathi Mahal, Thanjavur

Art could flourish so well in Tamil Nadu because of comparative peace in this part of the country and support of patrons of art who, amidst all their preoccupations, never forgot to give art and the artists — their due place. Thus the well-springs of art never dried up here. Now that individual patrons of art may not be forthcoming due to the changed social condition, institutions and organised bodies have to take over the vital task of keeping art activity going on with the same dedication. The Oviam Nunkalai Kuzhu is such a body that has the support of the Government and that proposes to inspire art activity here.

The exhibition aspect of art must get a new emphasis because only when art can be viewed and enjoyed widely that it can enthuse the public as well as receive in turn an impetus for growth. Art is an acquired taste. For, whatever some may say, art and artists cannot be cloistered up and still grow; critical acclaim is vital for the artist to produce his best. As such exhibitions bring the artist and the public face to face, as it were, through the intermediary of the artists' works, and both can derive immense benefit from each other, through this interaction. These exhibitions are indeed such revitalising encounters between the artist and the public.

Tamil Nadu has consistently encouraged art activity. There are here institutions which keep alive ancient artistic tradition in their pristine purity — Government Institutions such as the Bronze casting centre at Swamimalai in Thanjavur District, and the Sculpture Training Centre at Mamallapuram. If these institutions aim at preserving the ancient arts and crafts of the State, the Tamil Nadu Oviam Nunkalai Kuzhu aims at stimulating artistic creation. They organise exhibitions and give awards to selected artists as the initial steps towards achieving the aim. In the years to come, its impact would increase steadily and it would become a force for artistic creativity in the State.

Our Sculptures inspire awe and devotion

A sculpture in Nellaiyappar Temple, Tirunelveli.

HOUSES FOR MILLIONS

THOUGH the national housing policy as such has not been-formally documented, some formulations regarding the same are clear through the concrete steps that the Ministry have recently taken. These steps are the enactment of Urban Land Ceiling Act, allotment of housesites to the rural poor, emphasis on utilising housing funds for houses for LIG and EWS groups, fixation of ceilings on costs of different categories of houses, limiting the plinth areas of buildings emphasis on utilisation of locally available materials and including economic specifications utilisation of LIC funds for housing, the scope given to the Banks for utilisation of some of their funds for housing and urban improvements, allocations made to co-operative societies for housing, social schemes including those for housing for the workers, establishment of HUDCO to promote housing in urban areas in the country. Similarly other measures include consideration on a proposal to set up a rural housing corporation or a rural wing of the HUDCO, central assistance for integrated urban development programmes of 16 cities and towns, the encouragement of preparations of such plans for other cities and towns, the guidelines issued for urban land disposal and emphasis on environmental improvement schemes for the slum areas and our plans and achievements for conferment of homestead rights and continued research for economy in constructions without damaging quality and durability and our advancement in new techniques and designs of buildings.

The general population growth rate is 2.4 per cent while the growth in rural areas is 2.1 per cent; in urban areas, 3.8 per cent and in bigger towns with a population of over ten lacs it is 4 to 8 per cent. The growth rate of Delhi, Bombay, Calcutta and Madras is 6 to 8 per cent. The total urban population in 1974 was about 120 million and in 2001 which might be on a conservative estimate about 270 millions.

Magnitude of Housing Problem

As against this, the stock of housing according to a survey based on 1971 census by N.B.O. was 16.1 million as compared to 11.3 in 1961 in urban areas. The net shortage in urban houses was estimated to be 3.8 million and 11.8 million in rural housing. This would surely be more by now. In rural areas this huge shortage is existant despite the consistent efforts made by everyone concerned and the stock of houses going up from 57.1 million in 1961 to 66.4 million in 1971.

Since the recognition of the necessity for public housing and introduction of a number of social housing schemes for the urban areas, an amount to the tune of Rs. 4,584.2 million has been sanctioned which has resulted in giving us over six lakh sixtyfive thousand dwelling units. Besides, L.I.C. has taken rapid strides in investment in housing. During the last year ending March 31, 1976, itself ; it made an investment of Rs. 740 million in all the housing schemes, raising the total amount invested upto March 1976 to about Rs. 6,566.5 million in housing development in India by way of loans to the State Governments, Apex Co-operative Housing Finance Societies and other authorities, Loans under other schemes and the corporations own building constructions. This, however does not indicate the total progress in housing because housing has grown through other private agencies, local bodies and public undertakings etc also. Though not quite unimpressive in the context of the difficult and severe limitations of resources the progress rightly seems little in the face of the hugeness of the problem.

Efforts in Rural Areas

Similarly, the Government is making multi-pronged attack on the housing problem in the rural areas. For the landless workers in the rural areas, about 7 million housesites have been allotted according to the latest figures received from the State Governments. Besides allotment of housesites in some States, assistance both in cash and kind has been extended to the beneficiaries of the scheme for construction of houses. In addition, the Housing and Urban Development Corporation has also decided to adopt one village in each State for financing the construction of houses on the house sites allotted.

The HUDCO has also sanctioned over 455 schemes costing about Rs. 2,818 million for the construction of about 1,57,974 houses throughout the country. And almost 80 per cent of the houses being constructed with the HUDCO assistance are meant for Lower Income Group persons and the Economically Weaker Sections of the Society.

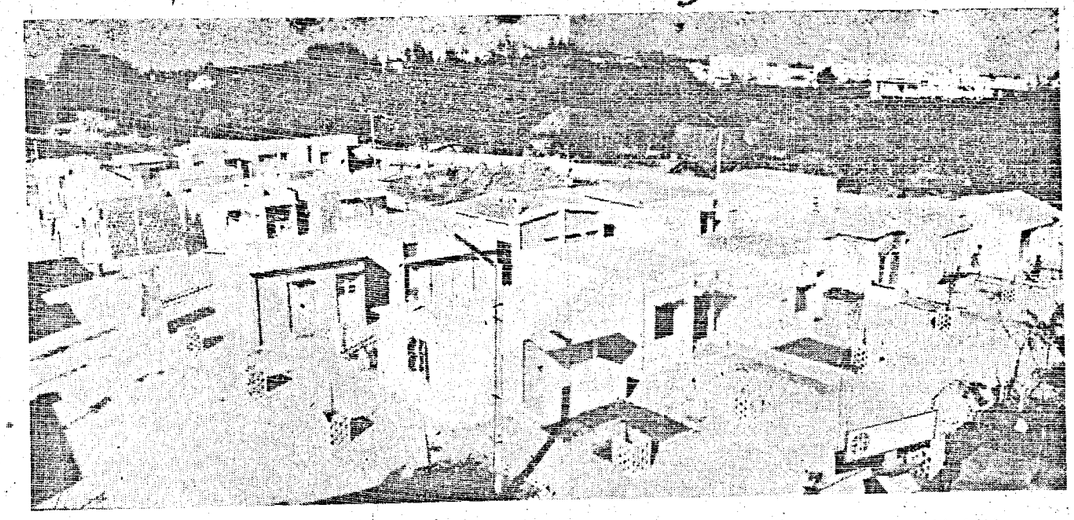
Our plan outlay for the Fifth Plan for housing is Rs. 5105.6 million and the anticipated expenditure during 1976-77 would be of the order of Rs. 2,624.9 million. If we proceed with the aim of providing a pucca housing unit of an acceptable standard to every household, to wipe out the backlog only, an investment of a staggering figure would be needed.

All this shows that the problem is far beyond the mere resources of the Government. Even if the Government resources, were increased through greater allocation by the LIC to HUDCO and other agencies utilisation of more bank funds, the amount may not be enough for an effective solution.

Realising the issues involved the Government is also keen to encourage self-help movement in the country for construction of houses on the housesites allotted in the rural areas, under which a small financial assistance and technical guidance are extended to the beneficiaries and the labour is contributed by the family itself. In the resettlement townships of Delhi where live about 60 per cent of the 6 lakh resettled persons have proved beyond doubt that given encouragement and some financial assistance and technical guidance people themselves will construct their houses.

The resources of the nation are, of course, much bigger than the resources of the Government, whether Central or State Government and this is what we have to tap.

The house construction work should be taken up as a national movement for housing in the country, both in urban and rural areas through mobilisation of resources at all levels of citizens, public organisations, agencies, institutions and public bodies and the best possible utilisation of the same. *



A view of the Housing Exhibition held in connection with The International Seminar on Low-Cost Housing held in Madras.

LOW COST HOUSING IN DEVELOPING COUNTRIES

Application of Research Results

by

THIRU G. C. MATHUR,

Director, National Buildings Organization and UN Regional Housing Centre ESCAP, Nirman Bhavan, New Delhi

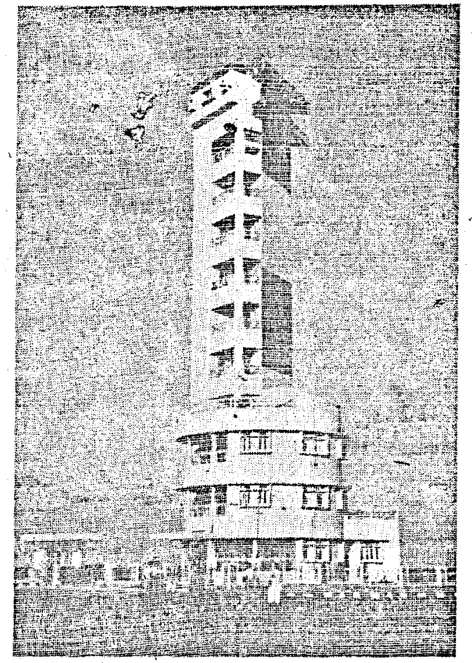
The successful transfer of technological developments and application of research findings to a production process or any field in general, signifies a meaningful end to any Science and Technology Plan. It is of particular relevance in developing nations where it has become imperative to stretch the available resources by cutting down costs and taking resources to labour/material saving techniques.

The application of modern technology and research findings in the field of 'housing' deserves much more attention than hitherto paid by national Governments and policy makers. There is already a large gap between the demand and availability of houses in many developing countries and the backlog is increasing steadily. In India, for example, at the beginning of Fifth Five Year Plan (1974) the housing shortage was estimated at 15.6 million dwelling units — 3.8 million in urban and 11.8 million in rural areas. With the rapid increase in population, it is estimated that India's population may increase from 600 million as estimated in 1976 to 1,000 million by 2000 A.D. and consequently if radical programmes for housing are not taken, the shortage of housing would increase considerably. The housing situation is equally unsatisfactory in other countries of Asia, Africa and Latin America.

Financial constraints and inadequacy of materials and other resources rule out any possibility of taking up massive housing programmes to wipe out this enormous shortage. A strategy of constructing low cost houses by adopting speedier building techniques employing indigenous resources needs to be developed through intensive research in all aspects related to housing and building. It is equally important to bring about fruitful application of research results and transfer of available technology for building housing at lowest possible cost on mass scale. Lack of attention to research and application of results in practice in the field of housing is one of the main factors responsible for the inability to build houses for the teeming millions in the developing countries.

The urban housing situation in the developing countries has reached the level of crisis and slums and squatters settlements have mushroomed which are an affront to human dignity. At the same time the neglect of rural areas has not only contributed to the aggravation of the urban housing situation but has resulted in deterioration of housing and environmental conditions in rural areas where a vast majority of population lives. The housing situation in developing countries has become so alarming that in addition to national efforts, international action is also called for.

Confining our attention to matters related to research in Low Cost Housing, alone it could be



MADRAS GETS A NEW LIGHT HOUSE

133-year old Monument goes off the beam

The new Madras Light House, constructed at a cost of about Rs. 28 lakhs, was inaugurated on Monday, January 10, 1977.

The existing Madras Lighthouse is over a century-old. It was originally established in 1844 and certain improvements were carried out in 1894 and 1927. It originally functioned from a stone masonry column and was subsequently shifted to the main dome of the High Court buildings after their construction towards the end of the 19th century.

With the increase in shipping activity on the east coast and at the Port of Madras and with the arrival of faster and deeper drought vessels, the need for a more powerful light was felt. The increase in the background illumination around the existing light located in a busy part of the city further reduced the effective range of the light at sea. It was found that the present dome was not capable of housing a modern optical equipment. It was, therefore, decided to construct a modern lighthouse tower and install thereon a powerful electrically operated optical equipment.

The Tamil Nadu Government made available the requisite plot of land on the Marina beach. As the location is a prominent one in the Madras City, it was considered necessary to go in for an unconventional shape and provide it with necessary architectural features. The lighthouse as designed in consultation with the architects consists of a 45 metre high triangular RCC tower with an electric lift besides the conventional spiral internal staircase. The novel features of the lighthouse are its triangular shape and the provision of electric lift. The total height of the new lighthouse is 190 feet from the sea level.

A detailed subsoil investigation was carried out and a suitable pile foundation was designed and executed. The analysis of the superstructure was also carried out using modern techniques and the work was executed accordingly.

The lighthouse equipment installed at this lighthouse includes a 2.5 metre diameter lantern housing therein a 3rd order revolving optic with a 3 KW lamp as main source mounted on a lamp changer with a similar standby lamp which comes into focus on the failure of the main lamp. The equipment normally runs on the local main supply. A standby diesel generator set is also provided and this takes over automatically when the main supply fails. An acetylene burner is also provided to act as an extreme emergency source.

The effective beam intensity of this light is 2.44 million candles and its characteristics are group flashing (2) white, every 10 seconds. This light has a visibility range of over 20 miles even in average weather conditions. The lighting equipment has been imported from France.

Fixed aircraft obstruction lights have been provided at two different levels on the lighthouse structure.

The lighthouse will be manned by operational staff comprising one head lightkeeper, three assistant lightkeepers and three attendants.

With the commissioning of the new lighthouse at the Marina Beach, the old lighthouse operating from the High Court building will be closed down.

OVER 122 LIGHT HOUSES GUIDE SHIPS FROM FAR, FAR OFF THE SEA TO SHORES

A large number of lighthouses built along the 5000-km long coastline of India which keep on guiding the vessels with their lights beaming far into the sea do an important service by contributing to increase both maritime activities and the national income.

At the time of Independence, India had only 17 'General' lighthouses, but now the Department of lighthouses and Lightships has to its credit 122 lighthouses, 7 radio beacons, 8 decca navigator chain stations, 13 fog signals, one light vessel and 20 light buoys around the eastern and western coasts. It has a flotilla of a two lighthouse tenders and 8 other motor launches besides 31 VHF RT sets for maintaining communications on the lighthouses.

The approved outlay for the development of lighthouses under the 5th Five Year Plan is Rs. 13.66 crores. This includes Rs. 5.59 crores for spill-over schemes and the balance of Rs. 8.07 crores for the new schemes. In pursuance of this Plan, new lighthouses have been commissioned into service at Chanka, Gopnath, Suhelipar, Karumbhar, Kiltan North, Androth West, Aguada, Cannanore, Kalpeni, Port Cornwallis, Rutland Island, Bobby Shoal and Madras. Besides, installation work is in progress at Kiltan and Beypor lighthouses which are expected to be ready very soon. This apart, civil engineering works in respect of several other schemes in this regard, field studies concerning off-shore lighthouses and updating of the decca chain on the East Coast have also been completed.

WORKSHOPS

There are four lighthouse workshops, one each at Madras, Calcutta, Bombay and Jamnagar for maintenance and repairs of lighthouses apparata throughout the country and to manufacture specialised spares. A skeleton workshop is also functioning at Port Blair.

TRAINING

The Training Centre at Calcutta imparts training to departmental lightkeepers and technicians. It also conducts refresher courses for lightkeepers and other lighthouse personnel. In addition to this, the Training Centre provides facilities for training of lightkeepers of the various local lighthouse authorities like the Port Trust and State Government Maritime Departments. Recently, four technicians from Zanzibar were given training at this Centre.

RESEARCH AND DEVELOPMENT

The Department of Lighthouses and Lightships conducts research relating to various problems connected with lighthouse engineering in the fields of technical, physical optics, electricity, physics, hydraulics, etc.

REVENUE

It is a self-supporting Department which derives its revenue from light-dues levied on vessels entering and leaving the Indian Ports. The present rate of light-dues is Re. 1/- per tonne for sea-going ships and 6 paise per tonne for sailing vessels. This rate was revised in May 1976 to augment the resources of the Department for undertaking capital works under the Five Year Plans.

The term 'lighthouse' represents all aids to navigation including light vessels, radio beacon, fog signal, buoys, decca chain system and other apparata exhibited or used for the guidance of ships. A lighthouse marks a danger-point on a coastline or at sea which ships must avoid and keep clear off. The lighthouses also mark sea-lanes, channels, etc. and thus provide signals with distinct characteristics as well as sea-roads for ships.

The Department of Lighthouses and Lightships which functions under the Ministry of Shipping and Transport is responsible for the administration, maintenance and expansion of lighthouses in India.

ALL AIDS To Navigation Rendered

seen that by and large in the developing countries little or no attention has so far been given to this important subject. There is lack of appreciation that investment in research in housing and building would pay rich dividends as has been found in the developed countries. Apart from effecting substantial reduction in the cost of housing construction and ensuring optimum utilisation of resources, improvements in building technology through research are also of great national consequences in many ways. Increased tempo of housing construction generates vast opportunity of employment and gainful utilisation of manpower resources, contributes significantly to capital formation and economic growth, improves the standards of living and quality of life, and above all results in all round Socio-economic development.

It is estimated that construction including housing and building in developing countries, accounts for upto 50 per cent of the total national expenditure on development. In the case of India, out of the total Fifth Plan outlay of Rs. 6,70,000 million, expenditure on construction is estimated to be of the order of Rs. 3,00,000 million. Considering this during the last about two decades greater consciousness of the role of research in housing and building is being created.

In some developing countries national research laboratories have been set up to tackle indigenous problems of building and housing. Transfer of appropriate technology and application of results of research have also attracted some attention. In India, the National Buildings Organisation was set up in 1954 to coordinate research and to bring about application of results of research in the field of building and housing.

The need for international action has also come to be recognised largely due to the efforts of United Nations. The ESCAP and UNCHBP and other specialised agencies of UN are giving greater attention to this area. The UN Regional Housing Centres for ESCAP region —one at Delhi (India) another at Bandung (Indonesia) have been set up since 1958. International bodies like the International Council for Building Research Studies and Documentation (CIB) the Afro-Asian Housing Organisation and the International Association of Rural Housing are some of the important bodies which are creating greater awareness of the problems of housing and building and their solution through research and development and international collaboration.

PROBLEMS IN TRANSFER OF TECHNOLOGY AND RESULTS OF RESEARCH

By and large, the building industry in developing countries has remained aloof from modernisation. The industry is tradition bound. It comprises of inumerable small undertakings. It is not organised as an industry and continues to be in the nature of handicraft, on-the-site trade and labour intensive. Changing labour force, work-sites and temporary duration of works are factors which have to be properly accounted for in properly managing the industry and increasing its productivity.

The use of local materials and skills as well as 'self-help' for construction have great relevance in the context of appropriate technology for housing construction. Sustained research and development are also required to be undertaken to tackle problems on indegenous character and to cater to mass housing construction programme. Stress has to be laid squarely on bringing about rapid transfer of technology and application of results of research in the field.

Transfer of technology and application of research results are found to be difficult phases in achieving the desired results of any original idea or plan. Many a times it could have far reaching technical and economic implications. In the case of building industry which is complex, different variety of skills, use of many kinds of materials etc. are involved. The application of any technological development or research result may necessitate radical changes in all of them which is quite difficult to carry out.

Lack of contact between the field and the research laboratory results in absence of mutual understanding between the research workers and the 'man-on-the-job.' Very often the site conditions are not properly analysed and the laboratory may come up with a technique which may not have fully accounted for the actual field conditions.

In addition to this the transfer of methodology and knowledge pertaining to any technique to the field level workers calls for special efforts on the part of the managerial staff. The building workers are often illiterate and this is a major hurdle in making them understand what they are required to do.

Economic factors are also sometimes responsible for hindering the transfer of technology and research findings. A particular new technology may call for huge capital investments as in the case of large scale pre-fabrication. The resources, either of a State or building firm may not be adequate for making such investments.

Another hindrance to application of technology and research in construction industry is the operation of restrictive buildings legislation. It is a fact that the codes and bye-laws of many countries drawn up several years ago have not been revised to conform to the present day needs and technological developments.

The attitude of professional men in the building industry could go a long way in accepting and introducing technological developments and research findings. By and large, there is lack of appreciation in the profession to change the proven age-old methods adopted in planning, design and construction. Lack of current technical knowledge and will to experiment with new ideas, techniques etc. are some of the reasons attributable to the present day traditional character of the building industry.

IMPORTANCE OF RESEARCH FOLLOW UP AND COORDINATION

A research institution is intended primarily for carrying out research work and making research results available. But in order to realise the benefits of research work, it is necessary to undertake follow up action which would facilitate as well as enable the application of results of research in practice. This will mean extending the research activities to include in its scope the laboratory and field trials in achieving a practical bias to extension of knowledge through demonstration and pilot plant production, dissemination of building knowledge and technical assistance in field work. These activities have to be viewed in the research perspective to promote application of results. If a research institution is entrusted with such follow up action it may not be able to do so without hampering its own basic responsibilities.

The co-ordination of research and building activities and the efforts to bring about developments in the building industry are also of great practical importance. It calls for adequate research background and appreciation of the practical problems involved in bringing about development in the building industry.

Research Institutions may be able to equip themselves and contribute to the follow up action to promote application of results of research. However, in large countries, a separate agency at national level for coordinating the development work is necessary. Such an agency will concern itself mainly with the task of promoting building knowledge and its application and will serve as a link between the research centres and the building industry. It will, help to bridge the gap between research and its application. It would also act as a channel for feeding back field experiences to the research institutions.

The activities of such an agency will comprise of research coordination work on the one hand and promotion of application of research results on the other.

RESEARCH COORDINATION

It involves the coordination and integration of building research which is achieved by undertaking the following :

(*i*) coordination and integration of research programmes ;

(*ii*) identifying the practical building problems in the industry ;

(*iii*) initiating the problems for investigation ;

(*iv*) farming out research programmes ;

(*v*) sponsoring research work, by providing financial assistance and technical or expert guidance ;

(*vi*) studying and evaluating results of research ;

(*vii*) presentation of the results of research.

To achieve these, the coordination agency has to work in close collaboration with the building research and development organisations.

PROMOTING APPLICATION OF RESULTS

It entails the following follow up measures for transfer of technology to the field :

(*i*) field trials ;

(*ii*) large scale experimental construction or pilot plant production ;

(*iii*) wide dissemination of building knowledge in readily intelligible form ;

(*iv*) extension through demonstration and displays ;

(*v*) transformation of results of research into actual practice through codes of construction practices ;

(*vi*) surveys to ascertain the extent of implementation.

To achieve these, the coordinating agency works in close liaison with the building industry and prepares them as receiving ends for adopting the results of research in practice.

PLAN FOR ACTION

In the foregoing problems experienced by developing countries and measures called for in transfer of technology and research findings have been discussed. It is evident that different types of actions based on a comprehensive strategy are called for. They may be broadly classified into (*a*) setting up institutional arrangements ; and (*b*) evolving operational schemes and their implementation.

INSTITUTIONAL ARRANGEMENTS

It is obvious that research and development work should go hand-in-hand when the practical results are to be achieved in tackling the problems of building industry. To accomplish this and with a view to developing comprehensive approach to all aspects of housing and building, it is necessary to set up an institutional arrangement to achieve speedier transfer of technology and create, through sustained efforts, appreciation of results of research in practice.

(i) National Centre : Recognising this, in India, the National Buildings Organisation was set up in 1954 by the Government of India in the Union Ministry of Works and Housing. The main objectives of the Organisation are :

- to act as an interface between all incoming technological findings and their application in the field towards low cost construction and improve building quality in India ;
- to augment/improve the production of traditional building materials and promote the establishment of new building material industries ;
- to launch and partially finance experimental construction schemes to implement research results ;
- to promote rural housing through research, training and demonstration ;
- to collect document and disseminate information on the latest advances in building techniques and housing ;
- to develop housing and building statistics and conduct studies relating to socio-economic, financial and investment aspects of housing.

(ii) Regional Liaison Centres of NBO : Six Regional Centres of NBO are being established for effecting a closer liaison with State PWDs and housing boards, construction agencies etc. in different parts of the country. These centres are being located at Madras, Bombay, Bhopal, Srinagar, Calcutta and Shillong. The centres will carry out extension activities in their zones for providing transfer of technology and speedier application of results of research and work done by NBO in low cost housing and building construction.

The General Building Research Institute, Roorkee have developed a method of preparing blocks out of unsize stone boulders of small and large dimensions. The stone masonry construction with such blocks has proved successful in many buildings put up recently.

(d) Foundation Techniques : Economical methods of providing foundation in unfavourable soil conditions have been developed by the CBRI and the SERC. Under reemed pile foundation evolved by the CBRI provides an answer to foundation problems on soils with low bearing capacity and is widely used in the country. The hyperbolic paraboloid footing propagated by the SERC enables economy to be achieved on soils with low bearing capacity.

(e) Structural Designs : Research in structural design has brought about radical changes in the analysis of structures and made it possible to use materials economically and efficiently. The thickness of brick masonry on multi-storeyed brick load bearing structures need no longer be determined on empirical methods, it could be calculated on scientific lines. Requisite strengthening arrangements have been evolved for such structures put up in seismic zones. High strength bricks required for multi-storeyed brick load bearing structures are now being produced by 9 mechanised brick plants in India. The NBO has prepared techno-economic feasibility reports for setting up such plants and has also provided technical assistance in setting up some of the mechanised brick plants.

The use of ultimate load theory and high strength deformed bars makes it possible to save about a quarter of the cost of steel in structures designed on the basis of elastic theory using mild steel.

(f) New and Improved Materials: Development of new and substitute materials and improvement of traditional materials is of vital importance in the context of low cost construction. Materials account for about 73% of the cost of building and use of cheaper materials could therefore bring about a substantial reduction in the cost.

The efforts of research laboratories to improved quality of traditional building materials and development of new and substitute materials have met with a good measure of success. High strength bricks, deformed bars for RCC, Lightweight cellular concrete, asphltic corrugated sheets, plastic building products, to name a few are the materials which have proved their superiority over the traditional materials.

One of the most important activities of the NBO is the promotion and development of new materials and improvement of traditional materials. The organisation keeps close contact with the building materials industry and provides technical assistance in regard to matters of production, of quality improvement etc. Techno-economic feasibility reports for setting up plants and factories to produce new materials are prepared by NBO. NBO has provided technical know-how for setting up mechanised brick plants at Ennore, Madras. As mentioned earlier demonstration plans at several places in the country. It has also assisted the Tamil Nadu Housing Board for setting up a cellular concrete plant to produce reactive clay pozzolana by the fluidised bed technique and for manufacturing standard quality dry hydrated lime have been set up in Delhi.

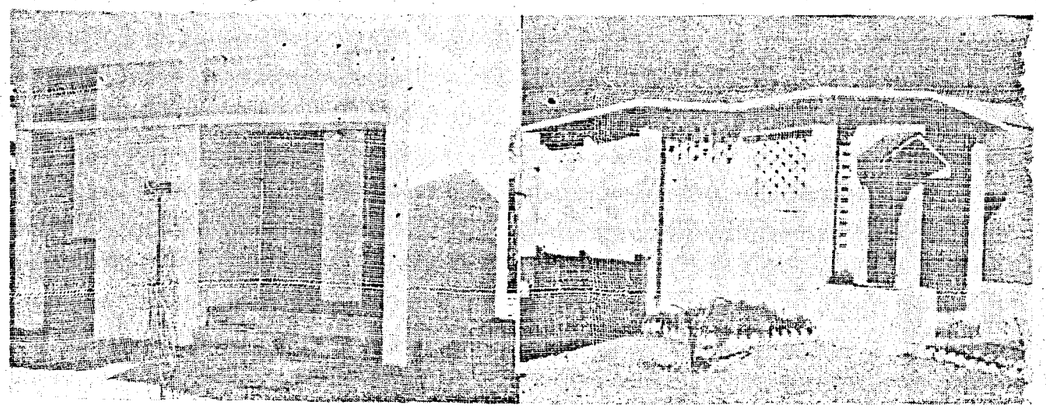
The Forest Research Institute, Dehra Dun has indetified over 120 species of secondary timber as suitable for construction purposes after evaluating their structural properties. The use of secondary species of timber in place of primary species like teak, deodar could alleviate the shortage to a considerable extent.

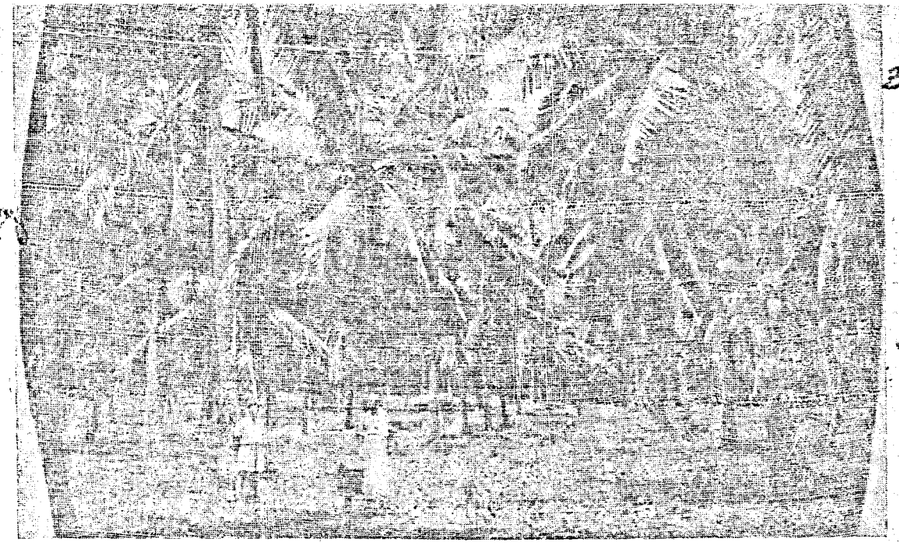
Utilisation and disposal of industrial wastes is a subject which has lately received much attention from the two fold angle of converting them to useful materials and minimise environmental pollution created by them. A number of building materials have been developed which enable disposal of industrial wastes reducing incidental cost. Flyash, wood based panel products, blast furnace slab cement etc. are well-known building materials obtained from factory wastes.

(g) Productivity : Studies on 'productivity in construction' have given new tools to the construction industry. The CBRI has developed a tamping machine for consolidation of concrete, plastering machine, scaffold hoists and gadgets for improved method of brick laying.

(This is the text of the paper presented at the International Seminar on Low Cost Housing held at Madras)

Kerala Housing Board's House, Winner of III Prize. The Tamil Nadu Slum Board's House Costs only Rs. 4648/-





HALF-A-HECTARE UNDER COCONUT CAN SUSTAIN A WHOLE FAMILY

Under rainfed conditions and good management coconut is expected to give a mean annual yield of 60 nuts per palm while the cost of cultivation would amount to Rs. 2,233 per ha. Under irrigated conditions, the yield of coconut is expected to go up to 100 nuts per palm giving a net return of Rs. 7,840 per ha. The response to good management in coconut accrues from the third year onwards. The net return per ha under multistoreyed cropping consisting of coconut, cocoa, pepper and pineapple is around Rs. 15,000 per annum which is the highest. As the most remunerative inter crop under rainfed conditions ginger gives a combined net return of nearly Rs. 13,700. Tubers and banana give net returns between Rs. 6,000 and Rs. 8,000 per ha per year (including that from coconut). Thus one ha of coconut garden with adult bearing palms under intensive cropping programme can sustain a medium-sized family on average standards, while under high intensity cropping programme with irrigation facilities half a hectare would be sufficient for the purpose.

The annual outlay for good management of one hectare coconut garden of 175 adult bearing palms would be around Rs. 2,233. The subsidiary crops would need another Rs. 2,055 to 7,272 per year depending upon the crops grown. Therefore, the annual requirement of credit towards the inputs for intensive cropping programme would range between Rs. 5,500 to Rs. 9,500 per annum. Of this outlay, the investment on the inter crop alone becomes recoverable during the course of the year, as the response to inputs in coconut start accruing only from the third year and stabilised bearing of cocoa is from the third year. This would mean that the credit facilities necessary for successful adoption of this intensive cropping programme and realisation of enhanced agricultural production, should have two components, namely short-term and medium-term loans. In case irrigation equipment is to be installed, especially when the high intensity multi-storeyed cropping is adopted, a third component namely long-term loan also may be required which may be around Rs. 5,000 per ha on an average.

For successful adoption of such cropping programme certain prerequisites are essential. One important factor that limits the adoption of inter/mixed cropping is the age of the palm. When the palms are young, plenty of solar energy and land area are available for any of the crops to be grown. Between the ages 8-10 years and 20 years, when the trunk of the palm is short, the canopy developed by the coconut leaves almost covers up and touches the land, very little sunlight penetrates the canopy and reaches the ground. During this period, only a few crops like colocasia which tolerate shade to a very high degree can get themselves established and give satisfactory yields. After the age of 20 years, as the trunk has grown taller, sufficient slant light reaches the ground and most of the suggested crops can be grown.

The second important factor that limits the cultivation of inter or mixed crops is the spacing between palms. As the palm density increases, the total volume of soil mass occupied by the effective root zone of coconut increases. Roughly an area of 12 square meters round the base of an adult palm confines the effective root-zone. When the spacing is 7-5 m nearly 75 per cent of the land area is available for other crops. When the intensity of planting is as high as 300 per ha, the land area effectively occupied by the coconut roots may still be only 36 per cent leaving nearly two-thirds the land for growing inter and subsidiary crops. However, the shade cast by the canopy may be much higher and may restrict the choice of the inter or mixed crop to be grown.

(iii) **Display Centres** : Displays and exhibitions provide an excellent media for drawing the attention of engineers, architects, builders etc. to technological progress and developments in research. Illustrative charts, photographs, models etc. exhibited in them would highlight the economy and other good points to generate interest amongst the visitors and to motivate them to seek further information from concerned sources. A permanent building exhibition called the NBO Display Centre has been set up by NBO at New Delhi where a wide variety of building materials and products, designs of houses etc. are exhibited. Premier building research institutions have also displayed their major scientific and technological findings at the Display Centre. Such Display Centres provide a very useful institutional medium for bringing professional people face to face with advances in research and development. Similar centres have also been set up in 5 other principal cities in the country notably Madras, Chandigarh, Baroda, Ranchi and Jodhpur.

(iv) **Rural Housing Centres** : To give special attention to improvement of housing and environmental conditions in the rural areas, five regional centres for research, training and extension have been set up under the aegis of NBO. These centres have contributed significantly to transfer of technology to rural areas and bringing about application of results of research.

(v) **International Centre** : International coordination in matters of research and transfer of technology could be best entrusted to a national coordinating agency considering that it has a good experience and knowledge of a wide range of problems which could be of relevance to other countries. Recognising the significance of international cooperation for promoting transfer of technology, the National Buildings Organisation has been entrusted the functions of the Regional Housing Centre for the hot arid regions of ESCAP by the United Nations. The NBO has been bringing about exchange of experiences in the developing countries in the field of low cost housing in several ways.

OPERATIONAL SCHEMES AND IMPLEMENTATION

Some of the operational schemes for effective transfer of technology and research results in the field of low cost housing are suggested in the following :

(i) **Full scale experimental construction** : It is necessary to undertake full scale experimental construction to establish the utility of new ideas, materials and techniques to enquire into the possibilities of respective use, possible variation and thus to transform ideas of results for research into actual practice. Such projects would also provide a cover for unforeseen eventualities or risks which may be involved, create confidence and demand, offer an opportunity to obtain sufficient data for modifying the techniques if necessary, to satisfactorily suit the performance called for. This will greatly assist in transforming the results of research into practice. Provision for undertaking experimental construction should be kept in the building budget of major construction agencies. In promoting building knowledge and its application, experimental projects on a large enough scale would create the desired impact.

Under the Experimental Housing Schemes operated by the NBO, the risk of failure, if any in trying out the new materials, techniques by construction departments is fully covered. The scheme also provides financial assistance to construction departments for undertaking trials with new techniques and materials which they would otherwise find not possible from their regular budget provisions. The experimental projects help to make a realistic assessment of the cost economy and performance of new techniques and materials and to propagate these with greater confidence for wider adoption. Under the NBO's Experimental Housing Scheme, 27 projects costing Rs. 1,64,82,643 have so far been undertaken in different parts of country and grant-in-aid amounting to Rs. 44,88,363/- has been disbursed to PWDs, Housing Boards, etc. 41 new techniques and materials have been incorporated in these projects after due scrutiny by high level technical committee. Successful techniques and materials have been widely propagated and are being adopted to a greater extent.

(ii) **Show how and Demonstration** : Displays and actual demonstration as a means to extending new ideas and techniques are of particular significance in developing countries. They are of great value in developing conviction by converting the 'know-how' into 'show-how'. They also provide training to the people who are involved in the construction operation. The laboratory and full scale trials provide an opportunity for understanding the innovations technicalities involved thereby extending the ideas and techniques further. The putting up demonstration houses helps to give a first hand knowledge of the practical application of new techniques and materials in construction. Construction of demonstration houses adopting innovations in planning and construction in different regions is an excellent method for their wide propagation and acceptance. The NBO in collaboration with the Delhi Development Authority has put up an Exhibition of Low Cost Demonstration Houses at New Delhi where 65 houses for low income group, economically weaker sections and rural people have been put up. A Similar exhibition has been put up in Madras by Tamil Nadu Housing Board and Structural Engineering Research Centre. Such demonstration houses are particularly impressive for the rural people as technical expertise is seldom available in the rural areas and 'self-help' could play a big role in building better houses.

NBO's Rural House Centres have constructed 78 demonstration houses in villages, over a widespread location. A scheme for putting up a cluster of 10-20 demonstration houses in a selected village for land-less agricultural workers along with environmental improvement prepared by NBO is also being implemented by the 5 Rural Housing Centres. A notable feature of the scheme is the use of local materials and construction through 'self-help' contributed by the villagers. The sites for construction have been allotted by the State Governments to landless agricultural workers under a National Scheme. The Rural Housing Centres have already put up the first cluster of demonstration houses during last year. A scheme for developing Model villages is also being implemented by NBO.

(iii) **Demonstration-cum-Training Centre** : The setting up of a plant for manufacturing new or improved building materials requires not only acceptance of the new product but also problems in manufacture. Enterpreneurs generally do not come forward to invest their capital in a new plant unless its utility is demonstrated to him. The setting up of a demonstration plant also fulfills another essential need, *i.e.*, of imparting training to the workers and supervisory staff in operation, quality control, etc. The NBO has recently set up two demonstration plants in Delhi for manufacturing (*a*) clay pozzolans and (*b*) hydrated lime. The first plant has a production capacity of 10 tonnes/day of a standard quality reactive clay pozzolans which is used in the preparation of lime mortars and plasters. The second plant produces dry hydrated lime and has a capacity of 55 tons/day. Both the plants are proposed to be utilised as training centres for workers and other staff of more such plants to be set up in the country. A demonstration-cum-training centre for production of bricks of improved quality by the use of simple machines is also being set up by NBO.

(iv) **Documentation and Dissemination** : Collection and collation of building knowledge acquired through research in various countries is an important work for transfer of technology. It involves evaluation of the knowledge so obtained, study of its applicability and circulation of useful information to the building industry. A properly documented information service and disesmination through different medias are also very important activities in a programme of transfer of technology and research results. This calls for setting up a chain of information centres coupled with library facilities for collection, collation and dissemination of data available from the research institutions and other institutions connected with building science and technology.

NBO has a well organised set up for collection, documentation and dissemination of information. Technical information is collected from research institutions and housing and building development organisations in India and abroad. Catalogues of building research giving brief description of research work are issued from time to time. Directories of building research and development organisations are also brought out. Technical publications and research reports are prepared for wide circulation to PWDs and other construction agencies.

Other channels are also adopted for dissemination of technical information and research results which help to transfer technology to the field. These include arranging film shows, T.V. Programmes and radio talks, conducting seminar/symposia and get togethers of professional people and scientists. With the assistance of UNDP, the documentation and dissemination activities of NBO are being expanded to serve the ESCAP region effectively.

(v) **Training** : The introduction of new technology for application of research findings in construction invariably necessitate change in the working methods. Besides, the workers, the supervisory staff also needs to gain sufficient knowledge of the new materials and tools they will be using or the technique they will be employing in place of methods familiar to them. These aspects point to the necessity of imparting right type of training to them so that the change-over on site could be effected by them without difficulty. Such training could be given with the help of special training centres set up at places of major construction activity. The NBO has been organising from time to time training courses for in-service engineers, architects, builders as well as craftsmen etc. for imparting knowledge and practical experience about new techniques and materials.

RESEARCH & TECHNOLOGY FOR LOW COST HOUSING

Numerous technological developments and research data have been made available by advanced countries for application to low cost housing. The National Research Laboratories and Development Organisations in the developing countries have attempted to adopt these technologies to tackle the problems relating to low cost house construction. Research has also been undertaken on indigenous problems. Without going into details of specific research and technological solutions the broad areas in which work has been carried out are briefly mentioned below.

(a) **Present Roofing/Flooring components** : A number of roofing/flooring slab construction technique making use of precast RC component have been developed. They include: (*i*) channel or trough units ; (*ii*) hollow cored units ; (*iii*) cellular units and partially or fully precast joists ; (*iv*) battens and hollow block construction ; (*v*) doubly curved and waffle shells ; (*vi*) hyperbolic paraboloid shell elements. The adoption of these roofing system effect economy in construction, increase the speed of construction and as well save considerable quantities of cement and steel. In NBO's experimental projects, these roofing/flooring system have been successfully tried with economy in cost and consumption of materials etc.

(b) **Pre-fab systems** : Prefabrication is one of the most important technological developments that has enabled low cost construction on a mass scale in a short duration of time in the advanced countries, particularly in the Continent. However. the systems suited to the production facilities, handling machinery, the type of skills available in the advanced countries are generally not found adoptable in the developing countries where mechanisation has still not made much progress. Prefabricated system has necessarily to be evolved applying appropriate technology in different countries in order that it might be practicable and economical.

The Hindustan Housing Factory has evolved a prefabricated framed type system making use of precast beams, columns and floor elements. Another system with precast concrete walls is also being developed by HHF which has been tried in one of NBO's Experimental projects. The SERC has developed a large panel prefabrication system employing composite panels of cement concrete and structural hollow clay blocks. The Tamil Nadu Housing Board is putting up 144 experimental MIG flats at Madras adopting this system for which the NBO is giving financial assistance under the Experimental Housing Scheme. Yet another system of prefabrication developed in India recently is based on the utilisation of lightweight cellular concrete. The Tamil Nadu Housing Board, SIPOREX India Limited and the HHF have been carrying out further work on development of this system.

(c) **Masonry Construction** : Improvement in the quality of burnt clay bricks and rationalisation of masonry design have made it possible to construct thinner walls in multi-storeyed brick load bearing structures 4-5 storeyed buildings are now constructed adopting single thickness brick walls whereas walls of 1.5—2.0 brick thickness were hitherto considered necessary for the lower storeys of such buildings.

The "NAESEY snak kiosk" run by Thirumathi P. Vijayalakshmi (Pouring coffee standing inside the kiosk.) Twelve such kiosks have come up in Madras City. The allottees of these kiosks cannot go in for outside assistance should business improve; but can take in another member of the NAESEY (National Association of Educated unemployed)

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Subsidy for 391 units involving 85.5 lakhs has been sanctioned under the Central Subsidy Scheme providing employment opportunities for 9951 persons. Further sanction of Rs. 45 lakhs to 200 units is in process.

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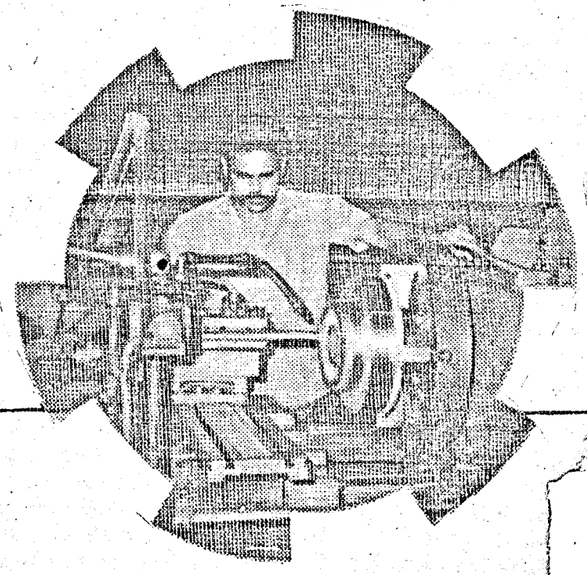

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Swearing In of Prime Minister and Union Cabinet Ministers

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Thiru Prabhudas Patwari, being received at Rajaji Hall on 27-4-77 with Arathi

Thiru Prabhudas Patwari Assumes Office of Governor of Tamil Nadu

My dear Sisters and Brothers,

I have been sworn as the Governor of Tamil Nadu earlier this afternoon. I thought that I should take the earliest opportunity to speak to you and share a few of the thoughts, uppermost in my mind, with all of you. I look upon this august office as yet another opportunity afforded to me to be of service to our people and our great country.

The warm welcome accorded to me when I arrived here in the morning has touched me deeply. I had known the hospitality and friendliness of the people of Tamil Nadu. Today, I am overwhelmed by the spontaneous affection and warmth of welcome shown to me by the people of Tamil Nadu. I am very grateful for your kindness and affection.

We are living in a momentous period of our Nation's history. The recent Lok Sabha elections have proved beyond doubt that the Indian people have an unshakable faith in Democracy. We are committed to the achievement of a truly Welfare Society. In such a society, every citizen has his rights and responsibilities. Our objective should be to enable all our citizens grow to their full stature without fear, in an environment of freedom and equality of opportunity for the common good. Our methods to achieve our cherished goals must have a sound moral foundation. Administration should subserve the good and the welfare of the common man. It is not an end by itself. It shall be my endeavour to draw inspiration from these lofty ideals bequeathed to us by the Father of the Nation Mahathma Gandhi in fulfilling my duties and responsibilities as the first public servant of this great State.

MESSAGE TO THE PEOPLE OF TAMIL NADU BY THE GOVERNOR THIRU PRABHUDAS PATWARI — BROADCAST FROM A.I.R.

Tamil Nadu is presently under President's rule. Our leaders in the Central Government have already announced that the elections for the Legislative Assembly of the State will be held soon. We shall, therefore, be having a popular Government responsible to the legislature and through it to the people before long. During President's rule, the Governor functions as the Head of the Executive. The duties and responsibilities vested in me are onerous. I look forward to your active help and co-operation in discharging my responsibilities in the service of the State.

I am new to Tamil Nadu as Governor and I shall have to study the problems of this State in depth before I can help in finding solutions to them. However, broad priorities and guidelines have been laid down by our Central leaders and we may usefully adopt them in tackling our problems and in promoting the welfare of our people.

Our Prime Minister has promised to eradicate unemployment in the country within a decade. Accordingly, we have to re-orient our economic programmes and re-order our priorities, for creating substantial additional employment, especially in our rural areas. As our Prime Minister has said, Gandhiji's concept of "Antyodaya" is not merely idealistic but an economic and social imperative. The problems arising from the existence of the dual societies of the rich and the poor and of the city and the village have to be solved expeditiously and effectively. The depressed and the down-trodden have a claim to our special attention. Corruption must also be ended at all levels.

Tamil Nadu has a proud history. As I look back over the years, I recall the magnificent contribution of Tamil Nadu to our freedom struggle. High Standards of administration have been set here by illustrious statesmen like respected Rajaji, Kamarajji and other Chief Ministers. Devoted bands of workers from Tamil Nadu have carried the torch of Gandhiji's constructive programmes to distant parts of our country. Be it innovation in Khadi and Village Industries, Rural Development, Co-operation, Harijan Welfare, Prohibition or Social Service Tamil Nadu has set a fine example for other parts of the country to emulate. In statesmanship, administration, education, science and technology, law, industry and agriculture, sons and daughters of Tamil Nadu have carved for themselves places of respect and honour. I have no doubt that this enlightened people of Tamil Nadu will ever be in the forefront of all constructive effort for national development.

I wish to avail this opportunity to thank the Acting President of India and our Prime Minister for the confidence reposed in me and in giving me an opportunity to serve the people of Tamil Nadu as the Head of the State. All that is best in our ancient civilisation and culture is definitely found here. I am proud of your humility and simplicity. At the same time, the people are very progressive in their outlook and quick to respond to challenges. It will be my privilege to be of service to all of you. True to the teachings of Gandhiji, I shall, first and foremost, be a servant of the people. I do hope that through service and dedication, I shall justify the confidence reposed in me and prove worthy of your trust and co-operation.

My wife and I greet the people of Tamil Nadu and convey to them our very best wishes. We all will work together with devotion and zeal for the all-round progress of the State.

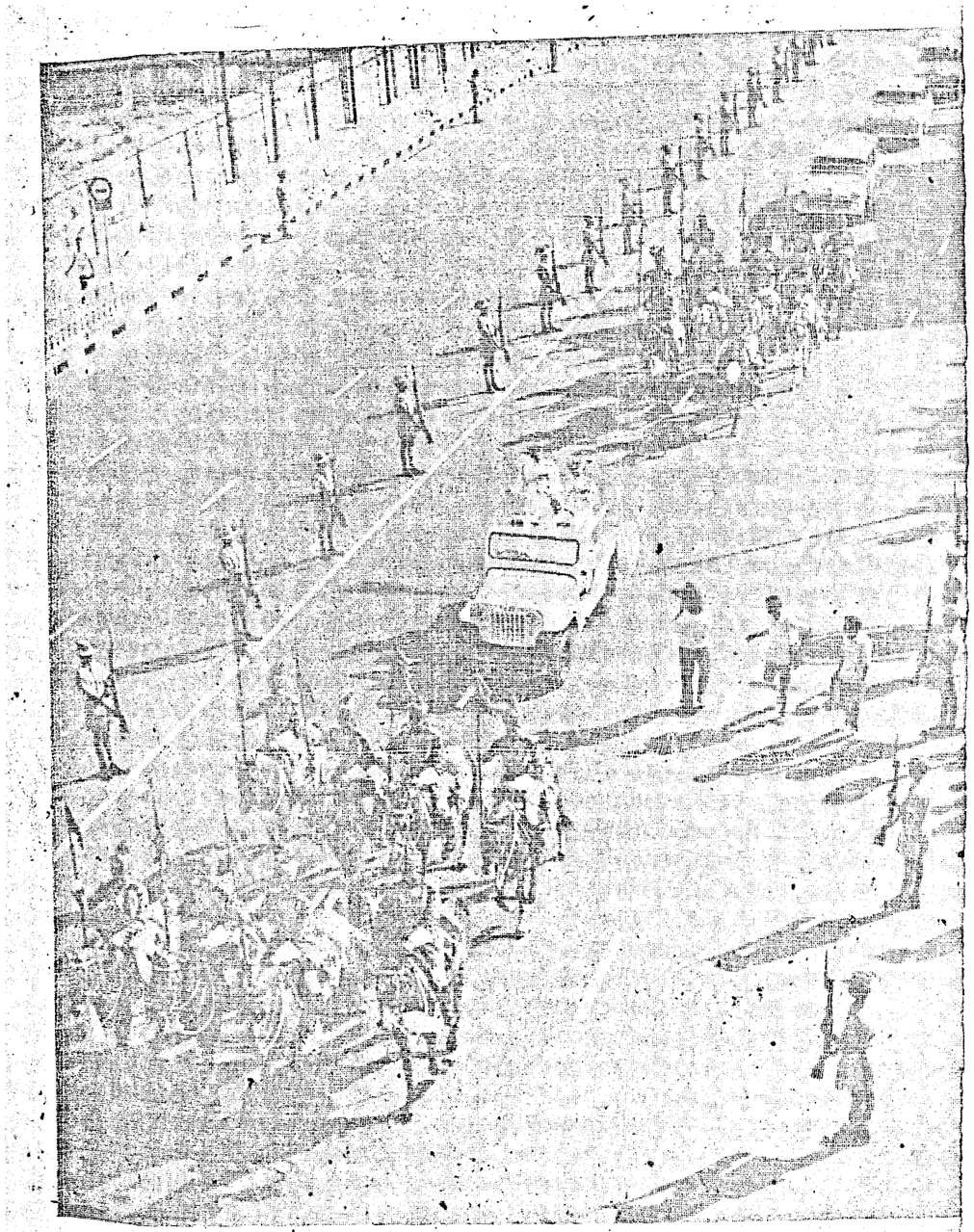
May God accept our prayer.

Jai Hind !

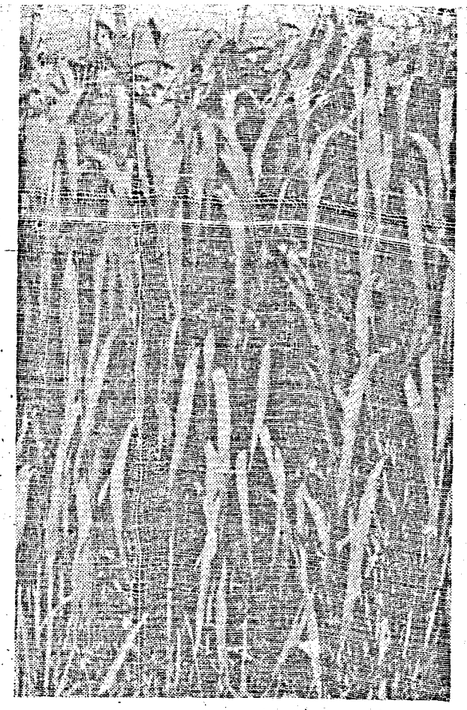
Vanakkam !

—o—

"I am overwhelmed by the spontaneous affection and warmth of welcome shown to me"



Governor's Ceremonial Drive to Rajaji Hall on 27—4—77



'N P 24' Hybrid Grass

Fodder Cultivation Can be Profitable and bring down Cost of Milk too

by

L. M. MENEZES, I. A. S.,
FORMERLY OF
TAMIL NADU DAIRY DEVELOPMENT CORPORATION.

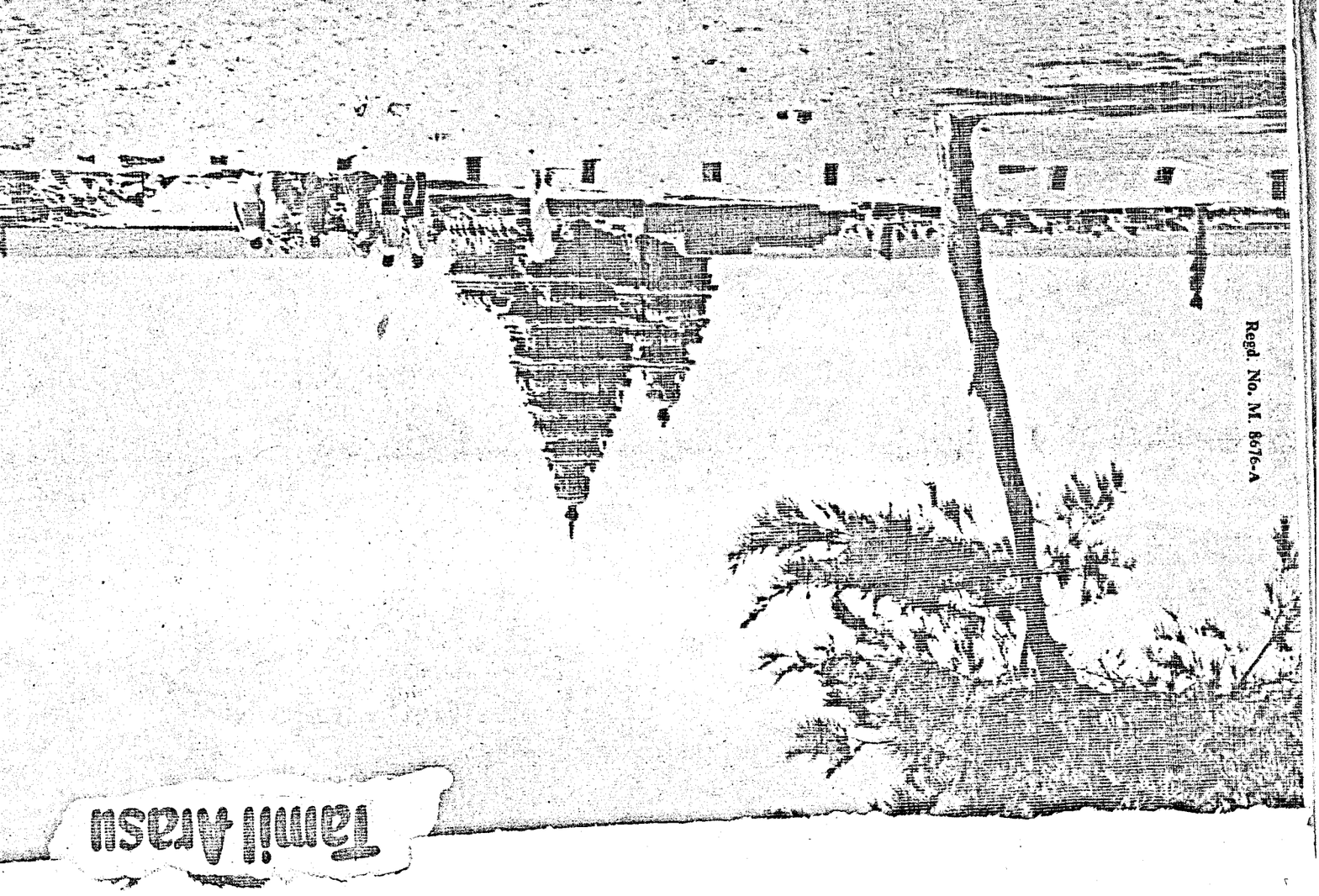
The Tamil Nadu Dairy Development Corporation is often asked: " where has all the milk come from ?' The question merely hides their surprise that from a situation of shortage and rationing, we have reached a situation of plenty and surplus. They ask us whether cows have suddenly started producing more milk or whether new cattle have been introduced in the milk shed. Apart from the purely managerial contribution to this improvement in milk marketing (which is actually the basic explanation of Tamilnadu Dairy Development Corporation performance) it is almost true that cows have suddenly started giving more milk—There is a dormant potential in every village which the enterprising farmer will exploit when a market is created. Another way of looking at it is that the farmer will produce more milk by better feeding if the market is attractive enough. **This tapping of dormant potential already existing accounts for practically 70 percent of the extra milk collected by the Tamil Nadu Dairy Development Corporation in the past 3 years. Only 30 percent is accounted for by milk from animals newly purchased and genetic improvement by cross-breeding and upgrading.**

Forty per cent of the nutrition requirements :

The typical milk supplied to the Tamilnadu Dairy Development Corporation is a farmer with one or two acres, owning one or two milch animals. One of the animals would be dry the other would be producing one or two litres of milk.. If the land is irrigated, the farmer would grow one or two crops of paddy or he may grow a crop of sugar cane. If the irrigation is poor he would grow a crop of cholam or ragi, or he may grow one or two crops of groundnut. During the season he would feed his milch animals and bullocks on paddy straw or cholam stalks. If the animal is in milk he would supplement this with a little cake and wheat or rice bran if available. His cow or buffalo would go out with the village herd to graze in the impoverished common lands of the village. The buffalo would wallow in the village tank when there is water in it—During the season the farmer on his way home from the fields would cut a little grass which grows on road and field margins and bring it for his milking animals. It is said that the cattle of India get only 40 per cent of the nutrition they require to express their full milk potential.

Cost of Production highest in the world :

Inspite of this type of poor nutrition, the cost of milk production in India is one of the highest in the world. Ignoring for a moment the agricultural residues from the farmers own land which he feeds to the milch animals, even a bandful of groundnut cake and wheat bran would cost the farmer more than a rupee. Without counting the cost of his own labour or introducing such refinements as interest on the value of the animal and depreciation, the actual cost of producing a litre of milk in our milk shed is around one rupee today. In the case of organized farms and in the case of high yielding crossbred cattle the cost is much higher. In the case of expensive animals purchased with bank loans, the cost is still higher. In a very cost conscious Corporation like ours, the average unit cost for collection is 7 paise, intermittent processing 5 paise, tanker transportation 7 paise, final processing 10 paise, packing 7 paise and marketing 5 paise. Our average administrative costs are in the region of 7 paise and development cost 4 paise. This gives us a total of 52 paise. If the milk has to be sold to



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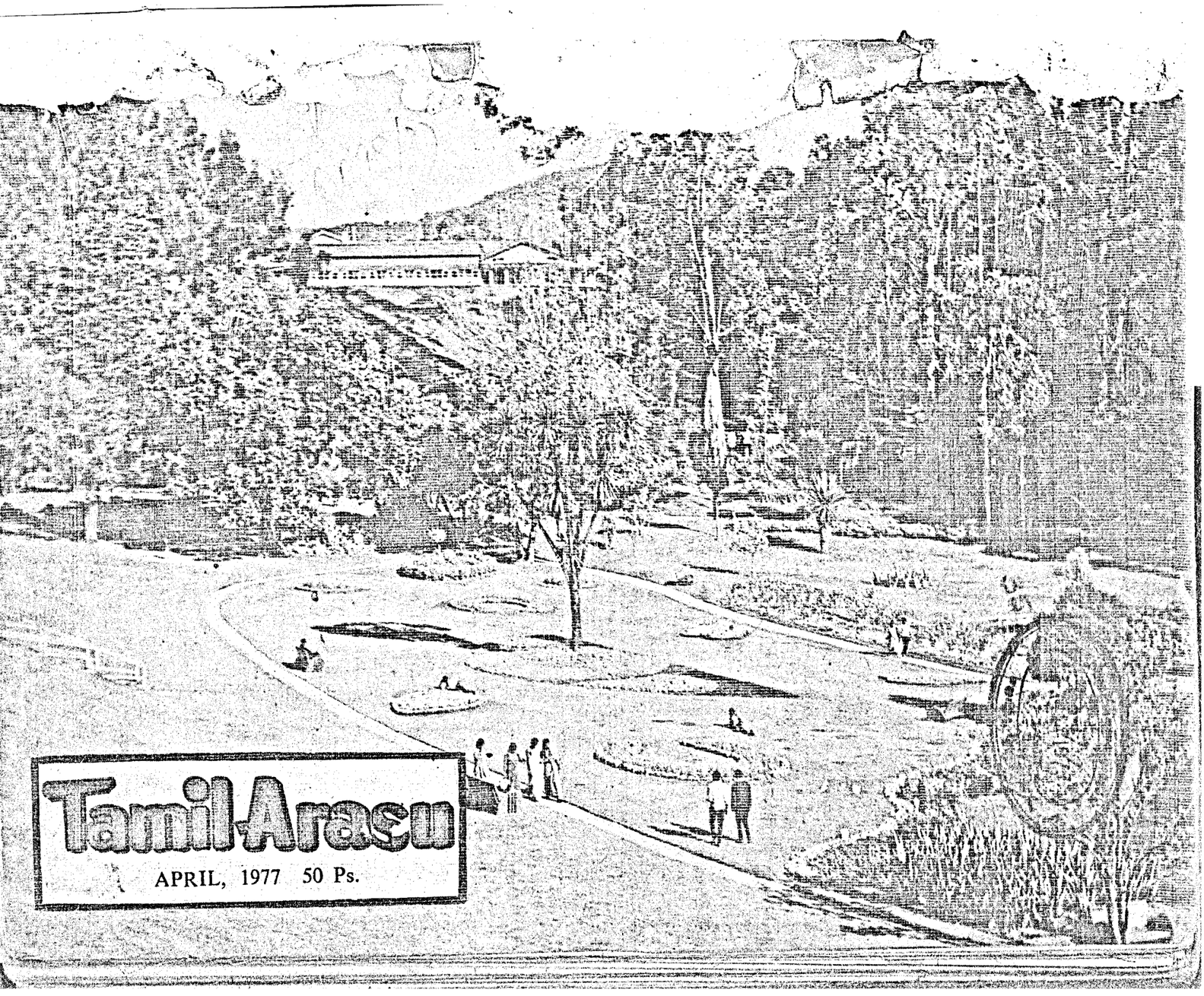
Tamil Arasu



Tamil Arasu

APRIL, 1977 50 Ps.

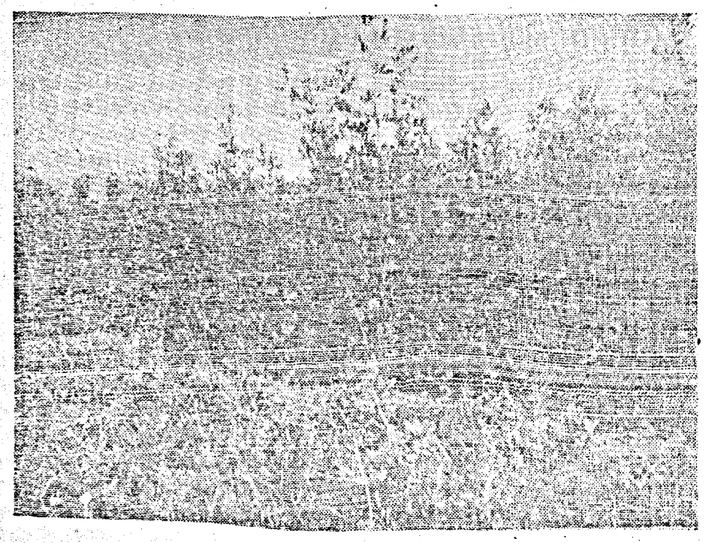
the urban consumer at some reasonable price like Rs. 1.80 to Rs. 2. it is not possible to offer the farmer more than Rs. 1.30 to Rs. 1.40 for milk of average quality. With the spiralling cost of basic feed ingredient like groundnut cake which is an annual feature, the farmer may on the whole make very little per litre of milk supplied. Whether his incentive is enough for him to produce such a commodity is a question which we face all the time. But for the fact that we buy the milk practically at his door step, that the cheque is delivered promptly every Monday, that the mobile veterinary service is available, that the cow is serviced in the village itself and there are other incentives like calf subsidy, fodder subsidy, bonus from the co-operative etc., I think many a farmer would have preferred not to get out of bed at 4 A.M.

To bring down price-cheaper nutrition the only way

Another experience of the Tamil nadu Dairy Development Corporation, has been that inspite of the theoretical gap between minimum needs and actual availability, it is impossible to market milk at any price. It is quite obvious that even at Rs. 2 a litre, the milk budget of an average family which earns less than Rs. 300 a month could be in the region of Rs 60. It is time we realise these constraints. We often talk casually about reducing prices of milk, the need for the urban poor to drink more milk and the sad spectacle of the rural poor not drinking the milk which they produce. Let us realize that the price of milk can be brought down only by cheaper nutrition, that at present costs and prices the slum dweller cannot afford to buy milk and the milk producer cannot afford to drink the milk that he produces.

Whether we look at it from the point of view of nuitrition, from the point of view of optimum utilisation of available resources, from the point of view of dairy development as an instrument of economic change or from the point of view of subsidiary occupation and income for the small farmer, the cost of milk production must be reduced if we are to achieve anything. Skim milk powder is selling at Rs. 5 a kilo in Canada today. Rs. 7 a kilo in Europe and Rs. 6 a kilo in Australia and Newzealand. Our own cost of production at Madurai is Rs. 11. Average cost of other daities in India is Rs. 12 to Rs. 13. Selling price is Rs. 15. The result is that all the dairies in the country are today holding very large stocks of skim milk powder and fat. Many of them will sell a good portion of these commodities at a loss, since holding capacity both in terms of refrigeration as well as locked up capital is net very strong. The wide fluctuation between lean and flush production in our country due to the over-depencence of milch cattle on seasonal availability of grass also contributes to the instability of the milk market. All these factors need to be considered when we approach the subject of milk production and dairy development.

Lucerne grass nutritous fodder and grows well



Economics of Fodder Cultivation :

Cost of milk production can be reduced only in two ways. We should make available to the farmer a balanced feed at low cost. This can be done by the Government making available the main feed ingredients of oil cake, wheat bran rice bran, maize and molasses at a cheap rate. The other way to reduce cost is for the farmer to use more green grass or legumes so as to reduce concentrates. Although availability of land to spare for fodder cultivation is always a constraint in a situation where either food crops have necessarily to be grown or where food crops or cash crops are ostensibly more profitable, it is our contention that the economics of fodder cultivation even at present prices of milk are far better than what is believed. We are prepared to show that it equals some of the staple crops and in certain conditions even surpasses. To get the farmer to spare a few cents of his land for NB, 21 or lucerne is the problem. The age old habit of growing a particular crop on the land handed down by his forefathers, is very difficult to break, even in a situation where the levy price, for example, may not be very attractive. The first step towards this of course is to create a market which we believe we have done. The second would be clear demonstration in a few farms in every village. Although 'Operation Flood' provides for a subsidy for fodder cultivation, personally I believe that such a subsidy by itself cannot induce a farmer to change an age old custom or to appreciate the economics of cultivating fodder, but a visible demonstration can go a long way and this is, what we must do.

Fodder Farms by Milk Co-ops.

Utilisation of Community Land :—

Another approach for which I think there is tremendous scope is the utilisation of available community land where untapped irrigation potential exists, by organisations which have the necessary financial

and technical resources. Such a programme obviously has to to be linked up with a continuous market. **We have a dozen examples of milk co-operatives which are running fodder farms. The Tamailnadu Dairy Development Corporation is experimenting with a small project in North Arcot where tube wells have been sunk on assessed waste land lying fallow and where we intend cultivating perennial fodder for sale to our milk suppliers.** For Tamilnadu Dairy Development Corporation, this is just a link in the chain. The milk truck which goes to the village carries the flask of semen which is handed over to the secretary of the co-operative, who does the inseminations after the milking is over. The same lorry carries the cattle feed produced by Tamilnadu Dairy Development Corporation, which is sold to the farmers. The lorry can also carry grass bundles. When the weekly milk bill is settled the cost of the feed and grass is deducted. In the Nilgiris where we have acute shortage of green grass during the frost period and where there is shortage in most other months of the year also (inspite of a reputation to the contrary) we are taking over 200 acres of erstwhile jenmi land at Gudalur from where we hope to supply atleast a portion of the requirements of milk producers in and around Ooty. It may be mentioned that these operations will not be subsidised in any way and yet we will be able to supply grass at less than 5 paise a kilo. It is my suggestion that a stage has been reached when we must think of more investments in such schemes in preference to setting up of dairy plants, supply of milch cattle and the like. This could be quite easily done under the various special schemes being financed by the Government of India.

While I believe that this problem of reducing the cost of milk production, by increasing the availability of fodder cannot be tackled by one department alone, I believe that a significant contribution can be made by the forest department and the agriculture department. One of the problems of uncontrolled grazing in forest areas is that, a very large number of animals, many of them useless and unproductive, compete for the limited availability of greenery which is not even allowed to grow normally and which is continiously graced prematurely. This type of overgrazing frustrates the potential of both the productive animal as well as the land. This can be corrected only by fencing the land, cultivating a pasture grass suitable to the area and allowing a limited number of productive animals to graze in rotation. If there is water potential, perennial grass or legumes could be grown. This is being successfully demonstrated by the forest department in Dharmapuri under the D.fP. A. P. The crucial link here is between the department, the sheep co-operative or milk co-operative and the Tamil Nadu Dairy Development Corporation. Another crucial factor here is departmental policy and procedure. While a Government Corporation may have some measure of flexibili, a Government Department may have constraints. These are constraints which can be easily overcofhe by support at the highest levels.

The Agriculture Department in its massive extension net work can play a very special role in this effort. I think we can least afford in the Indian context to separate crop culture from livestock husbandry. While agricultural extension may happen to be dealt with by several departments as a result of historical factors administrative convenience, it is plain to all, that livestock is an integral part of agriculture and will continue to be so for a long time to come, whether it is a cow kept for a little milk or as a mother of bullocks needed for work, a buffalo or two, a few sheep or goats or a few poultry. And all of them contribute to the fertility of the soil. Crop and cow is therefore linked together with a very close bond. To promote one while completely ignoring the other would be unreasonable and unpracticable. But as far as extenion is concerned. the message that NB. 21 or paragrass or lucerne can be grown in certain conditions of soil, irrigation and climate that the farm economics would improve by putting 10 or 15 cent under fodder and so it can be easily carried by our agriculture extension staff. This will only have to be backed up by the supply of seed or slips. But we will be hearing more on the subject from the Director of Agriculture.

Wealth from Waste :—

Sewage has always been associated with fodder cultivation and the municipalities can increase their contribution to the total availability of fodder in the State. We are informed for example that 4 million gallons of sewage water of Madras flows into the sea every day. It is calculated that if all this water is utilised, we could bring 1,000 acres more under fodder cultivation. It requires no special imagination to see that this is wealth out of waste. Problem is one of the resources. The Dairy Development Department hve submitted a scheme to Government for bringing 100 acres under cultivation by using the sewage water of Kodingiyoor which now flows into the sea. The scheme costs 12 lakhs of rupees. We have calculated that at the selling price of five paise per kilo, the scheme breaks even in the fifth year. If the various munciplities have a close look at the economics of fodder cultivation with sewage water while also looking at it from the point of view of economic milk production, a significant contribution can be made. **

A field of guinea grass

THE INSTANT KILLER DIPHTHERIA

Diphtheria is another disease prevalent among children caused by a bacillus. The maximum incidence is seen in the children of the age group two to five years. Very rarely, diphtheria may affect adults. As the children grow older they acquire immunity against the disease due to repeated ocntact with small doses of the diphtheria germs.

The early signs and symptoms are fever, sore throat and difficulty in swallowing. This disease is often dangerously confused with severe tonsilitis. The distinguishing feature is the presence of white or greyish patches on the throat, palate and tonsils. The diphtheria germs are present in these patches and can be seen when throat swabs are examined under the microscope. If not treated promptly, diphtheria may cause death through obstruction to breathing. The disease may also leave residual paralysis of muscles after the child recovers.

TETANUS

Tetanus affects persons at all ages. The disease is caused when the tetanus germs enter the body through cuts and injuries. Even a minor injury which one may consider to be too trivial to seek medical aid can cause tetanus. Having entered into the body the germs may lie dormant for a long period before causing the symptoms of disease. Perhaps some of us would have watched new born babies dying from convulsions during the first few days of life. The commonest cause of such deaths is tetanus infection. It is caused by the entry of tetanus germs into the baby through the umbilical cord. The tetanus germs enter into the body because of the unhygienic practices adopted by the untrained village midwife who attends on the bith of the baby. Older children are at risk because they often sustain cuts and injuries while playing. The toxin of the tetanus germs affects the nervous system and brings about violent contraction of muscles making the whole body bent like a vbow. On account of the spasm of the muscles of the face and throat, swallowing of even fluids becomes difficult. Tetanus infection, if not detected early and treated, ends fatally.

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PREVENTION IS BETTER THAN CURE

From what is said above it i: clear that these diseases, if they do not cause death would leave behind after effects like brain damage, stunted growth, maimed limbs which would handicap children)or the rest of their lives. The simplest, cheapest and most effective way to prevent the diseases is to give children the protective immunizations against them. We are happy and proud that we have succeeded in eradicating smallpox from the country; this was done through successful vaccination. As in the case of small'pox, there are vaccines for preventing the diseases of whooping cough, diphtheria, tetanus and poliomyelitis. The antigens against diseases of diphtheria, whooping cough and tetanus are combined in 'Triple Vaccine.' The level of protection achieved by giving the three antigens together in one shot iss much higher than when the antigen are given separately against each disease. Further, children are spared the pain of having to take three injections separately. The ideal time to start Triple Vaccine immunization is when the infant is about four months old. It is customary to give three doses o) Triple Vaccine at intervals of four to six weeks. However, two doses of the improved type of Triple Vaccine used in the Government programme for immunization given at an interval of 8-12 weeks between the doses give equally adequate protection against the diseases. After completing the primary course of injections between four to nine months of age, the level of immunity should be boosted up by giving one dose of Triple Vaccine when the child is about one and a half years old. Subsequently at about the age of five years when the child is admitted into the school a second booster does should be given. This injection should contain only the antigens against diphtheria and tetanus because beyond the age of five years whooping cough is not a problem. A further booster dose of tetanus toxoid only is recommended to be given between 10 to 15 years of age when the child leaves the school. This would ensure life long protection against tetanus infection. However, it is advisable to take a dose of tetanus toxoid injection when one sustains an injury on the road, in the playgrounds, fields etc.

* * *

IMMUNIZE PREGNANT MOTHERS

It is a good practice to immunize pregnant mothers with tetanus toxoid. This is necessary because the majority of mothers take the help of untrained village midwife at the time of child-birth and the unhygienic practices of the *Dai* expose both the mother and the new born infant to the risk of tetanus infection. Many mothers and new-born infants in rural areas die of tetanus infection contracted at the time of delivery of the child. By immunizing the pregnant mothers we immunize not only the mother but also the child in her womb.

The triple vaccine is injected into the muscle over the upper arms, the outer part of the thighs or the buttocks. Some pain at the site of injection and mild fever is expected after the injection. These reactions, however, subside within 24 to 48 hours, without any treatment.

POLIOMYELITIS

Effective vaccines are available for protecting children against poliomyelitis. There is one vaccine which is given though injections as like the triple vaccine. Another vaccine, given by mouth, is more commonly used. Starting from about four months of age, three doses of poliomyelitis vaccine have to be given at intervals of four to six weeks between doses. Poliomyelitis vaccine can be started simultaneously with triple vaccine. Normally, children over eight years of age need not be immunized. Care should be taken to see that infacts are not bread-fed for four to six hours before and four to six hours after the administration of the vaccine. During this period the child can be fed artificially and should not be starved. Hot water, hot milk and hot coffee hould not be given for half an hour after the administration of the vaccine.

Children should be in good heal h at the time of receiving the immunizations. The child should be examined by a doctor before starting the immunizations. It is important to give two injections of triple vaccine and three doses of poliomyelitis vaccine to obtain adequate protection. One dose will not serve any purpose.

Triple immunizations for children and tetanus immunizations for pregnant mothers are made available free of charge through all Government hospitals and primary health centres. Polio vaccine is available in the hospitals in large towns where the disease is more prevalent.

It is also available in chemist shops. Why not make use of these reliable preventive measures and protect children from)the dreaded diseases ? Parents will be spared considerable agony and expenses, and the children unnecessary pain and suffering. The best birth day gift one can give to a child would be to ensure the required immunizations against diseases before its first birth-day.

Following is the message by Dr. E. Mahler, Director-General of the World Health Organisation, for the occasion :

"It is tragic that vaccination, one of our most effective techniques in preventive medicine, is not yet available to all children in the world. Over the last 50 years vaccination has been outstandingly successful in many countries in controlling Diphtheria, whooping-cough, infantile paralysis and measles while tetanus and the childhood forms of tuberculosis are also becoming rare diseases — in part due to vaccination.

In contrast, we estimate in the "Developing World" there are 80 million children born each year who require, but do not record protection. There are a number of reasons for this State of Affair Their relative importance varies from country to country :

—The public, and the health professions, do not appreciate the toll on health and lives taken by these diseases, nor how effective vaccination has been in reducing it :

—To protect a child for life the vaccines cost about dollers 2-00 : In the poorest countries this may be more than the budget of the health services can carry.

A lot more can be done. Health care systems can be improved to provide immunisation along with other effective routine services for children and mothers. They can be expanded to reach the rural populations and the urban poor. The problems we are facing are not primarily medical. The informed co-operation of the people, the raising of the funds and the effective strengthening of the basic health services are all difficult necessities, but attainable and very worthwhile.

The World Health Organisation and the United Nations Children's Fund — whose active assistance we particularly welcome — believe that control of infectious disease is a necessary conditions of social and economic development. To establish an efficient and permanent childhood immunization service is a significant step for any nation's progress in that direction."

BANANA EXPORT:

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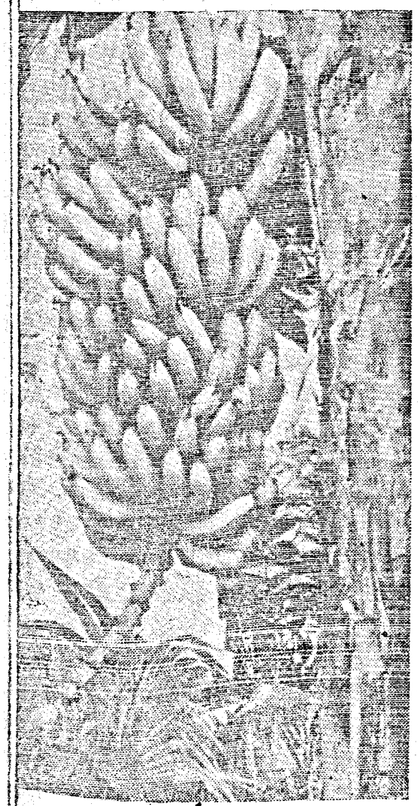
THE CO-OPERATIVE WAY

The Gudiyattam Taluk Co-operative Marketing Society has launched on a programme of export of banana fruits. The villages of Sempalli, Jankalapalli, Pernampet, Krishnapuram, Venkattapuram and Gowrapet in Gudiyattam Taluk of the North Arcot District are well-known for the cultivation of Robusta,



Cavandish etc., quality of bananas much in demand in the export market. The cultivators of these crops were till recently victims of private wholesale traders who used to advance them money in anticipation of the crops and buy their produce for cheap price. With the entry of the Co-operative Marketing Society in the field, the villagers enjoy a fair deal for their produce.

About two months prior to the maturity of the crops, officers of the Taluk Marketing Society and the Fruits Export Corporation undertake a joint inspection of the fields, after which the marketing society issues the necessary advances to the growers according to the expected outturn of the crops. The fruits are obtained from the growers at the time of harvest. The Marketing Society arranges for the export through the Fruits Export Corporation.

The banana cultivators of the area obtain good price for their fruits from the marketing society — the present rate being Rs. 550/- per ton — which is a lot more than those offered by the private merchants. The farmers welcome the service of the cooperative and are benefited in large numbers.

The Vellore Co-operative Central Bank has sanctioned financial accommodation of Rs. 3 lakhs to the Marketing Society for its export business.

POWER CHEKKU SCHEME FOR EDUCATED UNEMPLOYED

Vadalur Oil Production Co-operative Society in South Arcot District has afforded employment to 21 unemployed persons of whom 10 are educated. The society was organised under the auspices of Khadi and Village Industries Board. The country 'Chekku' drawn by bullocks have been replaced by motor driven power 'Chekkus' in the society and this has resulted in the saving of animal power and labour. Government have sanctioned share-capital loan of Rs. 10,000/- besides Rs. 55,000/- for purchase of ten power driven chekkus. Building loan and subsidy on 50 : 50 basis was also sanctioned to the society for construction of pucca shed. The members have also been in receipt of loan advance of Rs. 350 each from Indian Overseas Bank for subscribing to the share capital of the society. For crushing a bag of gingilee seed it took a long time previously when bullocks were used for the "Chekkus." Now that power driven chekkus are established, one member is able to operate it for crushing a bag of gingilee seed and produce oil in about six hours. Power driven chekkus extract more oil than the traditional bullock operated ones. Each member earns a wage of Rs. 12 per day for crushing a bag of gingilee seed. The society has thus been able to afford gainful employment to its members, who were previously unemployed, and who now earn not less than Rs. 300/- per mensem. The required gingilee seed is purchased by the society from the Market Committee established at Vridachalam.

PRODUCTION BOOST THROUGH BETTER MARKETING

During the seven months ending January 1977, this year, the Nilgiris Co-operative Marketing Society had sold agricultural produce of its members mostly potato, to the value of about rupees three crores and eighty five lakhs. It has distributed manure, pesticide, agricultural implements and seeds for about sixty five lakhs rupees. Since October last year, the society has been accepting the ginger produce from the members also for marketing. The sale of this produce till the end of January 1977 this year amounted to ninety two thousand rupees. The society is owning eight godowns of a total capacity of eight thousand tonnes for storage of its members' produce for better market. A ninth godown is under construction at the Mettupalayam Branch. The establishment of a potato dehydration plant is under active consideration. In order to afford stay facilities for the members who come from the hills to the plains at Mettupalayam for sale of their potato crop, the society has constructed a guest house for them with necessary amenities. The society has opened its new branch of Coonoor in addition to the existing ones at Mettupalayam, Cuddalore and Kotagiri. It has also opened its show room at Ootacamund market. The better marketing facilities offered by the society has given a boost to agricultural production in the concerned areas.

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CHILDHOOD DISEASES

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IMMUNIZE AND PROTECT YOUR CHILD

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W. H. O. DAY THEME FOR 1977

The tender age and immaturity of children make them more susceptible to diseases than adults. There are some diseases which affect children primarily, like whooping cough, diphtheria and poliomyelitis. Other diseases like tetanus affect people at all ages ; but become more serious when they affect children.

WHOOPING COUGH —PERTUSSIS

Many mothers would have had the experience of whooping cough either among their own children or among the children of neighbours. The disease is characterised by redness of eyes, running of nose, sore throat and spasmodic coughing. The peculiar spasmodic cough ending in a whoop has given the disease its common name : 'whooping cough.' Those who have heard the 'whoop' once will never forget or fail to recognise it again. The prolonged course of the disease with coughing, depletes the health and vitality of the child and makes it prone to other infections. Whooping cough is caused by a bacterium and attacks children from a few months old up to the age of five years. Older children are generally free from the diseases. The disease is most severe when it affects younger children and the mortality is maximum among children below one year of age.

INFANTILE PARALYSIS —POLIOMYELITIS

It is not uncommon to see children crippled with paralysis of one or more of their limbs. Such handicaps are generally the after effects of an attack of piolomyelitis. The disease is caused by a virus. The early signs of the disease are very much like a common cold — slight fever, general discomfort, lack of energy and headache. Luckily, most of the cases recover from the attack smoothly. However, some of them develop paralysis of muscles. Hence the name 'infantile paralysis.' If the paralysis affects the muscles of respiration and of other vital functions it would end in death. functions it would end in death. The less severe cases recover with residual paralysis in one or more limbs. Even though it is a disease of children, poliomyelitis may occasionally affect grown up people.

TACKLING THE PROBLEM OF MALNUTRITION

SALT TO BE FORTIFIED WITH IRON TO COMBAT IRON-DEFICIENCY ANAEMIA

—oOo—

PILOT PROJECT IN TAMIL NADU

Nutrition is part of Health while Malnutrition is part of disease. Malnutrition is a common health problem that all developing and under-developed societies suffer from. In India we have taken up the programme of fighting malnutrition through various schemes after careful research, study and field trials. The major nutritional and public health problem of iron deficiency is anaemia. The food and Nutrition Board, Government of India and Tamil Nadu Government have proposed to tackle it on a calculated basis, mobilising various health service organisations.

Iron deficiency is common among the vulnerable sections. Pre-school children and pregnant women are the worst sufferers. Over 40% of our children in the age group of 1 to 5 years suffer from anaemia and the pregnant and nursing women feel the pinches of iron deficiency. Not only iron deficiency but general malnutrition and under-nutrition can be successfully fought if the dietary habit of our people are changed and the wholesome and balanced food in sufficient quantity is made available to all sections of population. Is it possible in a given period of time? The answer is 'NO'. With available resources with us and the scientific and technological innovations at our disposal, we can make a three-pronged approach namely (1) correction of dietary habits and education, (2) supply of pills and (3) fortification of common salt with iron. The first two methods are not immediately possible and element of prevention is absent in the second approach.

Salt is commonly used by all and it is suitable for incorporating iron. Salt production in India is estimated to be around 5 million tonnes annually, of which, about 3 million tonnes are used for human consumption.

In collaboration with the National Institute of Nutrition, Hyderabad the Food and Nutrition Board, Department of Food, Government of India, carried out a study of selecting a suitable iron compound to forty common salt. The extensive laboratory studies have shown that common salt can be fortified with iron orthophosphate along with sodium acid sulphate. The iron content of the fortified salt will be 1 m.g. per gramme of salt.

The salt fortified with iron phosphate and sodium acid sulphate has an excellent shelf-life and can be stored under normal storage conditions for sufficient length of time without development of any colour or taste. The bio-availability even after long storage has been found to be satisfactory., Based on the laboratory findings, the Food and Nutrition Board, has now sponsored pilot studies on the production of iron fortified salt and community field trials. The Food and Nutrition Board has sponsored a pilot project for production of fortified salt on pilot plant basis in collaboration with Government of Tamil Nadu.

Field trials by Hyderabad Institute of Nutrition, All India Indstitute of Hygiene & Public Health, Calcutta, All India Institute of Medical Sciences, New Delhi and Institute of Child Health, Madras, are being undertaken to test and evaluate the beneficial effect before the same is released for marketing and distribution. The equipments for the production of fortified salt have been installed at the premises of M/s. Marthi Crystal Salt Company, Tiruporur near Madras and it is a joint sector company. The salt produced in the factory of M/s Marthi Crystal Salt Company, is made available to the above mentioned four National Institutes for Field trials. The pilot project envisages Research and Development efforts on methodology, technology, equipments, economics of production, storage studies, specifications and marketing for evolving a strategy for large scale production and distribution.

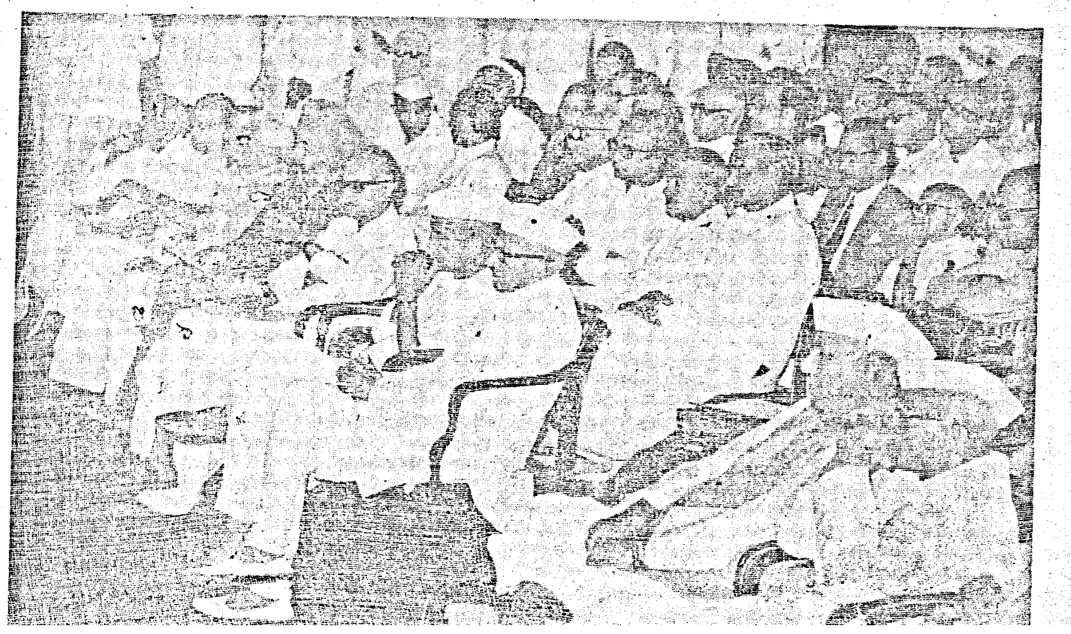
The cost of fortification is estimated to be about 10-12 paise per kg. of salt. At the average level of consumption of 6 Kg. per year per person, the additional expenditure involved is less than 75 paise per person per annum. The Social Welfare Department of the Government of Tamil Nadu has selected a few slum centres in Madras and the trial have evoked good response from the people and it is hoped that the fortified salt will form a routine constituent of the food intake of the common masses in our country.

—V. PARANJOTHI, M.A.

Joint-Sector Company of Madras now Produces Iron-fortified salt for Country-wide tests

Swearing In of India's Prime Minister

Th'ru Moraji Desai being sworn in as Prime Minister of India on 24th March 1977, at Rashtrpati Bhawan, New Delhi.



Thiru Atal Behari Vajpayee
External Affairs

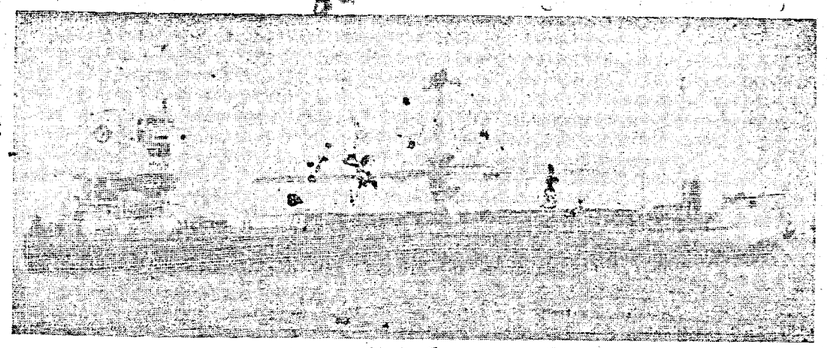
Thiru Ravindra Varma
Parliamentary Affairs
and Labour Welfare

Thiru Brijlal Varma
Industries

Thiru N. SANJIVA REDDY
Speaker

Accent on Welfare of Seamen

National Maritime Day



India's Mazgaon docks built this Cargo vessel for Singapore

The Merchant Shipping Act, 1958, provides for the setting up of National Shipping Board, the National Welfare Board for Seafarers and the Shipping Development Fund.

The National Shipping Board formulates the policy with regard to the growth of Indian shipping to achieve our goal that a major portion of our import and export trade should be carried out by Indian Shipping. To achieve rapid growth of Indian tonnage liberal loans are given by the Shipping Development Fund Committee to Indian Shipowners to acquire ships to compete in International trade. Since 1947 Indian Shipping has acquired considerable tonnage.

The National Welfare Board for Seafarers provides various amenities to Indian Seamen including free medical treatment of seamen under off-articled scheme within one year period. Club/Hostel accommodation also have been provided throughout the Indian Ports at very nominal rates. Social security in the shape of Provident Fund and Gratuity has also been provided for our seamen. It is to be noted that foreign shipping companies also employ a large number of Indian seamen from Bombay, Calcutta and Madras Ports.

Examination Centres have long been established at Bombay and Calcutta for granting certificate of competency of various grades both deck and engine department of foreign-going and home trade ships. In July 1976, an Examination Centre has also been opened at Madras and examination for Skippers and Fishing Secondhands are being conducted here.

TRAINING FACILITIES FOR MERCHANT NAVY

Training facilities are provided by the Government of India for entry into the Merchant Navy at various levels.

T.S. 'Rajendra,' Bombay, is a pre-sea training institution engaged in imparting training to young boys for service as Navigating Officers in the Merchant Navy. The 'Rajendra' is a training ship anchored at a distance of about three nautical miles in the stream of New Ferry Wharf, Bombay. Tehcnical training here includes theoretical and practical instruction in navigation, chart-work and pilotage, electronics, ship knowledge, seamanship, ship construction and stability, engineering, signalling and Meteorology.

TECHNICAL INSTRUCTION

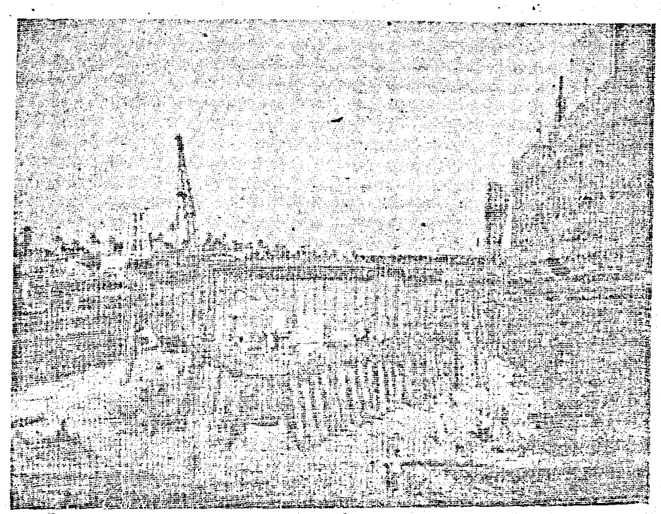
The Directorate of Marine Engineering]Training is the only institution training marine engineers for the Indian Merchant Navy with its headquarters in Calcutta and branch in Bombay.

The training in the DMET is industry-oriented and organised with due emphasis on technical instruction and practical training to meet the requirements of modern marine technology, keeping the future development in view.

A comprehensive practical training in sea-craft is provided in the three establishments, T. S. "Bhadra" (Calcutta), T. S. "Mekhala" (Visakhapatnam) and T. S. "Navlakshmi" (Navalakshmi), which serve as effective induction to the sea-profession.

Adequate theoretical knowledge is imparted and rescue work, first aid etc. are also taught. Emphasis is laid here on the development of functional skills, discipline and character.

75,000 DWT Bulk carrier being built at Cochin



Men, Machines and Innovations Combine for Fast Handling of Cargo in Madras Harbour

SEAWARD EXPANSION OF HARBOUR CREATES MODERN BERTHING FACILITIES.

The Madras Port has ushered in an era of improved ship-berthing and fast movement of cargo — both bulk cargo and general cargo. In regard to general cargo the Madras Port Trust works round the clock throughout the year excepting on six holidays and has an adequate fleet of wharf cranes of various capacity, mobile cranes, fork lift trucks for working on the wharves and special electrically operated trucks for working inside the hatches, heavy lift cranes of 50-tons and 120-tons capacity of which the latter is a floating crane, payloaders, tractors, trailers, etc.

The Port has a tradition for fast discharge and has always been ready to innovate ways and means for fast handling of cargo. It is backed by a well equipped workshop for proper upkeep and maintenance of cargo handling equipment and gears.

BULK CARGO

The first bulk handling facility that was created was the oil jetty in the Bharathy Dock designed for accommodating tankers of 40 ft. draft. This jetty was constructed to handle the crude imports meant for the Madras Refineries located at Manali and for handling the increasing traffic in other POL products. It is equipped with 5 marine loading arms, each rated for 1,250 tonnes per hour. Three serve the crdue tankers which can pump at the combined rate of 3,750 to 4,000 tonnes per hour. The other arms can handle the white oil, naptha and other products and deballast. The marine loading arms are very fast acting — the connections and disconnections occupying approximately about 15 minutes. There is 4,000 cubic metre tank for receiving deballast water and arrangements for separating the oil from water and reclaiming it. Pipelines connect the oil jetty to the Madras Refinery and other oil installations. This jetty is equipped with necessary arrangements for fire fighting consisting of tower monitors, powerful fire fighting pumps, mobile monitors, etc.

In addition to the above, to trap oil pollution that may be caused by any unexpected leakage of oil from ships, the Port has recently acquired oil booms and an oil recovery unit with a recovery capacity of 6,000 litres per hour. The oil boom can be used to contain the oil pollution and the recovery unit to recover the oil.

The oil jetty which has been in use since 1972 has sufficient capacity to allow expansion of the Madras Refineries from its present capacity of 2.5 million tonnes to 3.5 million tonnes per annum.

DRY BULK FACILITIES—ORE

The Madras Port has been exporting iron ore for more than 15 years. Initially facilities were created for export through South Quay III which is capable of accommodating 15,000 DWT ore carriers. The loading arrangements consisted of two 13-ton transporter cranes, three 13-ton wharf cranes and a railway link operated by diesel locomotives to connect the ore stock yard and the wharf. The railway link has been now replaced by tractor-trailers. The transporter cranes are used both for stock-piling and loading the ore into special open wagon mounted tubs which are subsequently moved by diesel locomotives to South Quay III where the tubs are lifted by the wharf cranes and unloaded into the ships' hatches. This arrangement is capable of handling about 4,000 tonnes per day.

PORT'S INNOVATION

When ore exports began to increase, the Port innovated an arrangement at Jawahar Dock East making use of the available payloaders and cranes. The wagons were manually unloaded and the payloaders were used to load the tubs which were unloaded into the ships' holds by 4 rope and single rope wharf crane fitted with special tubs designed and manufactured by the Port itself. This arrangement is capable of loading about 10,000 to 12,000 tonnes per day. The Port has handled upto 2.2 million tonnes per year by this arrangement and subject to availability of vessels it is expected to export about 2.5 million tonnes with this arrangement during the current year.

With the enormous growth in the world ore traffic which increased from a mere 33 million tonnes in 1952 to over 330 million tonnes per annum by 1974, India which is fortunate to be in possession of some of the largest deposits of iron ore in the world has come to occupy an important place among the exporting countries. The country at the same time cannot fail to take note of the fact that iron ore deposits are being discovered in other countries also such as Australia, Brazil, etc., which are providing sophisticated rapidloading arrangements for ore carriers. The Government has, therefore, decided to provide fully mechanised ore loading facilities at the Port of Madras along with the Ports of Visakhapatnam, Goa, Haldia and Paradip.

This loading facility which is likely to be completed in the second quarter of 1977 consists of twin tipper platforms each designed to handle 2,000 tonnes per hour, two rail mounted stackers capable of stacking 2,000 tonnes per hour each, two rail mounted reclaimers each designed to reclaim 4,000 tonnes per hour. 100,000 DWT combination ore carriers can be accommodated in the ore berth. The stockpile behind the ore berth is capable of receiving upto 8 lakhs tonnes. The rated capacity of this ore loading facility is 8,000 tonnes per hour and it is capable of handling more than 10 million tonnes annually.

The commissioning of the mechanised ore berth should strengthen the hands of the MMTC who have been trying to augment the export of iron ore of this country as well as secure more attractive prices for the Indian iron ore.

BULK HANDLING OF FERTILISERS

The Madras Port has been handling a sizeable quantity of fertilisers. However, till recently fertiliser handling suffered from the following drawbacks :

(1) Lack of protection from rains to bulk fertilisers which were being unloaded on open wharves.

and

(2) Lack of proper standardisation of bags on the wharves.

In view of the enormous savings in importing fertilisers in bulk as against getting them in bags, it is obviously in the interests of the country to obtain fertilisers in bulk and provide arrangements for bagging and standardising on shore. To overcome the drawbacks mentioned above, the Port has provided a medium speed Mechanical Handling Facility for fertilisers at South Quay I. It consists of two 10-ton cranes fitted with electro hydraulic grabs with a payload of 4-tons each, three 3-ton general purpose cranes for discharging fertilisers by slings, hoppers on the wharves to receive the fertilisers from the grabs and slings, conveyors for carrying the fertilisers into the first floor of the transit shed, spreaders for stacking the fertilisers in the first floor, of feeding the automatic weighing, bagging and stitching machines and 8 automatic weighing, bagging and stitching machines installed in the ground floor for standardising the fertiliser bags and delivering them in stitched conditions. The system provided is capable of the following:

(1) Using both manual and mechanical discharge unload about 2,500 tonnes per day from the ships' holds on to the conveyors ;

(2) Store about 3,000 tonnes of fertilisers in bulk in the first floor ;

(3) Automatically weigh, bag and stitch the fertiliser bags at a rate of 2,500 tonnes per day ;

(4) Provide covered accommodation in the ground floor for another 4,000 tonnes of bagged fertilisers.

The South Quay I is well served with railway and road approach, for clearance of stitched fertiliser bags. It is also proposed to shift a 2-ton crane now being used for export of iron ore after the commissioning of the mechanised ore berth from the Jawahar Dock to South Quay I for increasing the quantum of mechanical discharge. Calf dozers expected shortly will be used inside the hatches of the vessels towards the finishing stages for collecting the fertiliser to improving the grabbing efficiency.

* * *

BULK TERMINAL FOR FERTILISERS IMPORTS: MECHANICAL FACILITIES MOOTED

The Ministry of Agriculture have also plans for putting up a Mechanical Fast Discharge Bulk Terminal for handling fertilisers at the Madras Port for a projected traffic of 1.5 million tonnes. Messrs. Howe International of Canada are now working out the Project Report for this facility. The location of the facility — whether in Jawahar Dock or in Bharathi Dock — the arrangements for unloading, etc., will be finalised after the Project Report is received.

COAL FOR VIJAYANAGAR STEEL PLANT THROUGH MADRAS HARBOUR

The Metallurgical Engineering Consultants of India who have been appointed by the Government as Consultants for the proposed Vijayanagar Steel Plant are actively examining the economics of moving the coking coal required for the steel plant through Madras Harbour. The ore berth receives iron ore from Bellary-Hospet mines in BOX rakes and as they are in close circuit movement, the wagons are returned empty on their way back from Madras to the mines. Moving coal through Haldia by ships, unloading it at Madras Harbour, loading it on to the empty ore wagons ontheir return journey to the steel plant which will also be located in the mines area, is obviously an attractive proposition as it can bring about a reduction in railway freight for ore as well as coal without calling for any significant improvements to railway lines and rolling stocks. If ultimately this mode of moving coal is chosen, the Port will put up facilities for handling approximately 3 million tonnes of coking coal at the Bharathi Dock. There is enough space in the reclaimed area in the Bharathi Dock for putting up necessary coal storage, marshalling yards, bunkers, etc. As per the present programme, this project will have to be completed by the year 1981.

FOODGRAINS

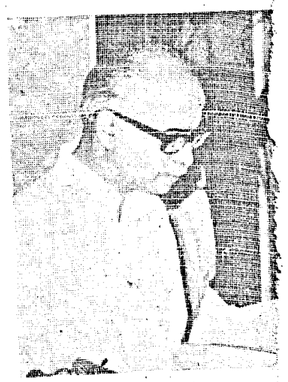
The Madras Port has been regularly handling imported foodgrains, mostly wheat, using wharf cranes with slings, ships' cranes derricks and to a limited extent vacuators.

The Ministry of Food & Agriculture, Government of India is considering a proposal for installing bulk handling facilities for foodgrains at one of the Jawahar Dock East berths, backed by a silo of sufficient capacity with arrangements for standardising bags and for

UNION CABINET MINISTERS

Thiru Chauduri Charan Singh
Home

Thiru Jagjivan Ram
Defence



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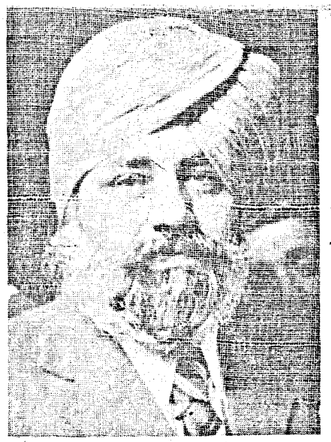
Information & Broadcasting

Thiru H. N. Bahuguna
Petroleum and Chemicals



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Agriculture & Irrigation

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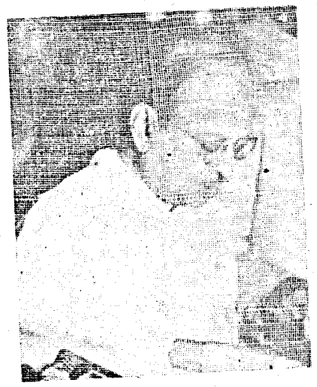
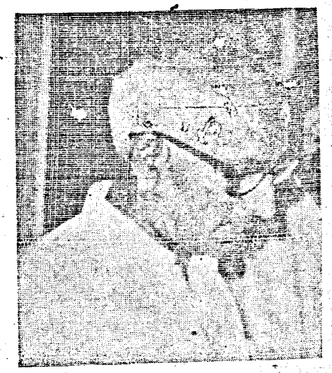
Thiru Shanti Bhushan
Law, Justice and Company Law

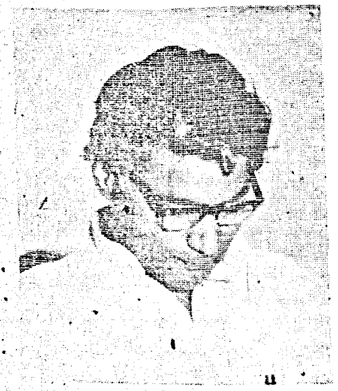


Dr. Pratap Chandra Chunder
Education, Social Welfare and Cultural Affairs

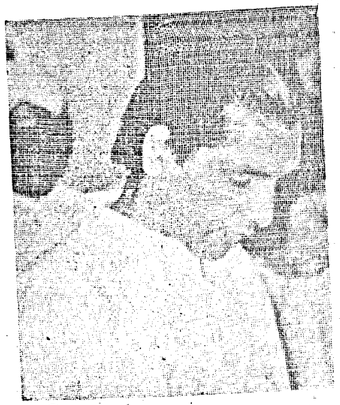
Thiru Mohan Dharia
Commerce, Civil Supplies & Co-operation



Prof. Madhu Dhandavate
Railways



Thiru George Fernandes
Communications



Thiru Purushottam Kaushik
Tourism and Civil Aviation

Thiru Raj Narain
Health and Family Welfare

Thiru H. M. Patel
Finance

Thiru Biju Patnaik
Steel & Mines

Thiru P. Ramachandran
Energy

loading into wagons and lorries. This terminal will have an estimated throughout of 0.5 to 1 million tonne per annum. A final decision on this question is yet to be taken by the Government.

The Madras Harbour can also serve well as a transhipment port particularly in respect of bulk cargo which can be discharged, bagged and stored and later on transhipped to other destinations. The Jawahar Dock (East) which is now being used for export of iron ore and the Jawahar Dock West used for import of foodgrains with transit shed facilities for storage will be available in the course of the next year for such transhipment as the ore handling will be shifted to Bharathi Dock and the food imports are expected to drastically come down. The draft of 35 ft. without limitation of length should prove very attractive for locating such a facility. Similarly in the case of pig iron the Port can offer use of 13-ton 4 rope cranes now being used for Iron ore loading to handle tubs loaded with pig iron. The tubs an be mounted on low bed trailers and loaded straightaway at the plots and moved by the trailers to the wharf. The 13-ton cranes can pick up the trays, each with an approximate load of 10-tonnes and tilt them into ship's holds for fast discharge. An arrangement like this will be able to load about 5,000 tonnes per day which should prove attractive for exporting pig iron through Madras Harbour.

The Port has already been handling LASH barges for sometime. Recently the Madras Port started handling container vessels which are regularly visiting this Port and exchanging containers. The Port is proposing to improve the container handling facilities by acquiring a tyre mounted heavy duty mobile crane for fast loading of containers. Heavy duty fork lift trucks are also proposed to be acquired to remove the empty containers from the wharves.

Even though Madras Port at present has no plans to put up a full-fledged container terminal, there is every possibility that such a facility will be necessary in future. The growth of industries, particularly in the automobile and ancilliary field, which have a growing export market, cycle industry, textiles including garments, textile machinery, leather goods, etc., will require facilities for fast delivery to consumers and they will increasingly move to containers. Exports of other items such as tobacco, mica, coffee, bone and bone meals, fish and fish products in refrigerated containers, etc., can also be containerised. Therefore there is good prospect of increase in container growth. Madras Port has the necessary potential to put up a full-fledged container terminal.

FACILITIES FOR HEAVY LIFTS

The 50-ton travelling wharf crane with its large radius 90 ft. and the 120-ton floating crane with a reach of 60 ft. for 120-tonnes and 120 ft. for a load of 20 tonnes ensures that the Port can handle very heavy packages for export. Recently, a number of integral coaches and locomotives were handled by the Trust's floating crane for export. The export market has been steadily increasing and the Port is always ready to create the necessary facilities to accelerate the export growth.

THE OIL BERTH AND ORE BERTH AT MADRAS PORT

There is ample warehousing accommodation in the port area to deal with import and export of cargo. With the improvements effected, 22 ships at a time can be accommodated in the harbour in the nineteen alongside berths and three moorings. The port had handled up till now about 7 million tonnes of cargo annually.

Madras Port, ever alive to the felt future needs has evolved a flexible master plan for development, based on technical and physical considerations. The outcome of such a master plan is the concept of the outer harbour with deeper draft for bulk carriers. The deep waterfronts have been planned for intensive use and about 8 million tonnes out of a total of 11 million tonnes of future traffic will go through the outer harbour itself. After the full commissioning of the outer harbour, berths in the main harbour in the Jawahar Dock are likely to be released for more general cargo traffic of imports and exports.

The new outer dock named "Bharathi Dock" has been formed by construction of two breakwaters on the northern and the eastern sides. The north groyne of the main basin is the southern side of the new dock and on the west a reclamation wall has been built up. The basin so formed is dredged to the required depths and the dredged materials are used in reclaiming an area of 41 hectares for the shore facilities of the berths. The approach to the dock is through a demarcated channel, which will serve both the main harbour and the outer harbour. The Oil berth in the Bharathi Dock has been constructed on the lee of the eastern breakwater and consists of four berthing dolphins, four mooring dolphins and a jetty head. The jetty head houses the marine loading arms and the terminal building. The pipelines are carried over a piled trestle.

The iron ore berth has been located in the north-west side of the outer dock. The main ore berth is 222 metres long and the length between the extreme dolphins is 366 metres. The ore handling facility is broadly divided into two systems *viz.*, Receiving and Shipping. The Receiving System consists of necessary railway lines, rotary wagon dumpers, conveyors, stackers and storage area. The Shipping system consists of Bucket Wheel Reclaimers, Conveyors and Shiploaders. The facility has been designed to handle 8 million tonnes a year at the rated loading capacity of 800 tonnes an hour. The ore facility is expected to be commissioned early in 1977.

The Ore Berth now designed and built to handle 5 million tonnes annually will be capable of handling even 11 million tonnes annually when it is commissioned. It is anticipated that the export of ore from the port will touch 8 million tonnes per annum in future. For utilising the maximum capacity of the berth, it will be necessary to invest in additional railway facilities for movement from the mine head to the port. The cost this will entail will be more than offset by the reduction in freight rates by the use of the deeper carriers and the full utilisation of the facilities.

In the Outer Dock, there is potential for construction of three or four berths with adequate shore area. The berths can be deep drafted. The development of these berths will depend on the cargo to be handled. Any type of handling facility can be convieniently developed in these berths.

Thiru S. GANESAN,
Chief Mechanical Engineer, M.P.T.

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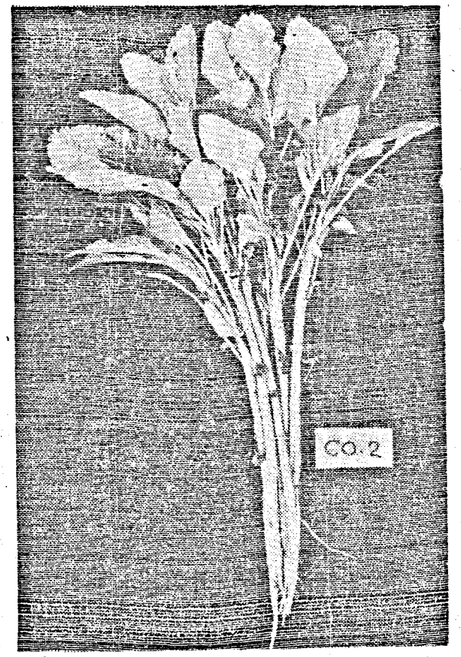
THE LEAFY WAY TO HEALTH



Leafy vegetables have a high protective food value. They are rich in calcium, iron and other minerals and in Vitamin A and C. Growing them is also very easy. They become available in a shorter time.

A variety of leafy vegetables are grown in our country. Here are a few important ones which are cultivated during the winter.

SPINACH

Spinach is the most common and popular leafy vegetable and is available almost throughout the year. It can be grown in any kind of soil, but a well-drained sandy loam soil would give best results.

Spinach can be sown almost throughout the year, but the best sowing time in the plains is from June to November. This allows you to get a continuous supply of spinach leaves.

A number of spinach varieties are available. The varieties All Green and Virginia Savoy released by IARI, New Delhi are better.

You need 30 to 40 kg seed to sow in a hectare. Sow by broadcasting the seed. You can also sow in lines which would help you to grow some other crop side by side.

Apply 10-12 cartloads of well-rotton farm yard manure at the time of soil preparation. Also apply 105 to 125 kg nitrogen per hectare for increased yield. The seeds germinate better if the field has enough moisture. Irrigate the field at 10 day intervals.

You can start the first cutting of leaves after 3-4 weeks of sowing. Subsequent cutting can be taken every 15-20 days. In all 4 to 6 cuttings can be taken. If the plants are left after the 4th or 5th cutting the seed tops will come out and if allowed to grow, will produce seeds.

FENUGREEK

It is another important leafy vegetable grown during winter. The seed of this crop is used for culinary purpose. It can be grown in every type of soil but loam and well drained soil are better suited.

Mix 40 quintals of farmyard manure in the soil at the time of land preparation. Also give superphosphate at the rate of 180 kg per hectare to take a good yield. Top dressing with nitrogenous fertilizer after the first cutting induces very good leaf growth.

There are two varieties of fenugreek : Deshi methi which is sown from September to March for green leaves ; and Kasuri methi which is sown in the middle of December. You require 27 to 35 kg for Deshi methi and 22 to 27 kg for kasuri methi to sow in a hectare.

The seed is broadcast which takes about 3 days to sprout. Irrigate the field immediately after the seed have germinated. Give irrigation every 10 to 12 days. ***

WORK OF INDIAN CENTRAL COCONUT COMMITTEE

The Second World War created conditions which meant higher prices for coconut. But the Indian coconut industry could not cope up with the situation. It was in these circumstances that the Indian Central Coconut Committee was set up in 1945 to take measures for the improvement and development of coconut to serve the entire need of the country.

In 1947, to intensify research and development of coconut, the Indian Central Coconut Committee took over the Coconut Research Station, Kasaragod and reorganised research under four disciplines, namely agronomy, botany, cytogenetics and analytical chemistry. Almost at the same time the menace of the root (wilt) disease in the State of Travancore was noticed to assume serious proportions. With financial assistance from the ICAR, the State Department of Agriculture of the erstwhile Travancore State set up a pathological laboratory at Quilon. To intensify research on the disease and pests, the Central Coconut Research Station, Kayangulam was set up in 1948.

Fundamental Research

Introduction and evaluation of the germplasm, from within and outside India, exploitation of hybrid vigour in coconut, selection of mother palms, seed nuts and seedlings in the nurseries, correlations between morphological characters and yield, spacing, depth of planting, tillage and manuring were some of the important aspects studied.

Crop Improvement

Crop improvement work in coconut can be deemed to have started in the early thirties of this century when a dozen types from countries like New Guinea, Cochin China, Java, Siam the Philippines, Fiji, Strait Settlements, etc., were introduced and planted at the Coconut Research Station, Pilicode, for evaluation and selection. Progenies of these were later planted in 1940, at the Coconut Research Station, Kasaragod. Among these early introductions 'New Guinea,' 'Cochin China', 'Java', 'Siam' and 'Laccadives' appeared to be promising. Promising types were also introduced from the important coconut-growing areas of India. Large scale introductions were started at Kasaragod during 1955 and at present the germplasm bank has an assemblage of 64 exotic collections from 26 countries and 32 indigenous varieties of coconut, the largest collection of coconut in the whole world.

The indigenous as well as the exotic collections were also screened for important economic characters. Another important genetic investigation initiated during this period was the evaluation of characters influencing the productivity of coconut. The results confirmed the utility of selection of high-yielding mother palms.

The First Hybrid

The first hybrid was produced by crossing local West Coast Tall with the Chowghat Dwarf Green and the hybrids were planted at Nileshwar in 1934 for evaluation. The TXD hybrids planted in 1934 at Coconut Research Station, Nileshwar, which was the earliest plantation of hybrids in the Indian Union continued to give very satisfactory performance. Genetic investigation and breeding work were further intensified since 1947.

Yieldings of coconut have ever been on the increase since the evaluation of the hybrids and now large scale production programmes are in progress to meet the increasing demand.

Agronomy

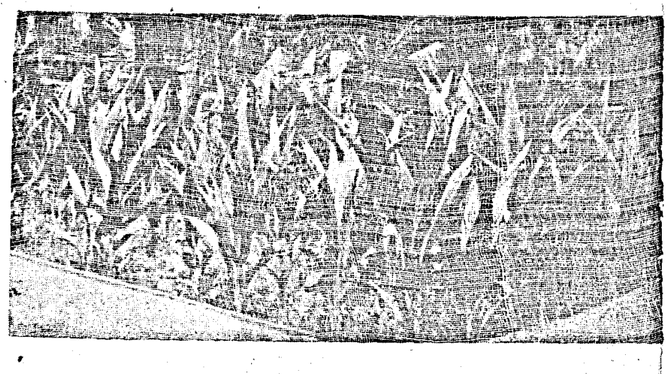
Various experiments were conducted on the different agronomic practices best suited for coconut. These agronomic trials conducted in the earlier years were aimed at determining the optimum manurial and cultural practices. The sources of nutrients were mostly of organic origin like cattle manure, green manure, groundnut cake, ash, and bonemeal. Effect of inter and mixed cropping and summer irrigation was not studied. These field trials provided sufficient indications on the agronomic requirements of coconut base on which later field experiments laid out on sound lines since 1950's. It has been possible to standardise the cultural and mastrial requirements of coconut from these later experiments. Problems and prospects of inter and mixed cropping, with special emphasis on small holdings, have been studied in greater detail.

In the fifties, diseases and pests of coconut palm where the major areas of thrust in research at the Central Coconut Research Station, Kayangulam. Control shedules were worked out for the major pests and diseases other than root (wilt), which went a long way in increasing production. Research stations were set up in different coconut growing tracts of the country to investigate the local problems.

A serious 'wilt' disease of coconut was reported from the coastal areas of Thanjavur and other southern districts of Tamil Nadu during early fifties. The object of the Pathology Laboratory at Muthupet was to investigate into the casual organisms and other factors responsible for the wilt disease which occurs in the coastal and in some interior districts of the State and to devise suitable control measures for the same. In April 1966, the Indian Council of Agricultural Research took over the Central Coconut Research Stations at Kayangulam and Kasaragod.

—By Thiru M. C. NAMBIAR,

Project Co-ordinator (Spices & Cashew) Central Plantation Crops Research Institute, Kasaragod.



ROMANCE OF INDIA'S RAILWAY SYSTEM

The Rail Transport Museum, Chanakyapuri, New Delhi through both out-door and in-door exhibits traces the romance of India's Railway System over the last 125 years.

When it is remembered that the whole Indian Railway System has been built up gradually by several different companies each planning for the peculiarities of its own terrain, and the peculiar type of passenger traffic offered, it should not come as a surprise that we in India have an extraordinarily diverse collection of railway equipment which should not only be of interest to lay railway users but experts from all over the world. In this unique collection one can see the world's oldest working locomotive as well as the world's heaviest locomotive. In carriages also India's Railway System had to cater to the prince as well as the plebian. The saloons built for the travel of many of the Indian princes are on display here. The saloon built in 1875 for the use of Prince of Wales (later King Edward VII) is also on display here.

An elegant octagonal building with folded plate roof of a unique design, covering about 10,000 sq. ft. area, comprises the indoor galleries of this Rail Transport Museum. In it are displayed small exhibits working and dummy models, coat of arms, records, photographs, historical documents and charts depicting the development and growth of Railways in India over the last 125 years. All exhibits have been classified in six galleries, depicting the development of locomotive power, the refinement of signalling system and telecommunication and modernisation over the years.

The Rail Transport Museum, the first of its kind in the country, has been laid out in a nice landscape along with garden umbrellas. In the open space of the Museum, are exhibited, 43 vintage locomotives together with 17 quaint carriages and saloons on tracks of various gauges. There are in fact six gauges, four of them accommodated on just four rails. The Patiala State Monorail Trainway makes this museum the first in the world to have a train running with one wheel on one rail and the other on road. Some of the other star attractions are the oldest working locomotive in the world, the heaviest locomotive being used in the world, and the saloons once used by the prince of Wales and the Maharaja of Mysore.

SOME FACTS ABOUT OUR RAILWAYS

The first railway to run in India was between Bombay and Thana, a distance of 21 miles, on 16th April, 1853.

One of the companies which were formed in England for running a railway service in India *viz.*, Great Indian Peninsular Railway Company had the distinction of having as one of its directors, George Stephenson the locomotive inventor.

Train service from Howrah to Hooghly was opened on 15th August 1854 ; long before this service was begun 3,000 applications were received from those who wanted to ride in the first train.

In South India, the first train service was opened on 1st July, 1856 between Vyasarpadi and Wallajah Road (Arcot) a distance of 63 miles. By the year 1873 India could boast of 5,872 miles of railway.

Deshi methi is ready for harvest after three weeks of sowing. The upper leaves are retained and the plants are allowed to grow further. Their tops are clipped periodically till flowering. Kasuri methi gives several cuttings during the season. Its leaves can be dried in shade and used throughout the year.

CORIANDER

The fine lacerated leaves of coriander are highly aromatic. The leaves are used for making chutnies and flavouring other vegetarian and non-vegetarian preparations. The seeds are used as curry powder.

Coriander can grow on a wide range of soils which are rich in organic manure and properly drained. Apply about 15 to 20 cartloads of farmyard manure at the time of field preparation. The seed canbe sown from August-September till December.

Before sowing trample the seeds into two halves. Soak them in water for a day or two. Keep them moist overnight before sowing. This process hastens the seed germination which takes about 10 days.

You can take several cuttings of the leaves and stems upto the flowering stage. The crop is ready for harvesting within a month of sowing.

MUSTARD

Mustard is primarily an oil-seed crop, but it is commonly used as a leafy vegetable during the winter. The leaves of the plant in the early stages and the young flowering tops in the main season are made use of as greens. Almost all the varieties of mustard can be used as green leafy vegetables.

Mustard can grow on any type of soil. Well and proper manuring ensures quick growth and palatable leaves and seed stalks. Sowing is done generally by broadcasting the seed. About 7 kilos of seed would suffice for a hectare.

The seed germinates very quickly and the leaves can be harvested after about a month. It is better to harvest the leaves with care so that enough leaves are left on the plants, otherwise the flowering tops will become thin and fibrous. The seed tops appears in 30 to 35 days. Harvest them before the flowering buds show signs of opening.

Pole Bean is Easy to Grow

Pole bean is a poor man's vegetable for getting proteins, vitamins and minerals at cheap cost. A single creeper of this bean can supply enough green pods for the family. The dried seed can also be used as vegetable.

Pole bean is easy to grow. You can grow it in your backyard, on the field bunds and also in the field with other crops.

This is a self-pollinated crop and a number of varieties are available throughout the country, in the plains and hills as well. Some are good for seeds as their pods are not fleshy, and some are good for flesh pods.

Baghanakhi, White Bean, Black Bean, Altapati, Ghia Sem, Godi Sem, Pata Sem, Ganikashari and Todi Sem are some of the local varieties. Most of these can be classified according to the pod colour (green white and red) and size (flat, narrow, roundish and long).

Some of the improved varieties are : J.D.L. 17 (red), J.D.L. 37 (light purple), J.D.L. 77 (creamy white) and Kalyanpur No. 1 (light purple). All of them have broad and curved pods. The variety Rajani with straight pods, and Kalyanpur No. 2 with broad and curved pods have shown promising results.

Pole bean is propagated by seed. Select plumpy and healthy seed for planting in the prepared bed directly. Sow the seed from June to October in small pits 30 cm wide and 20 cm deep at a spacing of 90 to 120 cm either way.

To prepare the seed bed mix with the pit-soil 5 kg well decomposed compost or farm yard manure, one kg weed ash and 250 gm superphosphate and put the whole mixture back into the pit.

To plant one hectare of land you will need 12 to 15 kg of seed treated with Agrosan or Cerasan at the rate of 100 gm of r every 50 kg of seed.

Sow two to three seeds in the pit 5 cm deep.

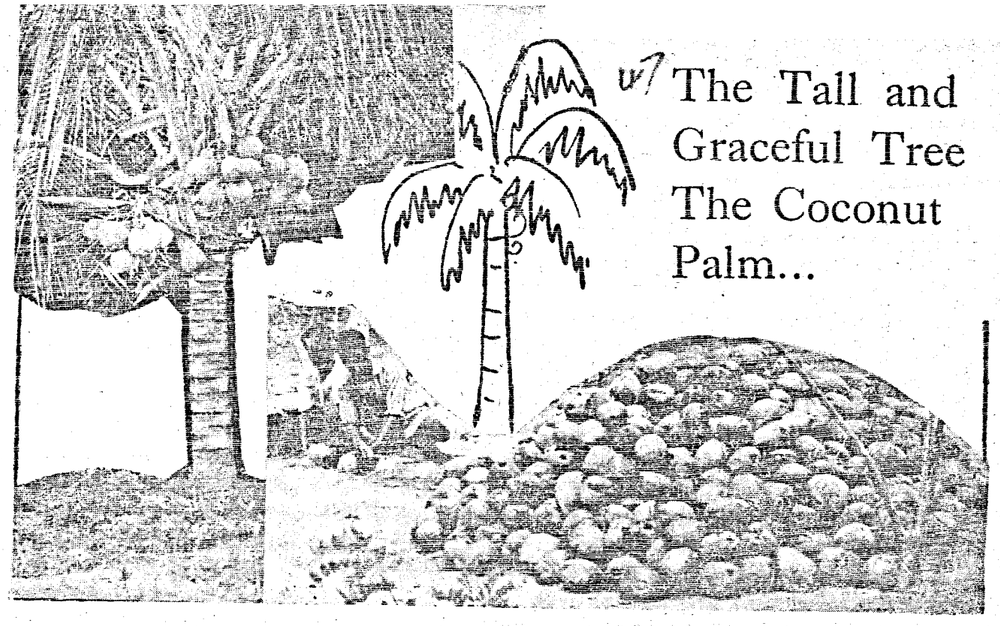
Green tender pods will be ready for plucking after 2.5 to 3 months of planting. Heavy fruiting generally takes place during the winter months. You can take 50 to 80 quintals of green pods from a hectare.

Avoid water logging. The creeper grows and produces well when there is low moisture level in the soil. Drain off the excess rain water from the field.

Allow the creeper to grow over supports or over the wall or house tops. Do not let it trail over the ground. Use branches of trees or thin branches for spreading the vine over them.

Pole bean is generally attacked by aphids which affect the plant growth, the flowers and the pods. As soon as you notice the insect, spray one part nicotine sulphate (40%) in 100 parts of water. Spray Malathion at 0.06 to 0.08% at one litre per hectare just before flowering and repeat it one month later.

Powdery mildew also attacks the crop. In the powdery mildew infested crop the foliage appears as if it is dusted with white powder. To check this disease dust sulphur over the foliage.



The Tall and Graceful Tree The Coconut Palm...

A TREE OF MANY USES, IS THE SUBJECT OF RESEARCH FOR 60 YEARS

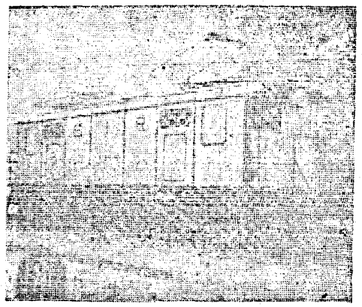
The coconut palm is one of the most important tree crops of the world. It is the most beautiful among the palms with its slender but strong tall ringed trunk, adorned at the top by a graceful crown of giant featherloke leaves. The coconut palm yields more products of use to mankind than any other tree. Every part of the tree finds a variety of uses to mankind. In spite of its varied uses and economic importance, scientific research on the crop was initiated only from the year 1916.

The Beginning of Research

India was the first to take up systematic research on coconut. Research work was started at Kasaragod and Nileshwar, by the then Madras Government in 1916,. The object of starting these Stations was to study in detail, cultural and other aspects of coconut cultivation in different types of soil. To obtain the representative soil types on which coconut palms are generally grown on the West Coast, three separate blocks (Nileshwari (Pilicode), Nileshwar II and Nileshwar III) of vacant lands near Nileshwar, (Cannanore District) in Kerala were acquired. For preliminary investigations and immediate experimentation, a block of existing garden was also acquired at Kasaragod. The gravelly laterite types of soil of the Pilicode Station is usually met with in the high lands of the West Coast. Nileshwar II and Kasaragod Stations have deep red loamy soils. The largest area under coconut in the West Coast has this type of soil. The Nileshwar III Station was mainly started for investigating the feasibility of raising coconut in the littoral sand of which there is an extensive area in the coastal belt. The object has subsequently been considerably enlarged to include (1) botanical study of the palm including morphological characters and inherent and environmental variations, (2) manurial requirements under local conditions with ultimate aim of finding out the most profitable dose of Common and easily available manures, (3) importance of proper cultivation of the interspaces in a coconut garden, (4) breeding work to evolve and distribute superior planting material which would ensure high yields, and (5) miscellaneous trials for the benefit of the coconut growers in particular and the agriculturists of the tract in general.

Ginger is the most remunerative intercrop. However, it is highly susceptible to the disease—'Soft Rot', which can devastate the entire crop. The incidence is more than the crop raised consecutively in the same area. Hence ginger is not included in the farm plan models. Sweet potato can be followed by a pulse crop like horse gram, black gram, green gram or cowpea in years when the north-east monsoon rains are favourable this feasibility is not shown in the models.

Some Exhibits In Rail Transport Museum

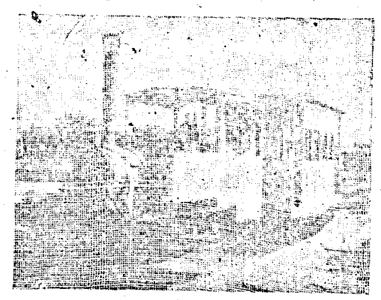


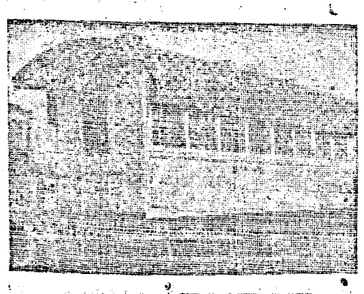
YCGI 21900

YCGI 21900 : When the first section of the Indian metre gauge was electrified in 1930, between Madras and Tambaram, the stock included four interesting electric locomotives. The mechanical parts were built by Hawthorn, Leslie & Co., and the electrical parts by English Electric.

PATIALA LOCOMOTIVE NO. 4

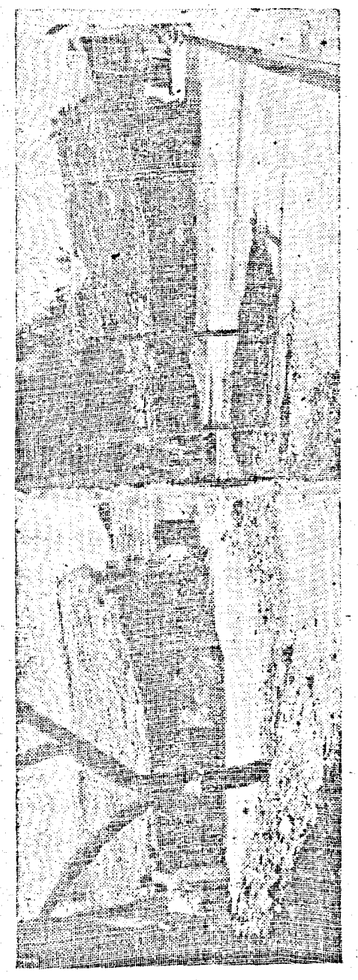
PATIALA LOCOMOTIVE No. 4 : In 1907, the first section of an unusual railway, on the 'Ewing System', was opened in Patiala State. It was called the 'Patiala State Monorail Trainway.' The track was a single rail alongside the road. On this rail ran the load-carrying wheels of the train, while a large single wheel at the end of an outrigger ran on the road to keep the train upright. The first trains were pulled by mules, but in 1909 Orenstein & Koppel of Berlin supplied four unique locomotives for the system. The exhibit is a rarity of great interest to railway engineers.





PRINCE OF WALES' SALOON (RMR 50)

PRINCE OF WALES' SALOON (RMR 50): This coach was built in 1875 for use by the Prince of Wales (later King Edward VII) during his visit to India for the 1876 Durbar. It was built at the Agra Workshops of the Rajputana-Malwa Railway and contains its original fittings and furnishings. It is built on a 4-wheel steel frame and is not fitted with brakes.

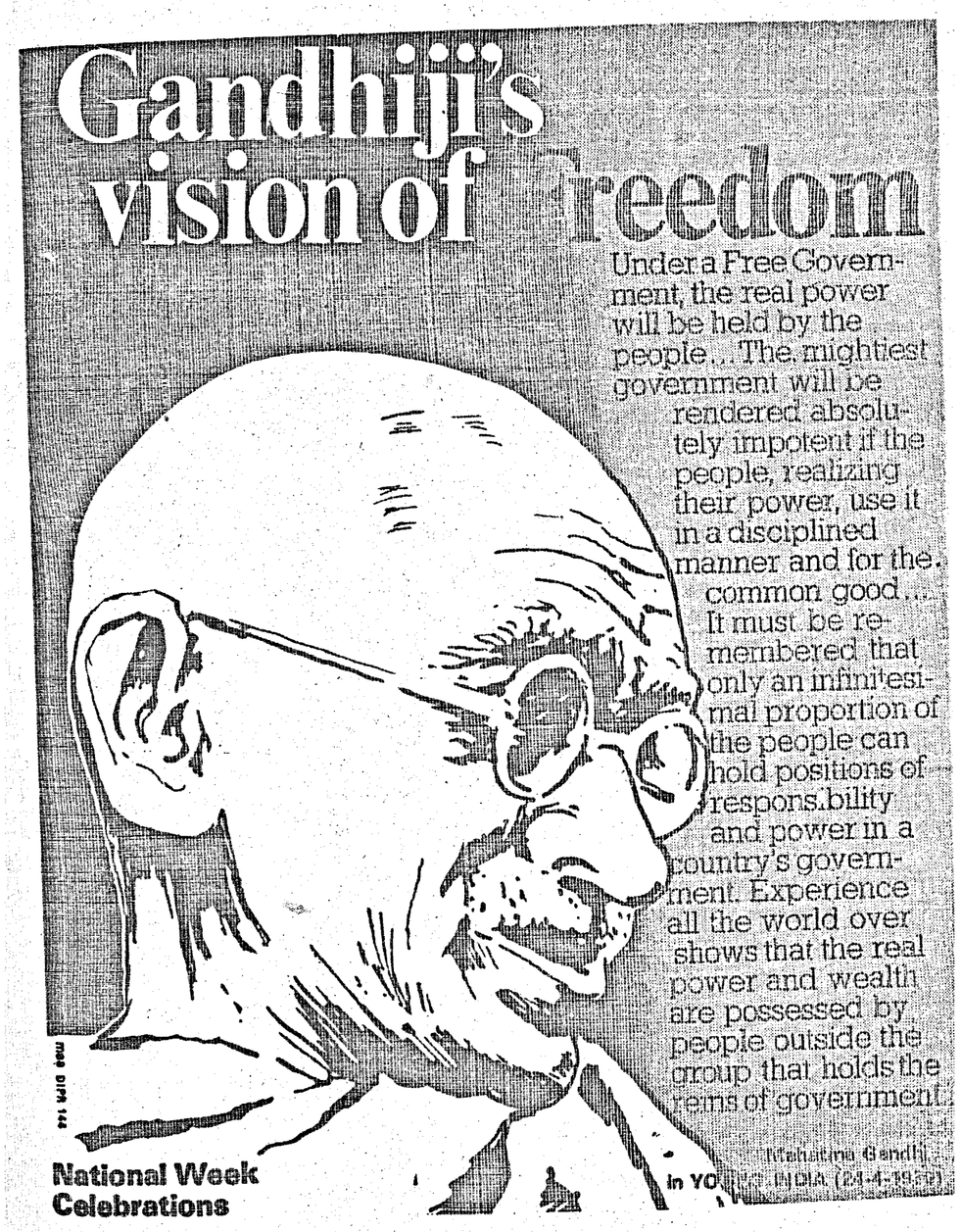


NEGLECTED AREAS OF MUNICIPALITIES

GOVERNMENT STEPS IN WHERE COUNCILLORS DID NOT BOTHER

Rs. 75 LAKHS WORTH SCHEMES PUT THROUGH

An integrated development of backward areas in Municipalities at a cost of Rs. 75 lakhs has been put through during the last financial year. This has been made necessary because it was found that in all Municipalities there are a large number of pockets of backward areas which have been neglected in the past, mostly due to lack of attention by the Municipal Councils. It has been assumed that the people in these areas being not able to contribute enough by way of tax to the Municipalities or to influence the Municipal Councils to get funds diverted to their areas they have remained neglected for long. However after the Municipal Councils have come under the management of appointed Special Officers, instructions have been issued to concentrate on these backward areas in a big way. Municipal officers have identified these areas, drawn up priorities and have taken them for integrated development. This was a time-bound programme taken up for completion by March 1977. This programme aims at providing all the minimum necessary amenities like roads, lights, water supply and public conveniences, in the identified backward areas instead of providing amenities in a sporadic manner.



Sarat Chandra's books had been reprinted several times, assembled into a best-selling collected edition and translated into several languages. Rabindranath acknowledged that in the opinion of many readers, he was the best story-teller, and Romain Rolland acclaimed him as a first-rate novelist.

Tamil Arasu

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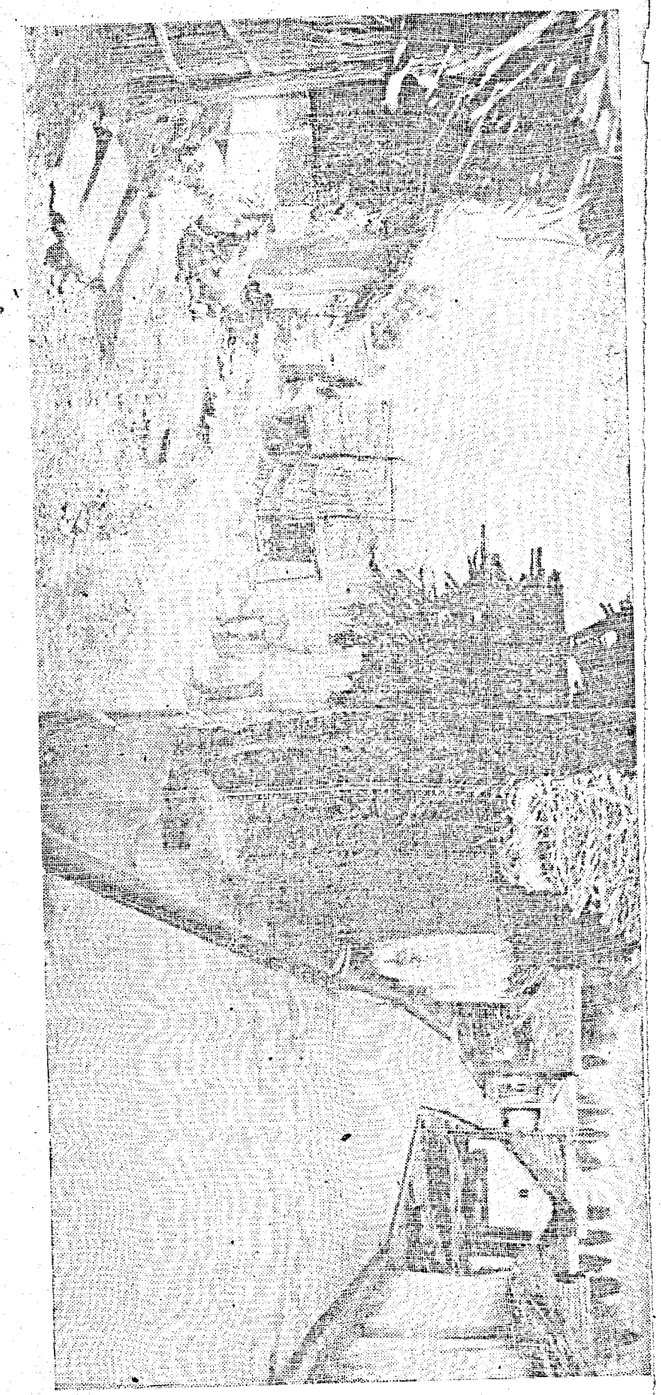
INTEGRATED APPROACH TO PROVISION OF MINIMUM NEEDS IN BACKWARD AERAS OF MUNICIPALITIES CREATES IMPACT

This integrated approach to provision of minimum needs has been applied in 80 Municipalities. The completed works consist of : 1. Providing proper access to these neglected areas, 2. Providing lighting, 3. Roads, 4. Water supply and Drainage facilities. Public conveniences are also constructed. By the end of March, 657 works costing about Rs. 75 lakhs have been completed. Government have decided to assist the Municipalities in the implementation of these projects on 50 per cent grant basis. Salem and Coimbatore Municipalities have already executed such schemes at a cost of Rs.2.5 lakhs each. Municipalities in Tiruchi and Tirunelveli District have not lagged far behind.

In addition to these projects for the development of backward areas taken up by the Municipalities, the Government have sanctioned a sum of Rs. 20 lakhs for the implementation of such schemes through the Tamil Nadu Housing Board in Madurai, Trichy and Coimbatore.



OPP: Sriramapuram Slum of Coimbatore

Previous page TOP:
Same area East entrance.

Previous page LEFT:
Damu Nagar North entrance.

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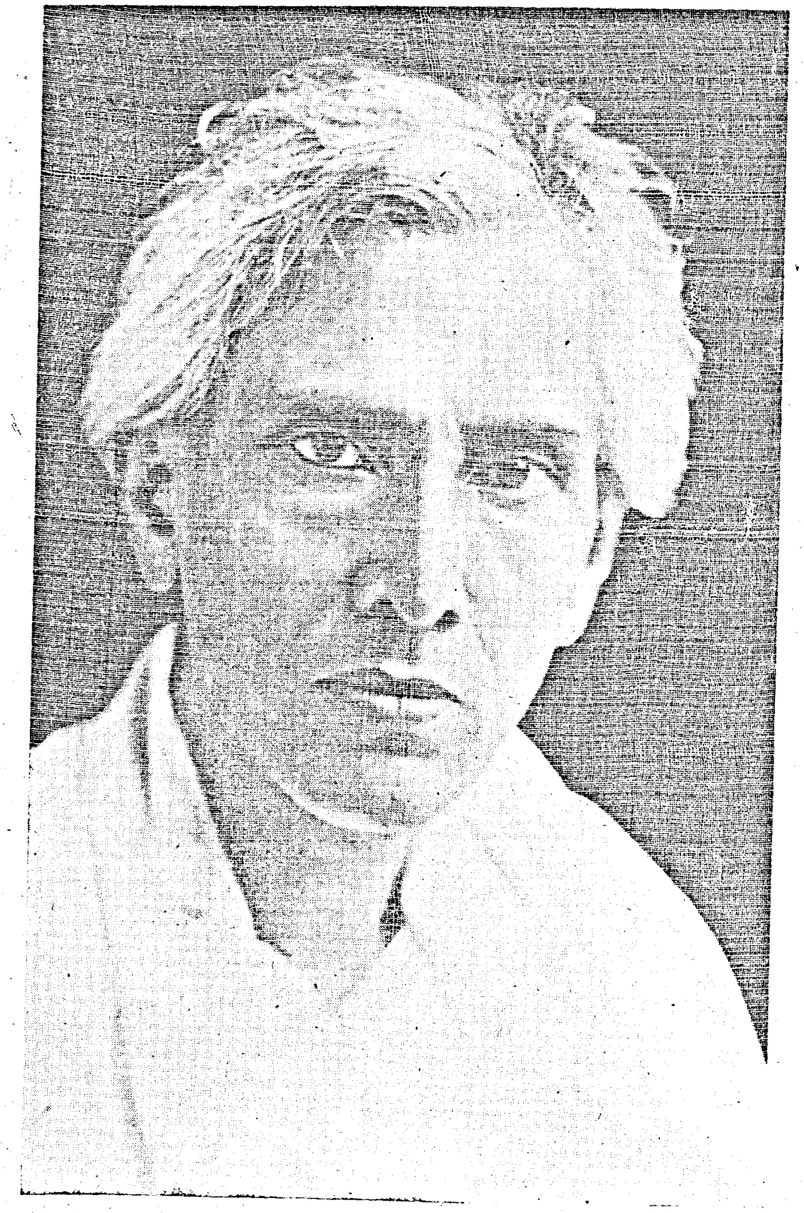


SARAT CHANDRA

SARAT CHANDRA AND THE FREEDOM MOVEMENT

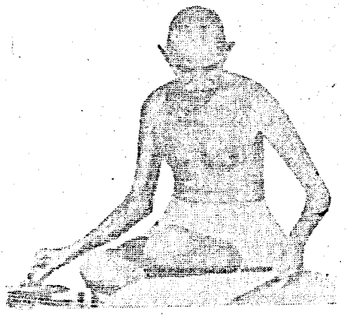
Sarat Chandra Chattopadhyay is one of the most beloved writers of Bengal. His great novels portrayed in a rich but simple and absorbing style, the constant drama of every-day society — the play of emotions, joy and sorrow, love and hatred, greed and sacrifice — so familiar to common man and yet so lofty and noble in its perception. His numerous works have been translated into Hindi and other Indian languages and these have also proved to be equally popular.

Khagen De Sarkar, a veteran journalist, however, deals with a little known aspect of SaratChandra's life and personality his role in the freedom movement of the country.

On all accounts, Saratchandra Chattopadhyay (1876-1938) had in himself the contradiction between his art and politics. He could not have this contradiction in the same manner, as much later, Andre Malraux, Picasso or Hemingway too had in their own way. And all of them had endured their Politics along with their art.

For more than 10 years, Saratchandra, had been President of Howrah District Congress Committee and seen various twists and turns of politics that happen everywhere. At last he discovered the contradiction between the litterateur and the politician and on December 17, 1936, he wrote to the Secretary of Howrah District Congress, Mr. Harendranath Ghosh, an ardent follower of Saratchandra, while submitting his letter of resignation : "In tendering my resignation I have no ill-will against anyone and least of all against you, the same affection you will always find in me. Or perhaps, I should not ever have come into politics. It is so very alien to my vocation and so often becomes painful to my inner self. Strife, dissension and disputes inherent in politics were not meant for me ; they always destroy that peace of mind I so essentially require . . . ."

But having been a nationalist dedicated not only to his art but also to the freedom movement in the late 20s and the 30s, Saratchandra could not escape sharing the political turn of events in those years. He had been an ardent follower of Mahatma Gandhi's mass movement that first took shape in 1919. At the same time, he had sympathy with the revolutionaries in Bengal



and elsewhere in India, who believed in the use of force for winning India's freedom from the British Raj.

In Bengal both the phases of freedom struggle had been so interwoven that it was natural for Saratchandra to support both of them. But above all, he had been with the movement of Mahatma Gandhi, Chittaranjan Das and had also been closely associated with Subhas Chandra Bose.

A Bengali litterateur of repute writing under the name of Indiramitra recorded that once a writer remarked to Saratchandra that it was no business of a litterateur to leave his pen and join politics. He replied : " For some time, I had taken up 'charkha' in place of my pen."

Saratchandra had written on June 27, 1921, two years after Mahatma Gandhi had started his non-violent movement in India : " Now I have no moment to spare If the work (aim) of the Congress could be achieved, I would have time." He recalled that he had only been a volunteer of Mahatma Gandhi's movement two years ago. He had also recalled that, at that time, some half a dozen of his colleagues had fallen before gun-fire by the British police, but he had not been hurt. Saratchandra wrote " I was surprised by I had not been hurt. Perhaps it was necessary."

He had been a close and unquestioning follower of Chittaranjan Das. There are on record charming conversations between the two on

A close and unquestioning follower of Chitta Ranjan Das

politics, food, manners and all that. Saratchandra used to draft a number of statements issued by Deshabandhu. This only shows how the litterateur utilised his literary talent for a political purpose. He also stood by him when, after the GayaCongress of 1922, Deshabandhu and Motilal Nehru formed the Congress Khilafat Swarajya Party, which on January 29, 1923, came to be termed as the Swarajya Party. At the Barisal Conference of the Bengal Provincial Congress Party, Saratchandra refused to abandon Deshabandhu at a critical time in the latter's political career.

It is interesting to note that Saratchandra had never been after the loaves and fishes of political offices. Once he had been asked by Deshabandhu to stand for Council election from Howrah. He refused saying he had not sacrificed much to deserve to be elected and that "I would NOT like to make capital of my literary achievement." That was a little before June 16, 1925, when Deshabandhu breathed his last at Darjeeling.

In the monthly "Basumati" of Calcutta, Saratchandra then wrote in Bengali : "It seems that the biggest curse in a dependent country is that people had to fight more against their own men than foreigners. When the necessity for this struggle ends, the shackles (of bondage) drop off on their own. But before this, Deshabaandhu hadpassed away."

These observations do contain a message of political sagacity that is true of many of the countries recently freed from colonial subordination in Asia and Africa. His estimation of Deshabandhu also revealed his own political faith. Saratchandra had stated in that article in Basumati that Deshabandhu had been a real and sympathetic friend of the educated, the uneducated, the downtrodden, the fallen, the rich and the poor and particularly of the weaker classes, people like the **Namasudras.**

On this article of Saratchandra, Subhas Chandra Bose had written from Mandalay (Burma) prison in 1924 that he had liked it very much and that by "your insight into human character, your close acquaintanceand relations with Deshabandhu and your ability to discover art and truth by extraordinary interpretation of small events — you should have been able to create a new beauty from these elements."

Saratchandra's "Pather Dabi" (Claim of the Road) is an outstanding novel on Bengal's revolutionary movement that believed in the use of force. The characters in that novel speak of the writer's sympathy. Thiru Hemchandra Ghosh a revolutionary who had been its President, went on record to say that he used to relate to Saratchandra many anecdotes about the Bengali revolutionaries (Ghosh had been one of them) and asked him to portray one of them in his novels.

On the political sphere, Saratchandra had some difference of opinion with Rabindranath Tagore, particularly on the latter's non-support of Gandhiji's "Charkha" and Khadi movement. But neither of them had lost respect for each other. To Sarat chandra, Tagore had always been "Gurdev," and Tagore had regarded him highly as a Bengali litterateur and one of the founders of modern Bengali literature.

"I can leave anybody except Subhas Chandra"

Saratchandra had been very close to Subhas Chandra Bose later on. The latter had been released from Mandalay prison in May, 1927. Saratchandra had then stated: "I can leave anybody, except Subhas Chandra."

"Pather Dabi," was published on August 31, 1926. Soon it was proscribed. Saratchandra then wrote to Tagore that the banning should be protested. Tagore did not disagree but argued in a different way from Saratchandra. This gave some ground for misunderstanding between the two, as it happens in politics. But both the sides did appreciate each other's position. Saratchandra had told Tagore, "the British had the right to ban this book, Indians have the right to protest."

But after all, Saratchandra, perhaps Tagore too, had reconciled their contradiction between art and politics.

WORLD DAY OF THE DISABLED

Adviser to the Governor of Tamil Nadu Thiru Karthikeyan presenting an award of merit to a handicapped employee.

The World Day of the Disabled was celebrated in Madras City and all the District Headquarters during the period from February, 1977 to April, 1977. The celebrations were organised under the auspices of the Department of Employment and Training, Government of Tamil Nadu. Almost all the institutions for Physically Handicapped participated in the above celebrations.

Sports Meet :

The celebrations at Madras City was started with the Sports Meet for the Handicapped Children which was held at Rajaratnam Stadium.

Handicapped children, numbering about 1,000 took part in the sports meet. The sports meet was inaugurated by Thiru T. V. Antony, I.A.S., the then Commissioner and Secretary to Government, Labour and Employment Department. He took the salute of a colourful march past by the handicapped children. There were about 68 items of sports including sack race, music competition, fancy dress competition etc. Those who secured first place in terms of sports were each given a certificate of merit, a cash prize of Rs. 5/- and a pant cloth donated by M/s. Madura Coats Private Limited, Madras. Winners of 2nd place in various teams of sports were each given certificate of merit, cash prize of Rs. 3/- and a tin of ovaltine donated by M/s. Jagajit Industries Private Limited, Madras. Those who came in the 3rd place in the sports were each given a cash prize of Rs. 2/-. About 210 handicapped children were thus given prizes on the occasion of the sports meet. Certificates and prizes were given by then Commissioner and Secretary to Government, Labour and Employment Department and other V.I.Ps. who were present on the occasion. Free refreshments were served to all the handicapped children through a few social service organisations and philonthropists. Besides free refreshments, The Tamil Nadu Dairy Development Corporation supplied 1,000 bottles of flavoured milk to all the handicapped children. 1,000 bottles of cool drinks (LIMCA) were supplied to all the handicapped children by M/s. Chennai Bottling Company Private Limited. Biscuits donated by M/s. Brittania Biscuit Company were also supplied to the handicapped participants.

A Rolling Shield to the institution for each category of the handicapped *viz.*, Blind, Deaf, Orthopaedically handicapped, Leprosy cured and Mentally retarded which has secured maximum number of points in all the items of sports was also awarded. Besides, a Championship Shield donated by the Lions Club of Madras-Pudur was also awarded to the institution which was adjudged as the best institution from among

all the institutions for handicapped and the shield was won by Balavihar —the School for the Mentally Retarded.

Exhibition :

As part of the World Day of the Disabled, an Exhibition was organised at Rajaji Hall, Government Estate, Madras-2 for two days *i.e.*, on 9th and 10th of April, 1977. Various kinds of products manufactured by the handicapped children, equipments, materials, instruments, etc. that are used for teaching the handicapped, artificial limbs and appliances that are used by the handicapped children, various other exhibits revealing the skill of handicapped in various fields of activity were all displayed at the exhibition. The exhibition was declared open by Smt. Sarojini Varadappan, Chairman, Central Social Welfare Board, Government of India.

In addition to the institutions for the handicapped, the Department of Employment and Training, the Department of Social Welfare and the Vocational Rehabilitation Centre for the Handicapped, Guindy, also put up stalls at the exhibition.

Public Meetings and Cultural Programme :

The oustanding and important items of the programme of this year's celebrations was a "Public Meeting" presided over by Thiru V. Karthikeyan, I.A.S., Adviser to the Governor of Tamil Nadu. The Director of Employment and Training delivered the welcome address. The Adviser Thiru V. Karthikeyan, in his key note address, stressed the need for the uplift of the weaker sections of the Society, especially, the handicapped and he also appealed to the industrialists and to the public to extend their wholehearted co-operation in the matter of rehabilitation of the handicapped.

State Awards instituted by the Government of Tamil Nadu to the outstanding employers of the handicapped who have given employment to the five categories of handicapped *viz.*, Blind, Deaf, Orthopaedically handicapped, Leprosy cured and Mentally retarded and State Awards to the most efficient physically handicapped employees in the above five categories were presented by the Adviser to the winners of the Awards. Besides the above awards, the State Award for the best teacher, the State Award for the best institution for the physically handicapped and a rolling shield to the employer who has given employment to the largest number of handicapped persons were also given by the Adviser. Similarly, Nimbkar Awards were presented to the outstanding employers of the handicapped in the five categories of the handicapped and to the most efficient handicapped employees in the five categories of the handicapped.

On the eve of the World Day of the Disabled, a special drive was undertaken by the Department of Employment and Training with a view to place as many physically handicapped people in employment as possible and as a result 136 physically handicapped people were placed in employment during the months of February and March, 1977 by various Employment Exchanges of the State. Besides, efforts were taken and arrangements were made by the Department of Employment and Training through the State Bank of India, Indian Overseas Bank and Indian Bank for issue of loan to physically handicapped people, in order to make them self-employed by starting small industries etc. As a result of these efforts, 25 physically handicapped people were issued with cheques by the Adviser as self-employment loan for making them self-employed.

The Public Meeting was followed by a Cultural Programme of handicapped children of various institutions in and around Madras City. The Cultural Programme included drama, music, dance, magic show etc., by the handicapped children. These variety entertainments actually revealed to the public the latent histrionic talents of the handicapped

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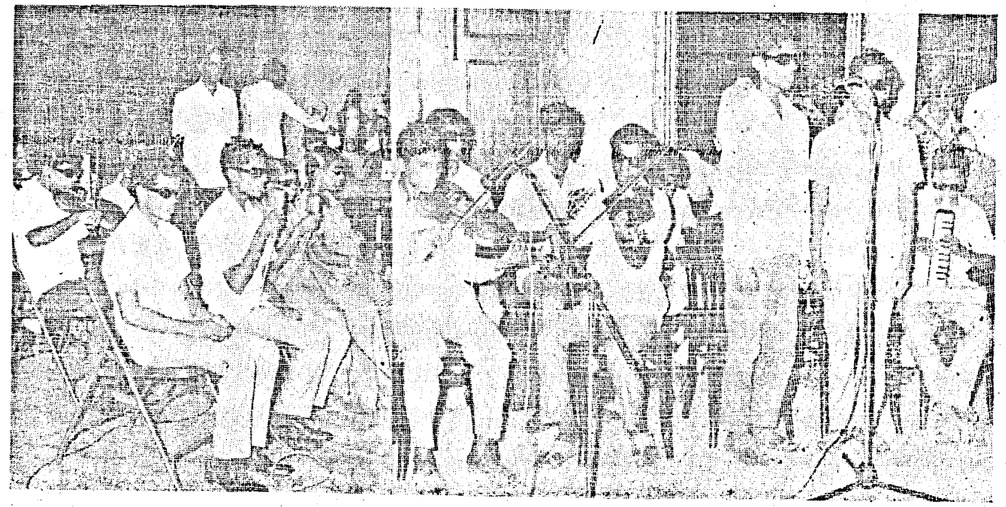

WORLD DAY OF THE DISABLED

Adviser to the Governor of Tamil Nadu Thiru Karthikeyan presenting an award of merit to a handicapped employee.

The World Day of the Disabled was celebrated in Madras City and all the District Headquarters during the period from February, 1977 to April, 1977. The celebrations were organised under the auspices of the Department of Employment and Training, Government of Tamil Nadu. Almost all the institutions for Physically Handicapped participated in the above celebrations.

Sports Meet :

The celebrations at Madras City was started with the Sports Meet for the Handicapped Children which was held at Rajaratnam Stadium.

Handicapped children, numbering about 1,000 took part in the sports meet. The sports meet was inaugurated by Thiru T. V. Antony, I.A.S., the then Commissioner and Secretary to Government, Labour and Employment Department. He took the salute of a colourful march past by the handicapped children. There were about 68 items of sports including sack race, music competition, fancy dress competition etc. Those who secured first place in terms of sports were each given a certificate of merit, a cash prize of Rs. 5/- and a pant cloth donated by M/s. Madura Coats Private Limited, Madras. Winners of 2nd place in various teams of sports were each given certificate of merit, cash prize of Rs. 3/- and a tin of ovaltine donated by M/s. Jagajit Industries Private Limited, Madras. Those who came in the 3rd place in the sports were each given a cash prize of Rs. 2/-. About 210 handicapped children were thus given prizes on the occasion of the sports meet. Certificates and prizes were given by then Commissioner and Secretary to Government, Labour and Employment Department and other V.I.Ps. who were present on the occasion. Free refreshments were served to all the handicapped children through a few social service organisations and philonthropists. Besides free refreshments, The Tamil Nadu Dairy Development Corporation supplied 1,000 bottles of flavoured milk to all the handicapped children. 1,000 bottles of cool drinks (LIMCA) were supplied to all the handicapped children by M/s. Chennai Bottling Company Private Limited. Biscuits donated by M/s. Brittania Biscuit Company were also supplied to the handicapped participants.

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Free refreshments arranged by Rajasthan Youth Association, Madras were served to all the handicapped children who attended the Public Meeting. Besides, 500 bottles of flavoured milk supplied by the Tami Nadu Dairy Development Corporation, Madras were also served to the handicapped children. Cool drinks donated by M/s. Kali Mark Company Private Limited were also served to all the handicapped children who participated in the Public Meeting. Besides, 300 metres of Longcloth supplied by M/s. Kothari & Sons, Madras, 200 metres of Longcloth supplied by M/s. Lakshmi Mills, Coimbatore and 200 pieces of shirting cloth and 200 pieces of half-pant cloth supplied by M/s. Binny Limited were all distributed to all the handicapped children who attended the programme.

Ovaltine was supplied to each handicapped child who attended the function from out of the donations made by M/s. Jagatjit Industries Private Limited. Glucose-D supplied by M/s. Glaxo Laboratories Private Limited were also supplied to all the handicapped children who attended the function.

Publicity :

A good deal of publicity through dailies news reel, A.I.R. and television was given to all the programmes of the celebrations.

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The World Day of the Disabled was celebrated in all the District Headquarters under the guidance of District Collectors. The pattern of celebrations in the districts were generally the same as in Madras City and the celebrations in the districts include the sports meet for the handicapped children, exhibitions and also a Public Meeting and cultural programme. The Assistant Directors/District Employment Officers of the districts arranged the celebrations in co-operation with the various agencies engaged in the welfare of the handicapped.

This year's celebrations helped very much in increasing the public awareness of the need for helping the handicapped persons of the Society to lead their lives on par with the able bodied people ; and also helped to a considerable extent in bringing out the latent potentialities of the handicapped to the public and also in bringing the handicapped closer to the people.

Thiru V. Karthikeyan, Adviser to the Governor of Tamil Nadu is awarding a shield to an outstanding employer who has employed the largest number of handicapped persons.

RICE IS BETTER THAN WHEAT

In India, rice forms the chief article of food for about half the population, and in certain parts of the county, even people accustomed to other grains are steadily changing over to rice. The popularity of rice with the consumers is due to (1) its attractive colour and shape combined with the ease of cooking (2) its neutral taste and flavour so that it can go into a variety of sweet and savoury dishes, and (3) its capacity of filling and giving satisfaction to the consumer without being heavy. It is because of these qualities that the consumers are able to take relatively large quantities of rice either in a single course or a succession of courses without feeling the monotony.

Nutritional Point of View

From the nutritional point of view, rice is predominantly a starchy food, though it also contributes useful quantities of proteins and vitamins. The protein-content (usually 5 to 6 per cent) in the raw polished grain is lower than that of most other grains. **The biological value of rice protein as determined both by animal experiments and human metabolism studies is, however, shown to be of a high order, and distinctly superior to that of wheat.** As compared with wheat, which is itself deficient in calcium, rice contains a still lower percentage of this essential mineral. The commoner specimens of rice contain hardly 10 mg. percent of calcium. Some varieties do contain more, but the total quantity rarely exceeds 30 mgs. per cent. The phosphorus-content also is low, and about 75 percent of it is in the form of the relatively unavailable phytin. As regards the B group vitamins the hulled rice grain contains nearly as much as wheat, though the thiamine-content is generally lower than in wheat. In the case of rice, the minerals and the B group vitamins are largely concentrated in the germ, the scutellum and the peripheral bran layers.

Loss of Nutrients during milling

The concentration of the vitamins and the minerals in the surface layers and also in the easily detachable germ leads to a considerable loss of the nutrients during the milling of the grain. Rice is being milled often to the extent of 15 per cent so as to ensure better keeping quality and to obtain an attractive product with good cooking quality. As a result of this a substantial part of the essential minerals and vitamins are lost to the consumer. To avoid, at any rate, some part of this loss, undermilling has been repeately suggested, especially for people whose main article of diet is rice. Home-pounded rice is under-milled, and contains about 2 r thiamine/g., and its use wherever possible is to be advocated.

Loss of vitamins during washing and cooking

The wasteful effects of washing rice in large amounts of water prior to cooking, and also the loss of nutrients as a result of discarding the gruel obtained by cooking the rice in excess water have been demonstrated. If these practices are followed, only about 25 per cent of the vitamins present in the original grain will be retained by the cooked rice. Parboiled rice has been demonstrated to behave better than raw rice in this respect, because washing of this rice prior to cooking removes less vitamins than in the case of raw rice. As far as possible, dirt and bran hould be removed by winnowing, and if washing has to be resorted to, the grain should not be rubbed under water as is usually done but the grain should be poured into the cooking water and the floating impurities removed by skimming out.

A special feature about rice is that it is used to a large extent in the form of a cooked whole grain, unlike most other cereals which are usually consumed after being made into flour. In fact, many of the nutritional defects in the customary practices of consuming the grain would not exist if rice could be consumed after being made into full extraction flour. The development of such diets is far cry. As things stands, preparations made out of rice flour form only a small proportion of the dietary of rice-eaters. In this connection, special mention should be made of the leavened South Indian preparation popularly known as iddli which is made out of blends of rice (generally parboiled) and de-cuticled black-gram (pPaseolus radiatus L.) which is a well-balanced and easily digestible product. It is pleasing to note that the popularity of the iddli is steadily spreading to other parts of India.

Increased intake of the pulses would not only increase the total consumption of protein, but also make the protein more balanced nutritionally. The mutural supplementary action between the amino acids present in cereal and pulse proteins has been very clearly demonstrated. Among these pulses Bengal gram (Cicer arietinum) has been found to have the highest growth-promoting value.

—Source : I.C.A.R. Publication

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—Source : I.C.A.R. Publication

KALPAKKAM —Forerunner in the Fast Reactor Technology

By

N. SRINIVASAN

Project Director Reactor Research centre, Kalpakkam, Madras.

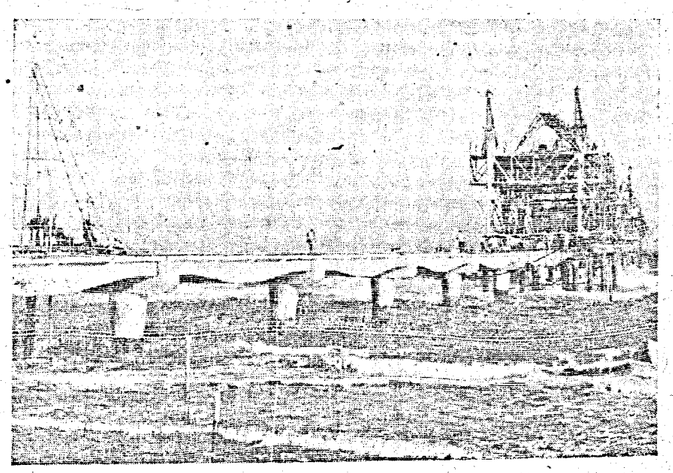
With the preparations being made by the Indian Atomic Energy Commission for equipping ourselves for the fast reactor technology, India will be among the forerunners in this branch of science and technology. Very close to the site of the Madras Atomic Power Station at Kalpakkam 5 Km South of Mamallapuram, there is coming up the Reactor Research Centre of the Development of Atomic Energy. This centre is devoted to the development of technology of fast breeder systems. The work of the centre will lay the foundation for the third phase of the programme, viz. utilisation of our thorium in reactors using Uranium 233 as fuel.

In a hydro-electric power station potential energy in the water body is converted to electrical energy by the use of suitable turbo-generator. In a thermal power station the burning of coal or oil or gas releases chemical energy in the form of heat, which is used for producing steam at high pressure and temperature. The steam operates a turbo-generator to produce electricity. The nuclear power station differs from the thermal power station only in the method of producing steam. Einstein's theory led to the realisation that mass can be converted to energy. The energy input in the nuclear power station arises from the converion of mass into energy. When a neutron is absorbed in Uranium 235 or Plutonium 239 or Uranium 233 the nucleus becomes unstable and splits into two or more fragments. In this process known as nuclear process known as nuclear fission, a microscopic quantity of mass disappears and is released in the form of energy, Uranium 235 occurs in nature along with another isotope of Uranisum, viz., Uranium 238 which does not undergo fission and is not directly useful for producing energy. Unfortunately Uranium 235 content is only one part in 140, the re-maining being mainly Uranium 238. On the other hand Uranium 238 can absorb a neutron and get converted by radio active processes into Plutonium 239 which undergoes fission like Uranium 235. Similarly Uranium 233 which can undergo fission is produced by absorption of neutron by Throium 232. Plutonium 239 and Uranium 233 which do not occur in nature are man made sources of nuclear energy. The production of nuclear power from Uranium 235 would ultimately be restricted by the total available quantity of Uranium in nature. However, the possibility of converting Uranium 238 and Thorium 232 into fissionable fuel has removed the constraint on the growth of nuclear power on account of availability of basic fuel material.

Nuclear Reactors

In order to produce the man made nuclear fuels plutonium 239 and Uranium 233 we need nuclear reactors where the neutrons are produced for obsorption by Uranium 238 and Thorium. Therefore in any nuclear power programme the initial phase perforce will be based on Uranium 238. It is this logic which has prompted the Indian Atomic Energy Commission to project the three-stage long term nuclear programme for the country. The first stage which is in progress now is to set up nuclear power stations based on natural uranium using

The Jetty near the completion stage with the gantry at about 1,200 feet from the coast line.



heavy water as moderator. The reactors at Ramapratapsagar in Rajasthan and those under construction at Kalpakkam and Narora are of this type. This reactor system has the greatest potential for production of Plutonium per MWhr and utilises the limited resources of natural uranium to the maximum extent. The Plutonium produced in these reactors is separated by chemical methods and used as fuel in the second stage of the programme viz. Fast Breeders. This type of reactors differs from the natural uranium reactors in so far as they avoid declaration of the nutrons with a moderator like heavy water and hence called fast reactors. On account of the far lower tendency for wasteful absorption of fast neutrons, the neutrons are more effectively used for absorption in Uranium 238 or Thorium 232 for conversion to Plutonium 239 and Uranium 233 respectively. On account of its greater efficiency fast breeder reactors can be designed to produce more Plutonium than is consumed. In very approximate terms for every MW day of energy produced one gram of Plutonium will be used up from the fuel but as much as 1-1/2 grams of Plutonium the Uranium 238 present in the reactor. The extra fuel material thus produced will provide fuel for additional fast reactors; hence the term fast breeders. Realising the obvious advantages of such a system and the need for rapid growth of nuclear power India is equipping itself for self reliance in this advanced technology. At present a 250 MWe fast reactor power station is in operation in France and another is in operation in. USSR. A third one is coming on line in Great Britain.

Reactor Research Centre

The Fast Breeder Test Reactor under construction in this research centre at Kalpakkam will equip our scientists and engineers with the know-how for design, construction and operation of sodium-cooled fast reactors. This reactor will produce a small quantity of power, about 14 MW thereby providing the operational experience of an integrated power station based on fast reactors.

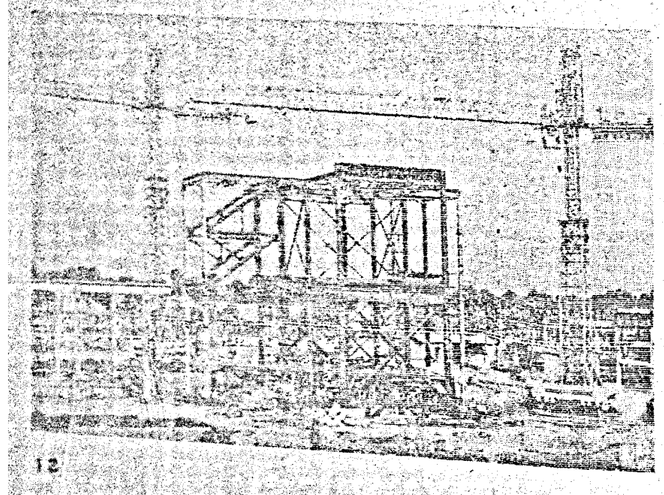
A fast reactor like FBTR uses liquid metal sodium as coolant for the removal of the heat from the reactor and it operates at temperatures of 500 deg. C. The properties of the materials used in the reactor have to be suitable for withstanding this environment. In addition, the material is subjected to intense radiation due to the fast neutrons. When a neutron interacts with the material it causes disturbances in the lattice structure of the material affecting its properties quite significantly. Metallic materials loose their ductility and tend to become brittle. Information available regarding the damage to materials due to fast neutrons on the one hand and due to high temperature sodium on the other is still not quite complete. Any programme at self sufficiency in the materials required for such an advanced technology should include attempts at understanding the basic phenomena involved in the various processes affecting the properties of materials. Such a study coupled with investigations into the formulation of special alloys would lead to identification of structural materials that can be produced in the country and used for our fast reactor programme. This study would have significant impact on the advancement of materials technology for the benefit of industrial development as a whole in the country.

Another aspect of fast reactor development is the conservation of fuel material. The additional fuel material bred in the reactor should be recovered by chemical reprocessing and re-fabricated into fuel element for re-use in a fast reactor. Each of these stages would involve the usual process losses. Unless these losses are kept to the minium the gains of breeding would be lost significantly. Extremely toxic material plutonium is associated with large quantities of radio activity in the irradiated material that comes out of the reactor and hence it is to be handled behind thick shielding with remote controlled equipment and in total containment to prevent escape of plutonium. The need for developing sophisticated technology for this phase of the programme is obvious. The specifications for the fabrication of the fuel are stringent and the development of fuel fabrication technology is highly guarded commercial secret in all advanced countries and this performance has to be developed on our own for our future use.

For all this programme the Centre will employ about 500 scientists and engineers, 1000 technicians and 500 other supporting staff. The work of the Centre of which the Fast Breeder Test Reactor is the major facility will within the next decade equip us to design, build and operate larger fast reactor power stations that will be acutely needed in the late 90s and during the beginning of the next century. When such a demand arises India will not have to look elsewhere for technology and experts.

(*Courtesy*: A.I.R., Madras)

Structural steel for Reactor Building No. 1



ORIGIN AND GROWTH OF THE LEGISLATIVE COUNCIL IN TAMIL NADU

By

C. K. Ramaswamy, B.A., B.L.,
Secretary,
Tamil Nadu Legislative Council.

Democracy is Rule of the people by the people, and for the people and Sovereignty in a democractic set-up resides in the people. Modern States are vast in size and contain a population which is at once numerous and scattered, with interests which are as diverse as they are, sometimes, conflicting. And for all people to participate directly in the actual functioning of Government, is well-nigh impossible. It is here that the Legislatures play an important role in influencing and regulating the work of the Government. Among the three organs of the State—the Executive, the Legislature and the Judiciary—the Legislature naturally, gets the pride of place, as it performs the primary function of Government, namely, that of making laws which the Judiciary interprets and the Executive implements.

The genesis of Legislatures in India can be traced to the Charter Act of 1833 which, for the first time, provided for the addition of a fourth member to the Governor-General-in-Council in India for the sole purpose of Legislation. The Charter Act of 1853 which was the next milestone in the evolution of Legislatures in India made the Law Member of the Governor-General-in-Council a full member and also enlarged the Governor-General's Council for Legislative purposes by the addition of the Chief Justice, another Judge of the Supreme Court of Calcutta and one paid representative each of the Presidencies or the Governor's Provinces. The Indian Councils Act, 1861, constituted a great landmark in the growth and development of Legislatures. The Act, for the first time, associated with the Executive Council of the Governor of Madras eight *ad hoc* members, of whom at least one half were non-officials nominated by the Governor who held office for a period of two years. The next important stage in the evolution of the Madras Legislature was reached when the Indian Councils Act of 1892 was passed by which the number of additional members of the Madras Legislative Council was raised to 20, of whom not more than nine had to be officials. This Act was an improvement over the preceding one in that the Council could now discuss the Annual Financial Statement and question the Government on matters of administration and of public interest and importance by means of interpellations, subject, of course, to certain limitations. The first Legislative Council in Madras constituted under the Act met on 17-1-1893 in the Council Chamber, Fort St. George.

The Act of 1909 embodying the Minto-Morley Scheme reconstructed and enlarged the Legislative Council. It introduced for the first time the method of election, though not direct. The number of additional members of the Madras Council was increased from 20 to a maximum of 50 with a non-official majority. The Act gave the members the right to move resolutions upon matters of general public interest and also the Budget.

The Montague Chelmsford Reforms

The Government of India Act, 1919, which embodied the Montague-Chelmsford Reforms, introduced the system of Dyarchy in the Provinces which ushered in a measure of responsible Government. The proportion of elected members of the Provincial Legislative Council was raised to over 70 per cent. Madras had the largest Council with a total of one hundred and twenty seven members. The Legislative power of the Council extended to Provincial matters only. The term of the Legislative Council was three years. The right of moving motions of adjournment to discuss matters of public importance was granted for the first time. The Council had the power to vote on the Budget and could reject or reduce Demands for grants. But such rejection or reduction could be undone on certification by the Governor.

First Woman to Council

The Local Legislatures were also empowered to extend franchise to women. It was to the credit of the Madras Legislative Council that in its very first session on 1st April 1921, it was resolved to do away with sex disqualification on women for franchise. Subsequently, the disqualification in respect of election as member was also removed, so that Dr. Muthulakshmi Reddi was the first woman to be elected as M.L.C. in 1927. (She became the Deputy President of the Council also.) Before the Mont-ford Reforms in 1919, the Governor himself used to preside

over the meetings of the Legislative Council and it was not until 1925 that the Council had an *elected* President.

The Fourth Legislative Council under the Mont-ford Reforms was elected in 1930 and functioned till the end of 1936, when Provincial Autonomy under the Government of India Act, 1935, was ushered in. The Council had always had an interesting assortment of different kinds of members who were of a high intellectual calibre, some of the prominent members among them being the Raja of Panagal, Sir A. Ramaswamy Mudaliar, Thiru T.A. Ramalingam Chettiar, Sir P.T. Rajan Sir C.P. Ramaswamy Iyer, Thiru S. Satyamurthi, the Raja of Bobbili, Sir Mohammed Usman, Dr. P. Subbarayan, Dr. C. R. Reddi, Sir R. K. Shanmugam Chetty, Thiru P. Siva Rao, Sir K. V. Reddi, Sir, Sir P. Thiyagaraya Chetti and Sir S. Varadachari.

Upper House Provides Wholesome Opportunity for Wholesome Contribution

The Government of India Act, 1935, marked the next general stride in the evolution of Legislatures. The Act established a bicameral Legislature in the Province of Madras, as it was then called. Thus was born the Second Chamber in Madras. One of the functions of the Second Chamber is stated to be "to interpose so much delay in the passing of a Bill into law as may be needed to enable the opinion of the Nation to be adequately expressed upon it and thereby check the passing of ill-digested and hasty legislation by the Lower House." In view of its peculiar set-up, consisting of persons representing diverse elements of public life, the Upper House provides an opportunity to its Members to make a wholesome contribution to legislative deliberations and to ensure maturity of consideration and thought to various aspects of legislative and other business. This Council consisted of not less than 54 and not more than 56 Members. Among them were the Rt. Hon. V. S. Srinivasa Sastri, Dr. A. Lakshmanaswamy Mudaliar and other stalwarts.

The Madras Legislative Council under the new Constitution of India began functioning on and from 21st April 1952. It consisted of 72 Members of whom 12 were nominated by the Governor and the rest elected from the Assembly, the Graduates, the Teachers and the Local Authorities Constituencies. Thiru C. Rajagopalachariar, former Governor-General and Chief Minister of the State was a Member of this House. With the formation of the Andhra State on 1st October 1953, the strength of the Council was reduced to 51. It was further reduced to 48 by the States Reorganisation Act, 1956, but increased to 50 by the States Reorganisation (Amendment) Act, 1956. In pursuance, however, of the Resolution passed by the Council on 21-12-1956, the strength of the Council was raised to 63 by the Legislative Councils Act, 1957. The Constitution does not make any distinction between the Houses of the Legislature in the matter of selection of Ministers.

One of the important innovations in the transaction of business in the Tamil Nadu Legislative Council in recent times, is the discussion of "Policy Notes" during the Budget Session. The Constitution does not prohibit discussion in the Upper House of the policies behind individual Demands, though they are not subject to its vote. From 1964, there had been persistent demand from the Members of the Council that they should have an opportunity to discuss the policies governing individual Demands, as the Appropriation Bill was considered by the Legislative Council also. The demand, of course, has been conceded and the Rules of Procedure of the Tamil Nadu Legislative Council have been, amended to that effect in 1972. The practice now followed is that the policy governing each Demand is outlined in a Policy Note which is printed and placed on the Table of the House. The discussion on the Policy Note takes place on a Motion by the Minister concerned and after the Minister's reply, the motion is treated 'as talked out'.

With the dissolution of the Legislative Assembly on and from the 31st January 1976, the Council has been in a state of "suspended animation". Under the Constitution, the Council is a "Continuing body", unlike the Assembly which is subject to dissolution and reconstitution. With the Elections to the State Legislature in June next, the Council will revive its rather historic rôle not only as an effective "Revising Chamber" but also in maintaining sound Parliamentary traditions, for which Tamil Nadu has always been known.

Public Relations in GOVERNMENT

by
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A broad definition of public administration was suggested by Woodraw Wilson in his celebrated essay, "The Study of Administration". "Public Administration", said Wilson, "is the practical or business and of government because its objective is to get the public business done as efficiently and as much in accordance with the people's tastes and desires as possible. It is through administration that government responds to those needs of society that private initiative cannot, or will not supply." So, an important relationship of government with its citizens occurs at those points of contact with the administration where public controls and services are operative: the tax office, rationing office, police stations, passport office, and the like.

The concept of public relations as a component of public administration is as old as the world itself. In medieval times, it was dramatised in the slogan *Vox populi vox Dei.* Emperor jehangir had bells of justices for aggrieved citizens to ring for an audience with the King. All that is new in PR is proliferation of the idea consequent upon growth of organisations, industrialisation, and diversification of modern business on the one hand—and the availability of new means of communication, on the other. The former created the need for PR, the new mass media provided the tools.

In the 19th century, there was expansion of industry and commerce in Europe and in America, and the concomitant evils of urbanisation followed. There was conflict between agriculture and industry, between industry and government, and between government and the people. And to bring about harmony, it became necessary to have a tuning agency. And this came in through what has come to be known as public relations.

What is Public Relations :

Public relations, a phenomenon of growth, seeks to resolve group-conflicts. The International Encyclopaedia of Social Sciences defines public relations as "the organised effort to communicate information, and to modify attitudes or behaviour on behalf of a client, or a cause. "Public relations is a *sustained effort for mutual understanding.* It is a philosophy of management an attitude of mind that aims at achieving a better understanding between an organisation and its public: employees, shareholders, customers, suppliers, dealers, etc. etc.

Public relations is not propaganda. Propaganda is concious effort to influence the opinions and actions of others. It may prove good when used for a worthy cause. It may be bad when used in stirring up hatred. (The Nazi atrocities in the name of purity of the Aryan race are a grim example). Propaganda is only outward directed, but PR is a two-way Street.

Public relations is not mere publicity. Nor is it all puffery. At one time, public relations ended with publicity, but now PR programmes embrace all those factors which impinge on one another in relations of an organisation with its publics—both internal and external. In Government, public relations helps formation of sound public policies, and keeps employed morale high.

In our country—both in industry and in Government—Public relations is in its infancy. But, soon there will be a wider overall appreciation of the role of PR. As organisations continue to become more massive more impersonal, and more segmented, the need for PR grows.

Public Relations and Management :

Public relations is an integral part of every democratic set up. But it is not an end in itself. It is a means to an end—a tool of good management.

Public relations, in essence, entails a two-way communication. In government, it would mean a free flow of information from government to the public, and a feedback from public to the Government.

Government

Public report — Public information

Public

It is through feedback that we can see how others see us.

PR operations take place at different levels of management; the top level, the middle level, and the operative level. And, for effectiveness all these must be harmoniously integrated. But, **PR responsibilities** are too fundamental, and too far-reaching to be entrusted to any but senior management. And senior PR officials in government (as elsewhere) must have their voice in top policy making.

PR PROCESS

The PR process consists of four steps ; viz ;

(i) Fact-finding
(ii) Planning
(iii) Communication, and
(iv) Evaluation.

Fact-finding determines the publics towards whom PR programmes are to be beamed, so that PR effort is not misdirected. Research determines the best way of reaching the public. And both these require adequate communication channels for two-way flow of information.

Facts can-be gathered from public offices, from libraries, from trade journals and newspapers. And from cartoons too. Then, there are informal sources like telephone and incoming mail. Advisory committees comprising of publics' representatives also provide informative feedback.

After identification of a PR problem, comes planning of the programme.

Planning involves long-range programmes to achieve the PR mission and, within that wider framework short-term plans operate to achieve specific projects. Once a programme has been drawn, it is essential to associate top echelons of management with the plan so that they do not remain uninformed. In fact, a careful briefing at all levels is important.

Planning envisages " a searching look backward: a deep look inside a wide around, and a long, long look ahead." Inadequate , planning leads to hasty decisions, and poor results.

The Third step—communication, is most vital.

A convenient way to describe an act of communication is to answer the following questions :

Who ?
Says what ?
In which channels ?
To whom ?
With what effect ?

Communication has three basic elements : the sender of the message, the message itself, and the receiver of the message. The fact that , ' people ' are a common factor in all PR activities, is an important consideration in tailoring communication programmes.

Communication disseminates knowledge, and knowlodge is the chief requisite to change in our society, and it also has the much needed leavening effect. Communication is, therefore, one of the primary factors in the process of development.

Communication involves empathetic listening. We learn far more by listening than by talking for we can only talk about things we already know. Listening is largely a mental process. A confucian saying has it that God has given two ears and one mouth so that man may listen more, and speak less.

But, what prevents us from listening to others ? Vanity. Inferiority complex. Lack of curiosity. Sheer garrulousness. And lastly, fault of the speaker.

The final step in the PR process is evaluation. An extensive review is essential to judge the effectiveness of a programme is a complex exercise, and measurement of gains does not readily offer an arithmetical answer. The benefits accrue more in terms of changed attitudes, mutual confidence, and image-building that the programme inspires.

Funds for PR :

Public relations activities cost a lot of money. But this is investment like money spent on acquiring good plant and machinery And as effective PR involves sustained long-term endeavour, an insufficient allocation of funds for PR would be extravagance.

How much PR does an organisation need ? There is no set formula, for there are many variables. The potential results of PR activity are related to public mood and temper. For instance, 'NIRODH' would have needed much more PR support a few years ago when family planning was in its infancy. But returns from PR cannot always be related to the number of rupees invested in a programme. Often, a small investment may be more meaningful in the hands of skilled practitioners of public relations.

Public Relations in Government :

The Government, today, is a complex organisation comprising many officers and departments—at the Centre and in the states. Sheer size of the country, and multiplicity of governments' publics create a distance. And this distance gives the citizen a vitiated sense of remoteness. The citizen thinks that a government secretariat is a maze beyond his comprehension. He does not understand the *raison detre* of heavy defence expenditure, or of low returns from many welfare programmes. Sporadic food shortages despite fertilizer factories coming up, and much irrigative water flowing down the dams is an engima to him. Public relations programmes would clear citizens' mind of misunderstanding—and establish a better rapport with them.

A democracy cannot function in isolation and insulation from its publics. And a well-informed, and responsive citizenry is fundamental to government's goals.

Publics has been defined as " any loose association of Individuals who are held together by common interests and objectives, and by various means of communications." In a vast country, the governments publics would be huge and heterogeneous. And its structure would be complex and varied. There would—the urban publics and the rural publics; men, women, and youth publics: land-owners and land less farmers. Publics would be groupable by religion, by occupation and business, profession, and by educational patterns. And no less important are government publics-the multitude of employees, over whom the government extends-umbrella. They are governments' greatest asset, and its best embassy.

It would be an over-simplification to speak of ' relation ' between government and its publics. For,

QUEEN OF ABHINAYA

The greatest exponentof Bharata Natyam, today is undoubtedly Balasaraswati. She is not only a great dancer but is well versed in carnatic music also. Her musical and dance emotions merge with such intense involvement that she still reigns supreme.

The genius and range of this great artiste is too vast. To pack half a century of the eventful life of an artiste of such calibre into a documentary film is an impossible task. Stalwarts of such stature as Satyajit Ray only could dare attempt it.

Tamil Nadu can hold its head high to have this artiste of great renown and it is but meet that the Government of Tamil Nadu came forward to film a documentary on the life of this " Queen of Abhinaya", thus paying tribute to her and also preserve the document for posterity.

A connoesieur of art will say that Balasaraswathi and Bharathanatyam are synonymous.

Glimpses of her rare genius could be seen in her Slokas, which improvise natya with endless and subtle varieties presenting the theme in complete fusion with the flow of graces, nuances and cadences of the music.

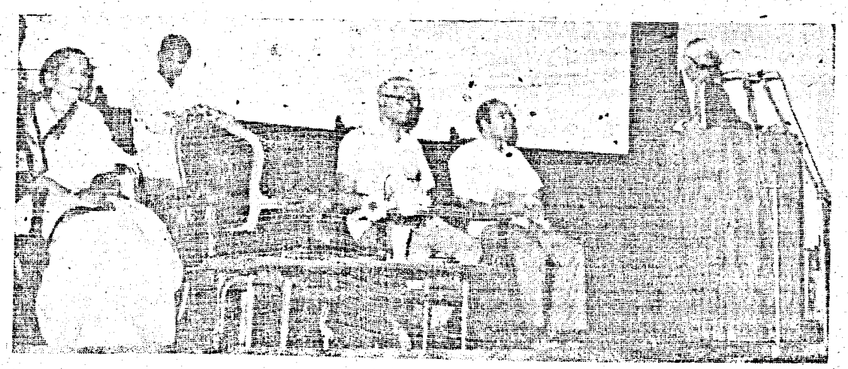
The documentary unfolds with her career, her personality and her total dedication to this fine art which is artistically and emotionally hightened by the matchless excellence of some select pieces.

The background chosen for the number ' Krishna Nee Begane " could have made any other artiste flounder. But not the indomitable Balasaraswathi. With the sea-breeze billowing her saree, she with her consumate skill, managed to tuck in the saree with such grace that it appeared part of the abhinaya and reminded one, of the legend of the " Thandava Natanam " of Lord Siva, where he picks up theKundalam with his foot and puts it on the ear without a pause in his natanam.

Tmt. Balasaraswathi given a warm reception

The film is short and sweet but one feels that the padams which she is famous for, could have been added to get a sense of fulfilment.

Bala is certainly a legend in her life time and a precious gift to Tamil Nadu. The premiere was presided over by the then acting Governor Thiru P. Govindan Nair, who at the function held earlier felicitated Balasaraswathi on her securing the Padma Vibushan award.



Hon'. Thiru P. Govindan Nair, the then Acting Governor, felicitating Balasaraswathi on her receiving Padma Vibhusan.

Rice Research Stations in Tamil Nadu

In Tamilnadu, systematic crop improvement in rice started from the the year 1913 at the Paddy Breeding Station, Coimbatore. New stations were opened soon after to serve the needs of the different regions of the State. At present, rice research work is being carried out at six research stations, Coimbatore, Aduthurai, Ambasamudram, Tirukuppam, Pattukkottai and Palur.

Paddy Breeding Station, COIMBATORE

The station has an additional importance of being attached to the Agricultural College and Research Institute, Coimbatore. The soil is clayey and the fields are maintained by tank irrigation and a few bore wells. The farm has an area of 13.6 hectares.

With the onset of monsoon in May the cultivation starts with short duration varieties and then with medium and long duration varieties. Navarai season commences with the sowings in the last week of January and upto middle of February.

Studies on the genetics and developmental aspects of rice have been carried out from the beginning and a great deal of fundamental work was projected and completed on crop breeding and agronomy. As many as 39 strains have been released from the station and out of them 16 were obtained by hybridisation. These include very popular strains like GEB 24, Co 2, Co 4, Co 19, Co 25, Co 29, Co 31, Co 32 and Co 33.

The centre was taken over by the Tamilnadu Agricultural University in the year 1971. At present a number of research scholars are handling important projects.

Paddy Experiment station, ADUTHURAI

The station was started to tackle the problems of rice in the Cauvery delta which includes the whole of Thanjavur district, parts of Trichy and South Arcot districts. In the earlier years upto 1945, the station was wholly dependent on canal irrigation. Subsequently a number of filter points placed at depths ranging from 9 to 27 metres at different field locations have been able to supply enough water to raise early crops of kuruvai and grow cotton in the rice fallows. The extent of the farm is 44 hectares. The soil is alluvial clay and has a pH of about 7.5. The canal water is available for eight months from the middle of June to middle of February.

The cultivation starts from middle of May for the kuruvai season. The kuruvai sowings continue upto the middle of July. The samba sowings are taken up between middle of July and middle of August with medium and long duration varieties. The cold weather or thaladi sowings are taken up from the middle of September to middle of October for medium duration varieties. Short duration varieties are raised in nurseries during December. Transplantation is the common practice that is adopted.

A new variety of Paddy.

The station has released as many as 31 strains and of them eight by hybridisation. Among the important varieties that have been popular for a long time are the kuruvai strains ADT 3, ADT 20 and ADT 27; the long duration strains ADT 1, ADT 2, ADT 8 and ADT 10 ; the "udu" varieties ADT 6 and ADT 7 which have a duration of 220 days and the semidry paddy varieties ADT 21 and ADT 22. The kuruvai varieties have since been replaced by ADT 29, ADT 30 and ADT 31. ADT 8 continues to be popular. ADT 10 has been replaced by Co. 25. The peculiarity of "udu" cultivation is that the seeds of short duration variety like ADT 3 and a "udu" variety ADT 6 and ADT 7 are mixed at the ratio of 3 : 1 and planted in the kuruvai season. After the harvest of the kuruvai crop the long duration "udu" grows as a main crop and comes to harvest in January-February. The station has also been working on the agronomic problems of rice such as methods of raising nurseries, the problems of green manuring and methods of application of fertilizers from time to time with respect to the popular varieties.

R. VENKATARAMAN,

Crop Specialist, Paddy Experiment Station, Aduthurai.

The station was upgraded in the year 1962 and placed in charge of a Crop Specialist. The work was reorganised under the new disciplines of agronomy, entomology, plant pathology and soil science. Intensive work is in progress for evolution of new high yielding varieties with the coordination of available technical skill to test soil and crop responses and screening for pests and diseases.

Paddy Experiment Station, AMBASAMUDRAM

The station situated in Tirunelveli district has an area of 6.6 hectares and grows rice with the help of the canal water from Tambaraparani irrigation system. There are two shallow bore wells in the farm which can supply water to maintain nurseries. The soil is medium loam and with a substratum of gravel. The land is terraced and the fields are small sized ones.

The cultivation starts expecting the receipt of canal water early in June and this is the kar season and varieties of duration 105 to 120 days are grown. The following crop is called the pishnam and medium duration varieties are grown. After the harvest of the medium or long duration varieties in single or double crop wet lands, pulses or green manures are grown. In some rice fallows Tenkasi cholam (Jowar) is also grown. In farmers holdings, the lands are wetted in March before the channels are closed and ploughed dry as many as 9 to 12 times till April-May. In such conditions either semidry sowing is undertaken or transplanting is done. Water is let into the field and without any additional preparations seedlings are transplanted. Some of the local varieties are senthil nayagam, karsamba, kattisamba, vethividangam, anaikomban, kuruvaikalyan, thooyamalli, avasarasamba and karthigai samba. The station has released 14 strains and of them three were by hybridisation. ASD 1 is the ruling variety of the tract, including Tirunelveli and Kanyakumari districts. The semidry variety ASD 4 is grown in large areas in Tirunelveli and Ramanathapuram districts. ASD 5 is a medium fine variety of medium duration preferred for tank fed areas and late pishanam. ASD 8 and 9 are short duration varieties, generally suitable for summer, for broadcast crops. ASD 11 has fine grain quality and has been found suitable for November planting. ASD 14 is the first variety evolved at the station for an ideal plant type.

The station was upgraded as a Paddy Experiment Station from the year 1974. Facilities for work on the disciplines of agronomy, soil science, entomology and plant pathology are being built up and the areas of activity and service of this station are bound to increase in the future.

Paddy experiment station, TIRUKUPPAM

The station is situated near Madras city and is accessible from Sevvapet Road Railway station on the Madras-Arakonam branch. The soil type is light clay with pH range 6.8 to 7.9. The total area of the station is 15.85 hectares comprising partly of purely dry and rainfed lands, semidry area wetted on availability of water from the tank and wet area maintained by well irrigation. The fields are irrigated from a high level channel of Thozhur tank and also by means of spring channels from Cooum. The extent of swamp rice cultivation is limited to seasonal availability of water as good sources of underground water have not yet been identified. In these aspects the station represents North Arcot and Chingleput districts.

When the tanks are full in May, the sowings of sornavari season are taken up immediately. Short duration varieties are grown. Otherwise the sowings commence by the first week of September, when drought resistant and medium duration varieties are grown. Some of the local varieties are vanan samba, kappa samba and pishni. The navarai is the season from January, when short duration varieties are grown.

Seven varieties have been released from the station and of them TKM 6 is the most important variety extracted from the cross CO 18 x GEB 24.

The centre has been upgraded as a Paddy Experiment station from the year 1974 and the disciplines of agronomy, soil science, entomology and plant pathology are being organised. There is great scope for developing the agronomical aspects of dry cultivation and breeding new drought resistant and semidry varieties of fine grain and high yield.

Paddy experiment sub-station, PELUR.

The station is situated in South Arcot district and is accessible by road from Cuddalore. The total area of the station is 22 hectares. The soil is deep sandy loam to clay loam and the pH is about 7.0. Main source of irrigation is through bore wells.

Rice is grown in three seasons viz. sornavari, samba and navarai, Sugarcane is planted between December and April. Spreading varieties of groundnut is sown in April-May and the bunch varieties in December. Ragi has two sowing seasons viz. December-January and April-May Cumbu (Bajra) and cholam (Jowar) are grown as irrigated crops from March. Cotton is grown in rice fallows in December. In South Arcot district, multiple cropping and mixed cropping are practised extensively. Groundnut is generally confined to shallow soils and other crops to deep soils.

The work at the station was initially devoted to studies on groundnut and sugarcane and then to millets and rice. Two strains in rice PLR-1 and PLR-2 ; two strains in millets viz. P-1 and Ragi [illegible] released before 1942 and they were selections from local varieties. With the introduction of high yelding new varieties, the varieties of the station have gone out of popularity.

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The station works as a sub-station at Aduthurai from the year 1972. The facilities of lands are utilised for testing materials, not only of rice but also millets and oil seeds. There is scope to develop studies at this station on multiple cropping and mixed cropping, suitable for irrigated conditions of South Arcot District.

Multiple crop experiment sub-station, PATTUKOTTAI

The station is accessible from Thanjavur. The area of the farm is 14 hectares. The soil type is

JL
VD-11MIN70
N77.7

sandy loam with pH about 7.0. The canal water of the Cauvery Mettur Project is available to the farm for cultivation of rice between July and February. There are also a few shallow wells supplying limited quantity of water to raise summer crops of groundnut and millets.

In rice the kuruvai and samba crops are raised just as in Aduthurai. Groundnut is sown in December. Ragi is sown between December and March. Maize is grown from March-April. The farm is representative of the New-project area of Pattukkottai taluk.

Though the farm was started in 1935 originally, it was converted into a State seed-farm in the year 1962. However it was soon found to be an ideal site to evolve multiple cropping patterns, adopting high yielding varieties and became an experiment station again from the year 1972. It works as a substation to Aduthurai.

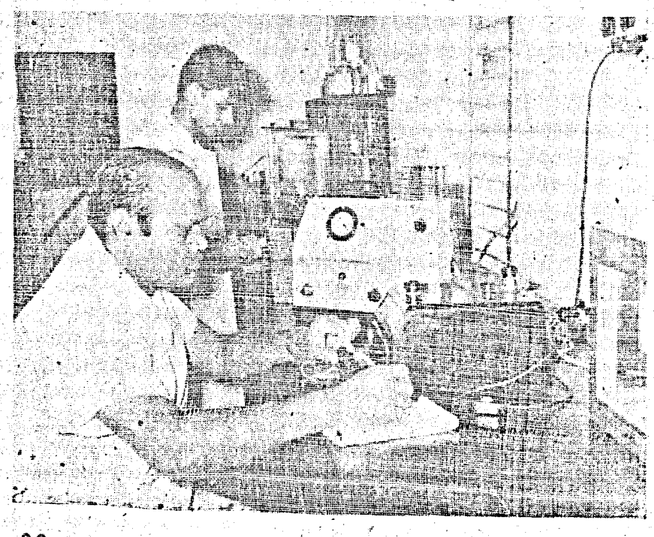
Saline and Alkaline Resistant Rice Research Station, PERAVURANI

The scheme for the evolution of superior salined alkaline resistant strains of rice in Tamilnadu was started in 1960 with the main centre at Peravurani in Pattukkottai taluk of Thanjavur district. The site had different grades of alkalinity varying from pH 7.7 to 10.3 and with salinity EC-6.0 millimhos/cm. at Mallipatnam in the neighbourhood of the station near the sea coast. A subcentre at Paramakudi (Ramanathapuram District) was also fixed for testing promising materials under similar adverse conditions (pH 9.0; EC 1.5) The station was closed in the year 1967.

Nearly 80,000 hectares of land under rice in Tamil Nadu are either alkaline or saline, the occurrence of which is a serious impediment to the successful cropping of rice. The main object of the scheme was to evolve superior high yielding alkaline and saline resistant strains of rice from the progenies of crosses made available from Paddy Breeding Station, Coimbatore and those which have become available from fresh crosses at Peravurani besides selections from varieties under rigid field tests.

As a result of the studies undertaken, one high yielding alkali resistant strain PVR 1 (MTU 1 x SR 26 B) was released for moderate alkali soils (upto pH 8.7). It gives 14% increased yield over SR 26-B having at the same time wider adaptability to different parts of the State and possessing lesser breakage in milling. Anatomical studies of resistant varieties showed more deposition of lining with marked thickening of cuticle and hypodermal tissues and better development of vascular elements in the stems of resistant varieties. No clear cut difference could however be noticed in the root or leaf parts.

Soil testing conducted in a laboratory.



Deep water rice research station, TALAINAYAR

In Tamilnadu there are about 12,000 hectares in Talainayar and Muthupet blocks of Tiruthuraipoondi taluk of Thanjavur district where deep water conditions prevail. The level of water rises to about five feet and is static for a period of three to four months from October to January. Water level starts receding only when the channel is closed for irrigation in January-February. The fields are at a lower level than irrigation channels and hence drainage is a problem for such fields. The main rice varieties grown in these areas are Tiruthuraipoondi kar and kattuvanam which are coarse red rice varieties.

The scheme for the evolution of rice strains for inundated areas in Tamilnadu started functioning from 1958 at Talainayar in Tiruthuraipoondi of Thanjavur District and came to a close in the year 1968. The main object of the scheme wsa to evolve high yielding flood resistant varieties of rice to cater to the needs of these areas and was aimed to be achieved by introduction, pureline selection and hybridisation. Other cultural and manurial trials under typical deep water conditions were also conducted. As a result of studies pureline strains TNR 1 and TNR 2 were respectively released during the years 1964 and 1966. Earlier sowing on receipt of water in the channels 15 x 15 cm spacing, and 20 kg PsO5 per hectare over a basal dressing of 10 tons of farm yard manure and 30 kg. N/ha. were found to be the optimum treatments for getting increased yields. Potash did not have any effect on yield under inundated conditions. Anatomical studies revealed that in the stem, the sclerenchymatous band just below the epidermis and air cavities were smaller in size in the susceptible varieties than in the resistant varieties. The peripheral vascular bundles were seen embedded in the sclerenchymatous band in resistant varieties while they were slighly away from the land in susceptible varieties. In the case of roots and leaves, between resistant and susceptible varieties, no distinguishing differences could be made out.

CARRYING HEALTH CARE TO THE POOR AT THEIR VERY DOORSTEPS

DETECTION and cure, as also prevention of disease among the weaker sections of the population in all slum areas in the State has become possible in Tamil Nadu as all the 274 medical units in Goverment Hospitals in the State have been mobilised to visit these slums every week. A senior doctor leads these teams and the team comprises supporting staff in the shape of medical as well as social workers and paramedical personnel for follow up work.

It has been fouud that through ignorance, negligence and sheer desperation the weaker sections of the population, especially those living in slums, normally do not go to the hospitals at the first symptoms of ailments. The visit of the medical units to these units helps doctors detect early the disease symptoms and enable these weaker sections to avail the hospital facilities to better advantage. This care delivery system has been working since last November and has proved quite successful. There are now 102 medical units in Madras city to serve the slums with a population of 2.5 lakhs; a total of 274 such units in the entire State in the eight medical colleges serve the slums around them. A total of 6.85 lakhs slum dwellers are now covered by this scheme providing health facilities at their doorsteps. Apart from medical facilities, these units undertake nutrition programmes in the slums.

Extended Outpatient Clinics

These Extended Outpatient Clinics help in prevention, detection and cure of diseases. Voluntary agencies and social workers from colleges help in this. The student volunteers apart from teaching hygiene to the slum dwellers, help slum children in their studies also.

A special nutrition programme is one of the main features of these units, envisaged to meet nutritional deficiency especially among children. One trained woman from that area is asked to teach other housewives in the preparation of nutritious food for the children.

Special Programme

Special programmes are being implemented for the education and

Medicines are distributed to patients

Excellent Social work done by Kasturbai Hospital at Ayodhya Kuppam

training of the physically handicapped and mentally retarded children.

Kasturba Gandhi hospital for Women and children is actively engaged in the task. It has all such units. They bring all ailing patients and treat them. For major ailments the patients are asked to come to the hospital where best of treatment is given to them.

for children and expectant mothers. The nurse makes door-to-door visits and advises the people on preventive methods.

One beneficiary of this programme is Thirumathi Hamsa, mother of three daughters. She says that the doctor coming to the centre for on the spot aid is very convenient, as she has no means to go to the hospitals. She said she is

going to doorsteps of slum dwellers. It runs 12 units in South and South Eastern parts of the Madras City. Kattukoil Kuppam is a slum in the heart of the city. They have introduced a family aid system in this area. There are 200 families consisting of 1,500 people benefiting from this scheme. This unit attends to the weaker sections of society in prevention of common ailments and detecting nutrition deficiency.

Medical checkup for a child

An expectant mother is given a thorough examination

Ayodhya Kuppam is one of the slums adopted by the Kasturbha Gandhi Hospital. In co-ordination and co-operation with voluntary agencies, the units are doing excellent social work. A school is also run by the Indian Council of Child Welfare for the slum children. In the medical centre a staff nurse maintained by the Resident Welfare Trust helps in giving immunization

interested in family planning as she finds it difficult to make both ends meet with her husband's income who is an employee of Telegraph office.

Health Amenities At The Doorsteps

The Government Royapettah Hospital is another institution which has started this scheme of doctors

Survey of leprosy and other infectious disease is also done.

Social workers' team headed by a post-graduate medical social worker from Stella Maris Women's College and students of New College render their help under the auspices of this unit.

Thus social and health amenities are taken to the doorsteps of the weaker sections of the society.

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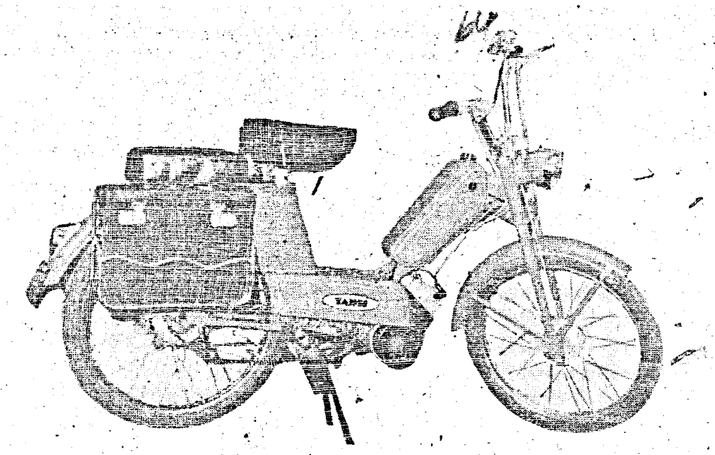


TANSI ENTERS THE FIELD

By

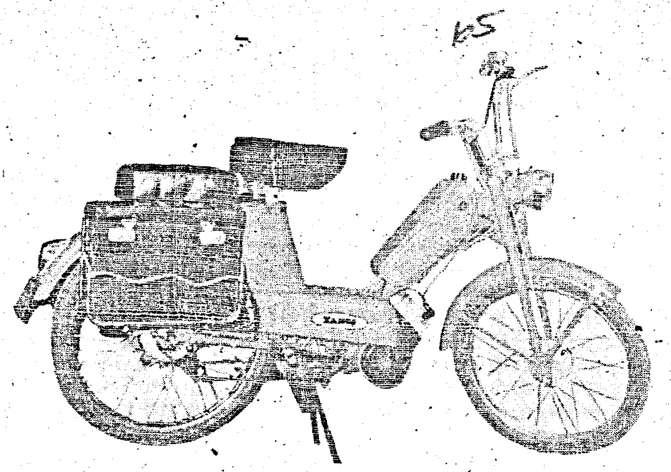
Thiru G. Thirugnanasambandam, A.E.,
Production Manager,
(Mopeds)
TANSI

As a nation becomes progressively industrialised, the necessity for different kinds of vehicles for personal locomotion is increasingly felt. Man has travelled since very ancient times in search of food, of new pastures for his cattle, of lands with warmer climate and endowed with nature's bounties. His means of transport, for milleniums have been animals or animal-drawn vehicles. With the advent of the industrial revolution, a new age had dawned and faster means of transport were developed both for individual and group requirements. Individual transport needs within a country are in proportion to the industrial development of that country, the type or class of transport being determined by the degree of affluence of the industrialised society. In the West, particularly, the U. S. A. and Canada, the common man's vehicle is the Automobile. In the Western Europe, U. K. and Japan, while a large section of the people use the automobile as their personal transport, two wheelers are also used in good measure. In a developing country like India, the use of automobile as a means of personal transport is restricted to a microscopic section of the society. From the point of view of the average common man, even motorcycles and scooters are vehicles beyond his means. The bicycle, the annual sales of which is around 25 lakhs per annum can alone be termed as the vehicle of the common man taking into account his purchasing power.

Need For Cheap Transport

Though ours is still an economy based on agriculture, the effects of industrialisation are increasingly felt in urban areas and the adjoining rural parts. A mixed population with different levels of income with different needs in terms of goods and services have come into existance in and around industrial towns and cities. The prosperity brought about by industry, has seeped into the adjoining rural areas giving them a catalytic boost in their living standards. The effect of this, coupled with the green revolution, has helped a large section of our agricultural population to improve their income levels. The time, therefore, has arrived when some means of transport, better than the bicycles, propelled by power, has to be found to provide the up-and coming common man with a means of cheap transport.

The logical solution to this problem is to motorise the bicycle by means of a low-power engine. This appears to be not only cheap, the extra cost being only that of a small engine, but capable of universal adoption inasmuch as any bicycle can be fitted with an engine. This apparently simple solution is not a satisfactory method of providing a cheap transport. The bicycle is light, enabling its rider to pedal with ease and with very little effort; and its constituent parts-wheels, sprockets, hubs, frame etc., being light, are good enough for manual cycling but not for motorised use. The wheel diameter (28") and thickness ($1\frac{1}{2}$) are so made that the peddaling effort needed of a human being are the minimum and imposes on him very little strain. The very design and construction of the vehicle will



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The need was, therefore, recognised of a vehicle which can be motorised and used without the disadvantages and defects of a bicycle fitted with an engine. In other words, a cheap, powered two wheeler of simple mechanism and construction which can afford reasonable comfort to the rider and is capable of being pedalled when run out of fuel, had to be evolved. The "Moped" as it came to be known was the answer to this long-felt need.

Striking Advantages Of Moped

Mopeds manufactured in this country and elsewhere are generally powered by a 50 cc engine with geared transmission or gearless centrifugal clutch transmission. The frame is a welded construction of sheet metal or tubes, amply proportioned to withstand stress and usage over a period of time. The front suspension is always of telescope type while the rear in some machines has hydraulic shock-absorbers and in some others is left unsprung. Hub brakes are provided both in front and rear wheels and they ensure good positive braking. The geared mopeds can carry two while the ungeared cheaper mopeds are solo vehicles. The provision of larger wheels (between 20" and 30") and its lighter weight make mopeds suitable for operation on different kinds of roads including kutcha roads and cart-tracts. Mopeds have an edge over motorcycle and scooters in that the former of higher power are generally heavy with reduced manoeuvrability in crowded areas while the latter with their small wheels are not suited to operation on bad roads and villages. The most striking advantage of the Moped is its cheapness and economy especially in the present time when the fuel costs are increasing at an alarming rate. When our purpose is commuting between one place to another in cities and towns in reasonably short time at the cheapest possible cost, there is none other than the moped among two wheelers to fill this need. This equally applies to rural areas and villages when the distance travelled is not too long to make the journey tiring and weary.

The moped differs from a mini-motor cycle only in the provision of a peddalling arrangement. It was Soichiro Honda, son of a Japanese blacksmith who created history by producing and successfully marketing small 50 cc mini-motorcycles. Earlier manufacturers in Europe and U.K. were concentrating only on the production of powerful and fast machines intended mainly for enthusiasts. It must also be said with fairness that many of the European fifties were available long before Honda entered the scene and some of them were good products. It was, however, Mr. Honda who 'Conditioned' the man in the street and the motor-cyclist to realise that a 50 cc mini-motorcycle was a practical and reliable proposition. After he made the breakthrough by making the public conscious of the merits and possibilities of the mini-bikes, the market for them enlarged all over the world and they were bought by the millions.

In the context of the work, already done on 50 cc vehicles particularly 'mopeds' the world over and this class of vehicle being immensely suited to take its place as a common man's vehicle in this country, the Government of Tamil Nadu decided that a systematic detailed study should be made of vehicles of 50 cc now in production with a view to evolve a suitable design and take up its production. A special unit called 'TANSI MOPED PROJECT was set up to undertake this work. Before starting work on design it was necessary to formulate guide lines of design for the proposed project.

The objective was to cater to the transportation needs of that sector of the population, who could afford something better than a bicycle but could not afford a scooter. This is a vast section comprising of middle-class white-collared office workers, factory workers, small businessmen and industrialists and small farmers. They have to ride to their offices, factories, farms and business places in a two wheeler. It should be a need-based vehicle to fulfil a clearly defined role. There is no need for a sophisticated vehicle which may be expensive and no need either for a long range vehicle on which one can travel without fatigue distances of 100 kms, and upwards. What is needed is a simple 50 cc vehicle with a pedalling arrangement, capable of being driven around with as little expense as possible. Repairs and maintenance expenditure should be low and the construction should be simple enough to make the machanic's job easy. Negotiating village roads and cart-tracts with as much ease as city roads will be necessary to make it useful to the small farmer. The design of the vehicle should be aimed at satisfying these requirements.

The TANSI MOPED was conceived, designed and produced largely to satisfy the needs of the common man, by meeting the criteria noted above and providing him a quality product that can be depended upon to serve him well. It is our earnest hope that by placing TANSI MOPED in the Indian market, we would not be merely placing one more product for sale, but fulfil the dire need of the common man for a reliable cheap transport. A point worthy of mention is that this moped has been designed and developed with Indian know—how, in conformity with the policy, laid by the Government on the need to develop indigenous technology. Self reliance in technology is the bed rock on which a powerful nation is built and we should spare no efforts in achieving this goal in as many fields as possible.

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IMMORTAL CHARACTERS OF SARAT CHANDRA

By

A. K. JAYARAMAN

Valmiki, the greatest of poets wanted for his epic hero, the sum-total of all the good qualities in man and the personification of Truth itself. Thus Rama became the embodiment of Dharma. This is evident throughout the story.

But Sarat Chandra did not go in search of such perfection. Man is a combination of strength and weakness. His nature cannot be changed even by his creator. Yet with all this human weaknesses man at times achieves the impossible when his course is set in the direction of Truth. It might be but a moment that he reveals himself thus —but in that minute fragment of time he leaves the impress of his action on the patina of time. A character shaped in Truth continues to radiate true light. In the face of this effulgence all the other littlenesses vanish. Time retains that true light and dissolves the rest of the weaknesses in the flood of oblivion.

Sarat Chandra Chatterjee is the foremost among creators of such characters. Barring a few exceptions there has seldom been created man and woman by any other Indian novelist equalling in stature those of Sarat Chandra's. Forty years ago I translated into Tamil Sarat Chandra Babu's "Ram Becomes a Good Boy". To this day I am not able to forget Narayani, Ram's sister-in-law. She resolves to give up her own mother for the sake of Ram, the motherless boy who is her husband's brother. This same Narayani, as Hemangini, surpasses herself in Mej Didi when she sacrifices her own family to save the orphan boy, Kisan. We see in her the archetype Mother Goddess who declares 'all life" is my creation. All Creatures are my children !"

It will not be possible to deal with every character Sarat Babu has created in his numerous novels. Those who have read his works will know how difficult it is even to select a few characters.

Sarat's women hold steadfast to the ideals of Truth and Dharma and offer themselves at the altar of righteousness.

Annadha decides to live with her husband who, after murdering his own sister, embraces another religion. Used to the comforts of a well-to-do family, Annadha undergoes untold suffering with her husband who becomes a snake-charmer. In the end, when the husband dies she dips herself in the Ganga erasing the kumkum on her forehead—recalling in the act memories of epic women like Nalayani, Mandothari. This is but one of Sarat Babu's numerous women who stride the stage of life.

Visweswari, in Pallisamaj (Village Society) unable to bear with the evil doings of her son Veni Goshar, leaves for Varanasi resolving never to set her eyes on him again. She also decides to punish him for his malefactions. "I am leaving. Someday I will die. But you should not light the fire that would consume my body. I cannot attain Heaven if you ignite the Pyre. You are not to approach my bier!" she orders him. This is motherhood that rises against evil. Truth and Dharma conquer the maternal instinct.

There is an old man, Kailash Chandra in Chandranath. He has the detachment of Jatabbartha, is attracted to Sarayu's child, Visu. Chandranath abandons his wife Sarayu and goes away with the child. That is the end for Kailaschandra. We are constantly reminded of Sita, Valmiki and Jadabaratha when we read Chandranath. Chandranath's clerk reminds us of Lakshmana when he takes Sarayu to Varanasi.

In Graha Daha 'The Wrecked House) Achala loses her chastity duped by her husband's friend Suresh. Though Achala was led astray by Suresh, she had a soft corner for him. This fact is delicately brought out by Sarat just as Valmiki characterises Ahalya when she is said to delight in the intimacy of Devendra. The soiled Achala returns to her husband Mahim after the death of

Suresh. Mahim rises in sttature as he magnanimously provides her with means for a living. He controls his anger and sorrow. Unlike Gautama he does not curse her ; nor does he take her back. Mahim is one of Sarat Babu's matchless creations.

Some of Sarat's characters though extremely of good character undergo untold suffering for no fault of theirs. They tell us that this is the nature of wordly life where the strong exploit the weak. Priya Babu in Bamanar Meye (Brahmin Girl), Brindavan is Pandit Mashai (The Teacher) Ramesh in Palli Samaj, the faultless Devadas and numerous others bear testimony to this. Like Rasamani and Kolokar in " Bamanar Meye '; Bhairavachanya in Palli Samaj, Jayalal Banerji in ' Vaikunt's Will ', Taransi and Gopal in Pandit Mashai—all these stand for the type whose one purposeful endeavour in life is doing harm to others ; all of them, unforgettable.

THE AUTHOR

Thiru A. K. Jayaraman, a well-known Tamil writer, is well-versed in 5 languages. He has so far written a number of short stories and produced Radio-plays. He was mainly instrumental in introducing the stories and novels of "Charat Chandra Chatterjee" forty years ago, in Tamil Nadu. In fact, he can claim to have translated almost all the writtings of this famous Bengali writter. Only due to this effort, the name of "A. K. Jayaraman" is almost sononymous with that of "Charat Chandar."

Jayaraman has been the Editor of the Tamil Literary journal,"Kadambari" and "Chinema", a fortnightly. He owns a publishing House "Jyothi Nilayam" and has so far published 250 books, from world literature.

Sarat Chandra's autobiographical novel Sri Kanth, Considered by critics to be his best depicts a boy Indranath. He is Srikanth's friend. He mouths Vedantic profundities. As he carries the corpse of another boy in a boat he replies to Sri Kanth's query. "Srikanth, this boat which is made of wood has no caste. Just like that the human body has no caste the moment life becomes extinct."

Parvathi, Madhavi, Ramaa, Chandramukhi, Rajalakshmi—all these women loved and lost. Parvathi and Devadass are childhood companions. When that companionship grows into love, social status intervenes. Then Chandramukhi enters Devaddas's life and attempts to gain his love. Being a common woman, a prostitute, she does not succeed in her attempt. She makes her life a sacrificial offering to the fire of love..

Dharma, Society and rectitude. The hearts of two invaluable human beings, unable to be controlled by social custom knock against the taboos and perish.

The Savyasaichi in Pather Dhabi (The Right of the Path) and Rajendran in 'Seshar Prasna' are immuned with patriotism. There is no place for compromise in the Savyasachi's revolutionary path. When patriotism is confronted by individual emotions the scales of justice weigh in favour of patriotism. Still when he forgives Appoivan who had betrayed them with the words that "to err is human" and that he too had comitted Himalayan blunders, we are reminded of Gandhiji's words.

The Author in "Memory" goes out for health. He meets with strange people and has strange experiences. When he leaves the place a dog with rabies follows him. When Dileep and his wife followed the cow Nandini in Raghuvamsa, Kalidas said they did so like Smritis following the Vedas. Here, Sarat treats it as if knowledge was following Truth. One is reminded of an incident in Sarat Babu's life. There was a dog which he brought up with kindness. When it died he was griefstricken and buried it with ceremony.

Sarat's Women hold Steadfast to the ideals of Truth and Dharma

In Palli Samaj Ramaa loves Ramesh from childhood. Later she marries someone else but becomes a widow. Hindu widows are not permitted to love or remarriage. Her intense love for Ramesh harms Ramesh. Ultimately she consecrates Ramesh in her heart. Madhavi in Mej Didi is also a widow. She suffers as a result of her infatuation. Rajalakshmi in Srikanth is an amalgam of Parvathi, Madhavi and Chandramukhi. Like Parvathi, she is Srikanth's school mate. Though she does not become a prostitute like Chandramukhi, she is a songstress at the beck and call of rich men and their pleasures. Her love for Srikanth is steadfast. She serves him and lives with him for sometime. But she is not able to cross the frontiers of Dharma. She is prepared to do anything for Srikanth. She cannot however become his wife with shastraic sanction. Her ambition was to live with Srikanth as his wife. Life had dealt her a severe blow. Srikanth was her all ; but not her husband. The way Sarat Babu has delineated Srikanth and Rajalakshmi is a great achievement in the field of the Novel. Desire gets beaten in the face of

In Swargarohana Parva in Mahabharatha, when Pandavas go to Heaven, one by one fall on the way. Only Yudhishtra pushes on. A dog followed him. Same is the case here. In the great pilgrimage only Truth will be company. Only that will lead to self-realisation. Sarat Babu alone is capable of inculcating such a profound philosophical concept with ease in his story.

Sarat's characters are immortal. They reach beyond Time and serve as beacons to the younger writers. His novels are like the eternal waters of Ganga. To dip into them is the best homage we can pay to his memory.

Environmental Hygiene

Thousands of years ago, man living in primitive conditions did not bother about wastes, their disposal or pollution. Man existed only in very small numbers.

Gradually, man became nomadic and later changed his pattern of life to a settled one. This was the origin of villages. These later grew into towns and cities. Man always settled down near river beds. With the increase in population, the problem of disposal of waste also has become important. With the progress of industrialisation and rapid growth of urbanasation this problem has become very acute.

The waste materials should be disposed off quickly, in the interest of the community. With the ever increasing population, the sanitary and hygienic conditions of the locality should be maintained properly. People tend to throw garbage from their houses on to the streets. Garbage attracts numerous insects like flies, mosquitos, cockcoraches. These are the carriers of dreadful diseases like Cholera, Hepatitis etc., Rats and bandicoos cause Plague, rat-bite fever. Stagnant water breeds mosquitos spreading diseases like T.B. Filariasis, Malaria.

Besides garbage and refuse the next big threat to sanitation is defaecation. People are in the habit of using open spaces and even platforms to ease themselves. The urine and faeces thus exposed invite all insects which transmit disease. The flies, cockcroaches and mosquitoes carry bacteria and germs invisible to the eyes on their tiny legs and sit upon the sweet meats exposed by road side vendors, and consumed by the people. Even the sputum and nasal excreta carry T.B. germs.

The garbage, refuse, night soil and stagnant waters emanate offensive odour and pollutes the air and environment. Besides garbage and refuse from homes wastes, refuse orginiate from hotels and marketsplaces and institutions etc. The garbage from these places should be disposed off readily. They should be collected and converted into compost later to be used as manure.

To improve the sanitary conditions of the neighbourhood and keep the environment free of pollution the co-operation of the people should be sought.

The people should have a basic knowledge of hygiene. They should not throw rubbish and refuse on the streets. They should cultivate the habit of dumping the refuse into the dust bin. Open spaces and platforms should not be used for defeacation. These habits will prevent the spread of diseases.

The houses should have proper water closets, latrines which are connected to street sewers. Proper sewerage and drainage systems should be maintained for the disposal of nightsoil.

The maintainance of sewage farms and compost depots will help dispose the garbage and refuse and also help as manure, thus completing the cycle.

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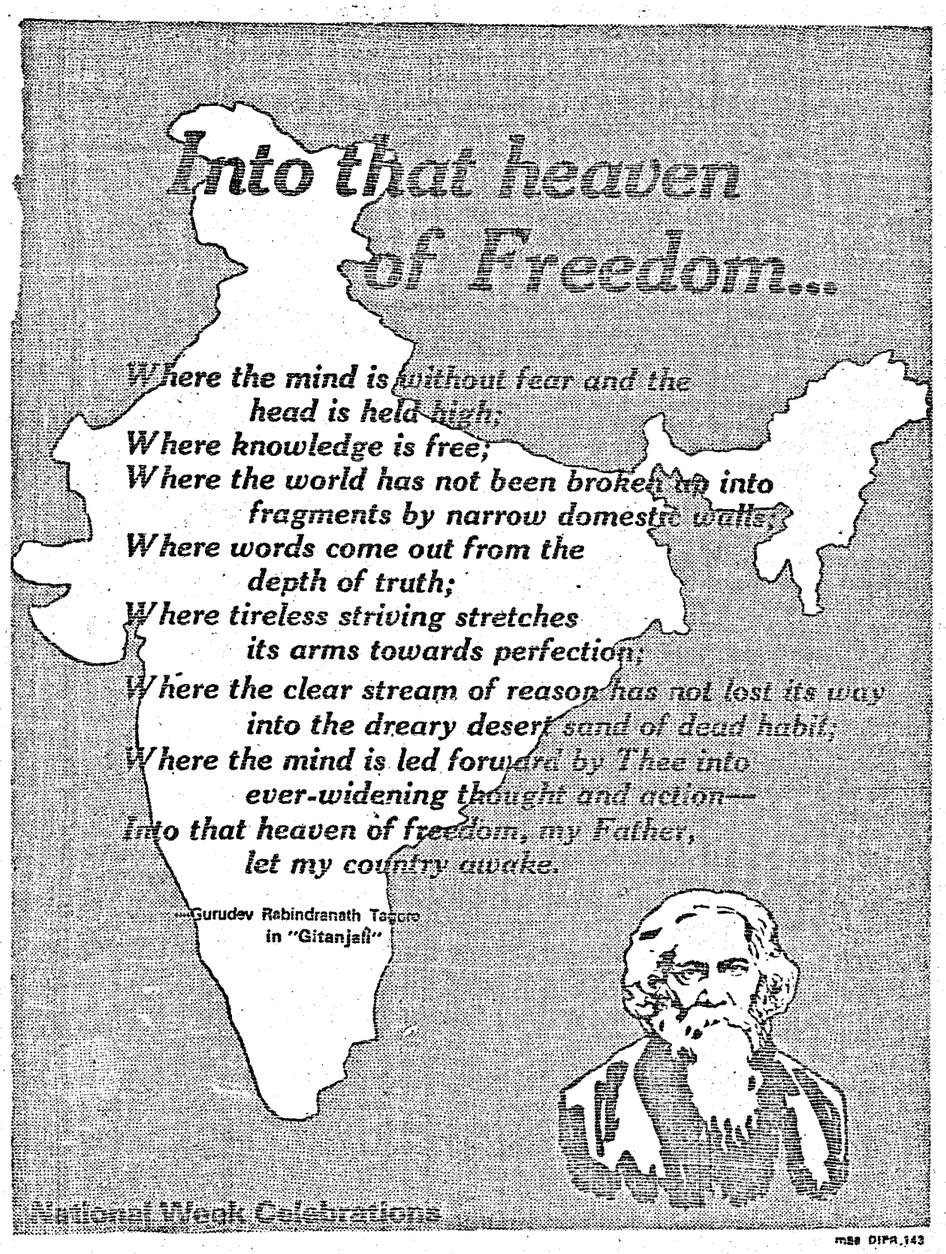

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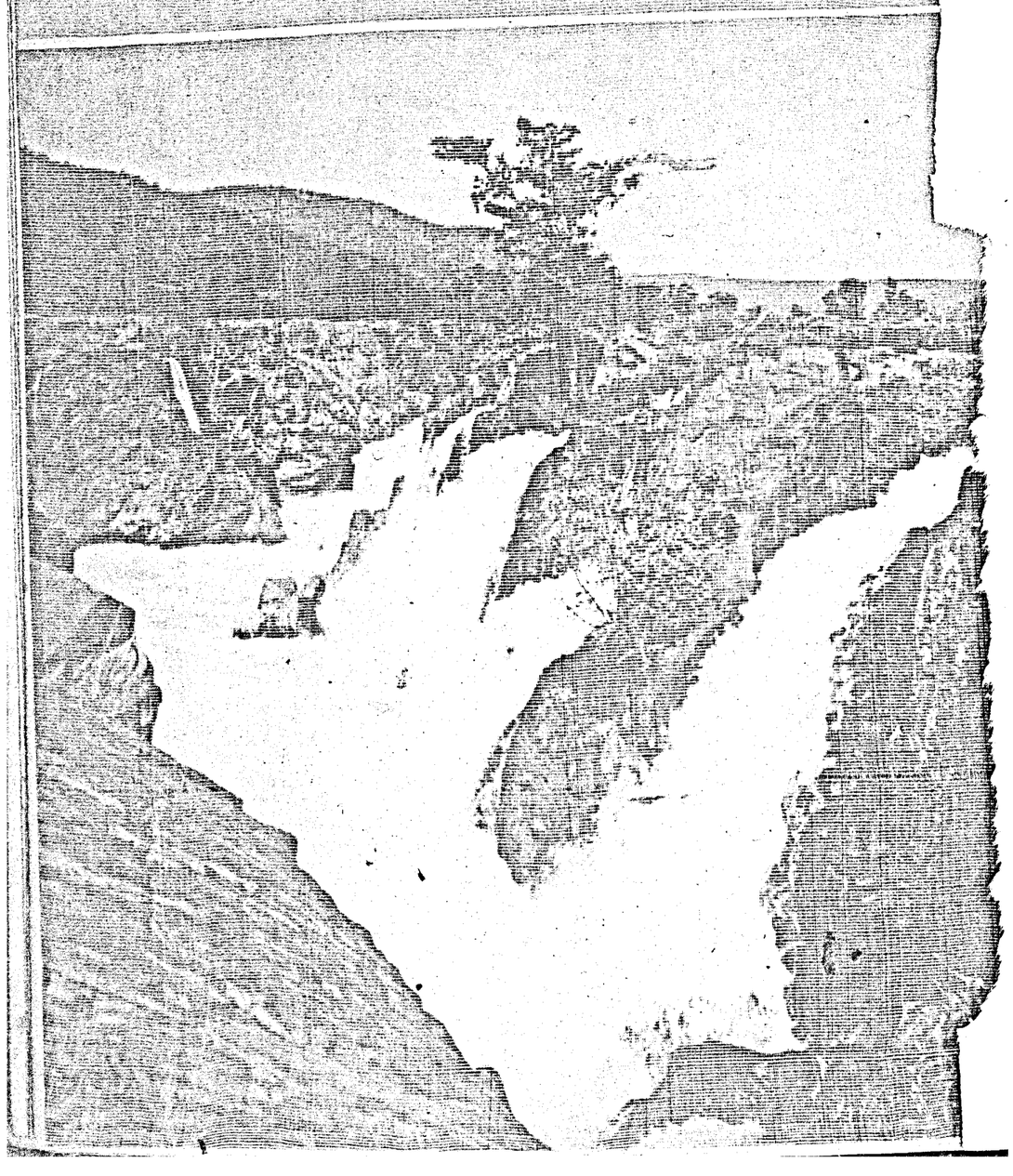
Tamil Arasu



Tamil Arasu

JUNE, 1977 50 Ps.

The Governor of Tamil Nadu Thiru Prabhudas Patwari
Casting his Vote

STRENGTH OF THE TAMIL NADU LEGISLATIVE ASSEMBLY JUNE 1977

	NAME OF THE PARTY	NUMBER OF SEATS
1.	All India Anna Dravida Munnetra Kazhagam	130
2.	Dravida Munnetra Kazhagam	48
3.	Indian National Congress	27
4.	Communist Party of India (Marxist)	12
5.	Janata	10
6.	Communist Party of India	5
7.	Forward Bloc	1
8.	Independent	1
	Total	234

Madras

1. ROYAPURAM

Electorate	1,41,692
Votes Polled	72,868
Valid Votes	72,194
Invalid Votes	674

		Votes Secured
P. Ponnurangam	DMK	21,217
Tmt. V. Ramani Bai	Janata	17,456
K. Salappan	Ind.	582
S. Chittibabu	Ind.	151
P. Thangarajan	INC	6,742
R. Ramanathan	Ind.	172
G. Rajarathinam Nayagar	Ind.	248
M. Raji	AIADMK	22,626

2. HARBOUR

Electorate	1,50,577
Votes Polled	65,557
Valid Votes	64,959
Invalid Votes	598

		Votes Secured
A. Selvaraj	DMK	23,845
K. Arumugam	INC	9,500
V. S. Kannan	Ind.	138
K. P. Shaik Thambi	Janata	13,002
Thanjai Selvam	Ind.	285
T. R. V. Thulasi Doss	Ind.	183
M. M. Peer Mohammed	Ind.	17,862
B. Manak Chand Nahar	Ind.	55
O. A. Varada Desigan	Ind.	89

3. DR. RADHAKRISHNAN NAGAR

Electorate	1,78,751
Votes Polled	80,735
Valid Votes	79,870
Invalid Votes	865

		Votes Secured
Isari Velan	AIADMK	28,415
Tmt. T. N. Anandanayaki	INC	9,875
K. Arumugaswamy	Janata	14,444
R. D. Seethapathy	DMK	26,924
Munusami Naicker	Ind.	89
M. P. Rajendran	Ind.	123

4. PARK TOWN

Electorate	1,45,575
Votes Polled	69,199
Valid Votes	68,426
Invalid Votes	773

		Votes Secured
T. S. Nallathambi	DMK	22,433
M. Arputharaj	Ind.	153
A. Kuppuswamy	INC	7,428
C. Govindarajulu alias Jagajothi	Ind.	393
Tmt. N. G. Bhuvaneswari	Janata	19,273
B. Ramabadran	AIADMK	18,598
S. Lakshmichand Saklesha	Ind.	213

5. PERAMBUR (SC)

Electorate	1,84,688
Votes Polled	80,705
Valid Votes	79,860
Invalid Votes	845

		Votes Secured
S. Balan	DMK	34,134
T. P. Elumalai	Janata	16,675
V. M. Perumal	INC	8,385
T. Raja	AIADMK	20,666

6. PURASAWALKAM

Electorate	2,03,093
Votes Polled	91,943
Valid Votes	91,085
Invalid Votes	858

		Votes Secured
K. Anbazhagan	DMK	41,073
V. Rajasekaran	Ind.	248
T. S. Govindaswamy	Janata	25,094
R. Shanmugam	Ind.	191
K. N. Sampath Naidu	Ind.	86
R. Dakshinamoorthy	CPI	7,206
K. C. G. Vergheese	Ind.	62
P. A. Venkateswarlu	AIADMK	19,745
Jayaram Aya Babu	Ind.	205
H. Stanley	Ind.	265

7. EGMORE (SC)

Electorate	1,41,812
Votes Polled	69,887
Valid Votes	69,294
Invalid Votes	593

		Votes Secured
S. Manimudi	**DMK**	**26,746**
D. Sulochana	Janata	16,739
K. Deivasigamani	AIADMK	19,414
Tmt. D. Yasodha	INC	6,395

8. ANNA NAGAR

Electorate	1,78,266
Votes Polled	86,787
Valid Votes	85,774
Invalid Votes	813

		Votes Secured
M. Karunanidhi	**DMK**	**43,076**
Abdul Azeez	Ind.	86
T. Andiappan	Janata	10,419
G. Krishnamurthy	AIADMK	26,638
Dr. U. N. Bajpai	Ind.	162
K. George Mathew	Ind.	262
R. Jayachandran	INC	5,258
K. Jayaraman	Ind.	73

9. THEAGARAYANAGAR

Electorate	1,80,871
Votes Polled	76,185
Valid Votes	75,522
Invalid Votes	66

		Votes Secured
R. E. Chandran Jeyapal	**DMK**	**23,346**
K. Kalyanasundaram	Ind.	560
K. Krittinamoorthy	Janata	18,020
K. Krishnamurthy	AIADMK	22,316
M. M. Krishnan	Ind.	104
K. M. Subramaniam	Ind.	170
Dr. K. Sowrirajan	Ind.	2,387
A. J. Doss	INC	7,833
K. Raghavan	Ind.	242
C. Velayutham	Ind.	63
D. Jayakanthan	Ind.	481

10. THOUSAND LIGHTS

Electorate	1,67,463
Votes Polled	72,284
Valid Votes	71,635
Invalid Votes	649

		Votes Secured
S. J. Sadiq Pasha	**DMK**	**26,599**
Anbumani	Janata	15,230
Dr. Syed Khaleefathullah	Ind	21,741
P. A. Devivasigamani	INC	7,902
P. Ramakrishnan	Ind.	163

11. CHEPAUK

Electorate	1,23,253
Votes Polled	64,140
Valid Votes	63,602
Invalid Votes	538

		Votes Secured
A. Rahman Khan	**DMK**	**24,425**
S. V. Kandasami	Janata	13,849
N. M. Manivarma	INC	7,532
V. Rajakumar	AIADMK	17,796

12. TRIPLICANE

Electorate	1,32,743
Votes Polled	66,440
Votes Valid	65,856
Invalid Votes	584

		Votes Secured
M. Aranganathan	**DMK**	**23,154**
D. Raghavan	Ind.	247
K. S. Narayanan	Janata	12,401
Tmt. Noorjahan Razak	AIADMK	21,027
S. Veeraraghavan	INC	9,027

13. MYLAPORE

Electorate	1,52,323
Votes Polled	77,911
Valid Votes	77,167
Invalid Votes	744

		Votes Secured
T. K. Kapali	**DMK**	**26,044**
Chinna Annamalai	INC	10,449
Thirunagar Dr. Rathnam	Ind	261
Narasimha Raghavan alias Mylai Narasimhan	AIADMK	19,139
P. M. Rajavelan	Ind.	136
Tmt. Lakshmi Krishnamurthy	Janata	21,138

14. SAIDAPET

Electorate	1,48,319
Votes Polled	74,578
Valid Votes	74,014
Invalid Votes	564

		Votes Secured
D. Purushothaman	**DMK**	**27,160**
N. Kannan	AIADMK	21,882
P. M. Thyagi Kanniah	Ind.	357
M. Nethaji	Janata	16,339
N. Veeran	Ind.	100
K. Jagaveerapandian	INC	8,176

Chengalpattu District

15. GUMMIDIPUNDI

Electorate	1,21,875
Votes Polled	77,810
Valid Votes	76,456
Invalid Votes	1,354

		Votes Secured
S. Munirathinam	**AIADMK**	**32,309**
S. Elumalai	Ind.	1,148
Tmt. G. Kamalambujammal	Janata	21,042
T. Mohamad Ali Khan	Ind.	604
E. Vinayagam	Ind.	1,436
K. Venkatasubbaraju	INC	7,782
K. Venu	DMK	12,135

16. PONNERI (SC)

Electorate	1,34,125
Votes Polled	75,794
Valid Votes	74,561
Invalid Votes	1,233

		Votes Secured
S. M. Dorairaj	**AIADMK**	**31,796**
K. N. Arumugam	INC	6,422
A. P. Elumalai	Ind.	564
G. Chinnaraj	Ind.	1,085
V. Nargunam	Janata	14,170
G. Vetriveeran	DMK	20,524

17. THIRUVOTTIYUR

Electorate	1,48,299
Votes Polled	85,876
Valid Votes	84,567
Invalid Votes	1,109

		Votes Secured
P. Sigamony	**AIADMK**	**28,458**
P. Chinnaswamy	Ind.	224
M. V. Narayanaswamy	DMK	23,995
C. K. Madhavan	Ind.	16,888
B. Munusamy Naidu	Janata	16,800
P. John	Ind.	202

18. VILLIVAKKAM

Electorate	1,65,872
Votes Polled	92,190
Valid Votes	90,891
Invalid Votes	1,299

		Votes Secured
K. Suppu	**DMK**	**37,327**
O. R. Arangan	Ind.	156
R. Sarweswara Rao	AIADMK	29,429
M. Senthil Velayutham	Ind.	445
V. R. Bhagavan	INC	6,477
M. G. Pandurangan	Janata	16,518
N. Balasubramaniam	Ind.	155
V. Muthuvel	Ind.	110
M. Janardhanam	Ind.	294

19. ALANDUR

Electorate	1,54,152
Votes Polled	83,605
Valid Votes	82,665
Invalid Votes	940

		Votes Secured
Abdul Razack	**AIADMK**	**30,961**
K. Abiraham	DMK	27,112
V. C. Elumalai	Ind.	209
K. Narayan Rao	Janata	17,042
A. Balasubramaniam	Ind.	223
Mervin	Ind.	185
A. Ranganathan	INC	6,608
R. Veerapandian	Ind.	145
P. V. Vaidyalingam	Ind.	180

20. TAMBARAM

Electorate	1,57,010
Votes Pollled	93,097
Valid Votes	91,986
Invalid Votes	1,111

		Votes Secured
Munu Adhi	**AIADMK**	**32,394**
S. Kannan	Janata	17,845
R. Chandrasekaran	Ind.	678
Pammal N. Nallathambi	DMK	31,968
N. Murugesan	INC	9,101

21. TIRUPPORUR (SC)

Electorate	97,060
Votes Polled	56,642
Valid Votes	55,682
Invalid votes	960

		Votes Secured
G. Chockalingam	**DMK**	**24,932**
T. Radha	AIADMK	22,831
S. G. Kanniappan	Ind.	159
B. Sahadevan	Ind.	466
R. Dakshinamoorthy	Janata	5,910
G. Naghamani	Ind.	712
N. Jayachandran	Ind.	672

22. CHENGALPATTU

Electorate	1,10,573
Votes Polled	68,431
Valid votes	67,377
Invalid votes	1,054

		Votes Secured
G. Jagadeesan	**AIADMK**	**29,309**
S. A. Kali Nayager	Ind.	393
P. Dhanbal Nayager	INC	4,275
N. E. Mehboobasha	Ind.	611
P. S. Ragupathy	Janata	6,942
V. Rudrakoti	DMK	25,436
M. Vedachalam	Ind.	504

23. MADHURANTHAKAM

Electorate	1,04,339
Votes Polled	75,967
Valid Votes	74,779
Invalid Votes	1,188

		Votes Secured
C. Arumugam	DMK	26,977
S. D. Ugam Chand	INC	19,645
D. Kanaka Sabapathi	Ind.	968
O. N. Duraibaboo	Janata	8,019
V. T. R. Veerappan	Ind.	736
V. Venka	AIADMK	18,434

24. ACHARAPAKKAM

Electorate	98,677
Votes Polled	63,099
Valid Votes	61,952
Invalid Votes	1,147

		Votes Secured
Ethraj	AIADMK	26,756
T. Ayyavoo	Janata	4,871
R. Kuppuswami	INC	6,366
N. Muthuvel	DMK	23,959

25. UTHIRAMERUR

Electorate	1,16,733
Votes Polled	78,553
Valid votes	77,457
Invalid votes	1,096

		Votes secured
S. Pakkur Subramanyan	AIADMK	34,877
K. M. Rajagopal	DMK	22,294
K. N. Kuppuswamy Gounder	Ind.	1,998
M. P. Radhakrishnan	Janata	8,641
C. Ramaswamy	INC	9,647

26. KANCHEEPURAM

Electorate	1,23,336
Votes Polled	89,309
Valid votes	88,312
Invalid votes	997

		Votes Secured
K. Balaji	AIADMK	31,327
C. R. Umapathy	INC	8,346
N. Krishnan	Ind.	2,153
M. Shanmugam	Ind.	250
V. Sambandan	DMK	29,380
E. Narendran	Janata	16,623
V. T. R. Veerappan	Ind.	233

27. SRIPERUMBUDUR (SC)

Electorate	1,08,219
Votes Polled	68,838
Valid Votes	67,538
Invalid Votes	1,300

		Votes Secured
N. Krishnan	AIADMK	29,038
P. Appavoo	INC	8,705
T. S. Lakshmanan	DMK	20,901
V. Emperuman	Janata	7,953
G. B. Govindan	Ind.	931

28. POONAMALEE

Electorate	1,43,260
Votes polled	74,148
Valid votes	72,774
Invalid votes	1,374

		Votes Secured
D. Irajarathanam	DMK	26,552
ERA. Kulasekaran	AIADMK	21,659
A. Pal Pandyan	INC	7,357
J. Madan Raj	Janata	16,660
C. Ramamurthy	Ind.	351
C. Venkataraman	Ind.	195

29. TIRUVALLUR

Electorate	1,09,003
Votes Polled	68,704
Valid Votes	67,589
Invalid Votes	1,115

		Votes Secured
S. Pattabiraman	AIADMK	30,670
D. Ethirajan	Ind.	2,792
P. Gopal	Ind.	651
T. Gopalan	INC	3,165
T. K. Ponnuvelu	DMK	7,943
Munirathinam Naidu	Janata	22,368

30. TIRUTTANI

Electorate	1,02,975
Votes Polled	67,649
Valid Votes	66,547
Invalid Votes	1,098

		Votes Secured
R. Shanmugam	AIADMK	29,070
A. B. Ramachandiran	DMK	18,754
G. Subbarayalu	Janata	13,540
C. Dharmalinga Mudaliar	Ind.	351
Narayanandu *alias* Narayanadoss	Ind.	1,788
C. Radhakrishna Reddy	Ind.	808
D. S. Varadaraja	INC	2,236

31. PALLIPET

Electorate	1,10,571
Votes Polled	70,972
Valid votes	69,830
Invalid votes	1,142

		Votes Secured
Ekambara Reddy	INC	23,480
Dr. A. Aswatha	Janata	7,195
N. K. S. Ganaesan	DMK	17,252
K. M. Balraman	AIADMK	19,194
V. Munusamy	Ind.	2,449
C. Rajagopal	Ind.	260

North Arcot District

32. ARKONAM (SC)

Electorate	1,19,208
Votes Polled	74,384
Valid votes	73,525
Invalid votes	859

		Votes Secured
V. K. Raju	AIADMK	24,630
A. Kannayiram	DMK	17,041
K. Subramaniyan	Ind.	1,116
V. Balraj	Ind.	1,342
A. Jayaraman	Janata	15,503
G. Jeyaraj	INC	13,893

33. SHOLINGHUR

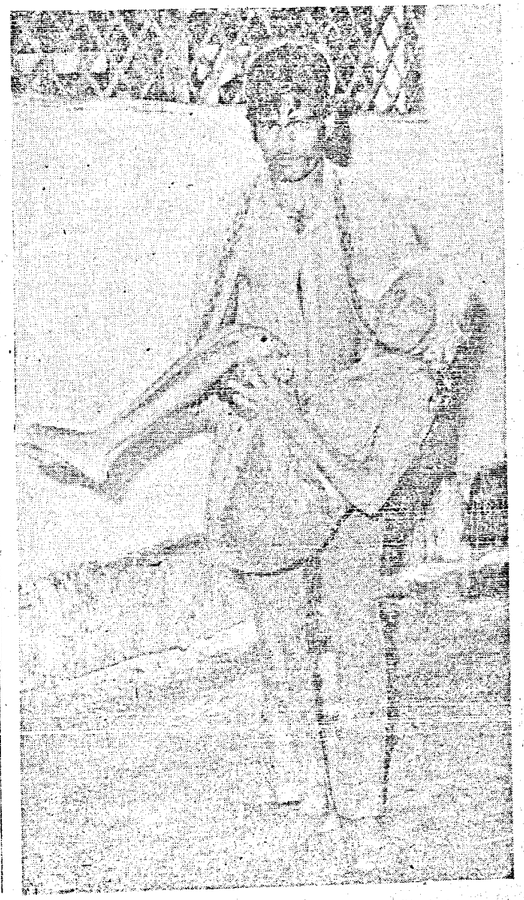
Electorate	1,12,141
Votes Polled	68,973
Valid Votes	67,995
Invalid Votes	978

		Votes Secured
S. J. Ramaswamy	AIADMK	25,997
C. Rajendran	INC	9,393
A. Kanthappan	Ind.	919
S. S. Sundararaman	Janata	9,266
S. Thyagarajan	Ind.	1,420
G. Munisamy	Ind.	652
K. Murthi	DMK	20,348

34. RANIPET

Electorate	1,18,555
Votes Polled	74,645
Valid Votes	73,377
Invalid Votes	1,268

		Votes Secured
Duraimurugan	DMK	31,904
Abdul Gaffoor Sahib	Janata	7,584
D. Arumugham	Ind.	862
A. Sampath Narasimhan	INC	14,838
M. A. K. Siddiqui	Ind.	1,253
S. S. Sundararaman	Ind.	257
K. A. Wahab	Ind.	16,643



35. ARCOT

Electorate	1,08,773
Votes Polled	70,141
Valid Votes	69,203
Invalid Votes	938

		Votes Secured
K. J. Uyyakondan	AIADMK	27,193
N. R. Ethirajulu	Janata	16,614
M. Parasuraman	Ind.	2,702
K. R. Munirathnam	INC	6,401
P. Jayavelu	DMK	16,293

36. KATPADI

Electorate	1,13,689
Votes Polled	71,307
Valid Votes	70,389
Invalid Votes	918

		Votes Secured
M. A. Jayavelu	AIADMK	26,873
K. Govindaraji	Ind.	546
D. Sambasivam	DMK	22,183
P. Natarajan	Ind.	1,112
K. P. Navakoti	Janata	15,683
V. N. Rathinam	INC	3,114
Ramasawmy *alias* Shozhan	Ind.	878

37. GUDIYATHAM

Electorate	1,07,905
Votes Polled	70,693
Valid Votes	69,692
Invalid Votes	1,001

		Votes Secured
V. K. Kothandaraman	CPM	20,590
P. S. Ganesan	Ind.	636
R. Govindaswamy	INC	15,753
Sundararajulu Naidu	Janata	18,046
K. Munasamy Chudary	Ind.	1,564
K. G. Muniyappan	DMK	12,224
D. Ranganathan	Ind.	879

38. PERNAMBUT (SC)

Electorate	1,03,535
Votes Polled	67,013
Valid Votes	65,939
Invalid Votes	1,074

		Votes Secured
I. Tamilarasan	AIADMK	24,536
P. Rajagopal	Janata	20,873
R. P. Ulaganambi	INC	3,628
V. Govindan	DMK	15,862
K. Saman	Ind.	1,040

39. VANIYAMBADI

Electorate	1,09,540
Votes Polled	62,983
Valid Votes	62,108
Invalid Votes	875

		Votes Secured
M. Abdul Latheef	Ind.	26,620
Abdul Wahid	Janata	10,323
N. K. Arumugam	Ind.	1,136
R. Sampanghi	DMK	17,886
P. Sayeed Ahmed	Ind.	357
K. MD. Musatafa	Ind.	88
A. Venkatesan	INC	5,698

40. NATRAMPALLI

Electorate	1,17,713
Votes Polled	70,778
Valid Votes	69,800
Invalid Votes	978

		Votes Secured
T. Anbazhagan	AIADMK	31,015
T. M. Kandasamy Gounder	INC	6,161
K. L. Karibeera Gounder	Ind.	1,432
N. Krishnan	Ind.	788
S. S. Singaravelu	Ind.	456
M. Marappan	DMK	14,960
M. Ramasami	Ind.	694
R. V. Lakshmipathy Gounder	Janata	14,994

41. TIRUPPATTUR

Electorate	1,18,361
Votes Polled	73,877
Valid Votes	72,761
Invalid Votes	1,116

		Votes Secrued
B. Sundaram	DMK	19,855
T. C. Thangaraj	RPI	1,641
T. R. Thatha Chettiar	INC	16,225
N. Damodaran	Janata	13,786
C. Raji	Ind.	2,194
R. Janakiraman	Ind.	203
K. Jayaraman	AIADMK	18,857

42. CHENGAM (SC)

Electorate	96,111
Votes Polled	49,928
Valid Votes	49,158
Invalid Votes	770

		Votes Secured
T. Samikannu	AIADMK	22,789
K. V. Allimuthu	Ind.	111
P. Anbalagan	Janata	8,094
P. Dhanapal	Ind.	1,478
N. Poosanar	DMK	11,877
D. Raja	CPI	4,492
A. (Thirumathi) Jaya Armugam	Ind.	317

43. THANDARAMBATTU

Electorate	1,07,350
Votes Polled	76,787
Valid Votes	75,263
Invalid Votes	1,524

		Votes Secured
D. Venugopal	DMK	28,605
A. Ramalingam	AIADMK	21,661
M. A. Ponnusamy Reddy	INC	18,933
K. Munusamy Kandar	Janata	6,064

44. TIRUVANNAMALAI

Electorate	1,17,397
Votes Polled	85,625
Valid Votes	84,248
Invalid Votes	1,381

		Votes Secured
P. U. Shanmugam	DMK	27,148
A. R. Sugunapandian	Ind.	2,100
P. Thandavarayan	Janata	8,689
D. Pattuswamy	INC	25,786
K. R. Venkatesan	AIADMK	20,525

45. KALASAPAKKAM

Electorate	1,14,750
Votes Polled	77,184
Valid Votes	75,851
Invalid Votes	1,333

		Votes Secured
P. S. Tiruvengadam	DMK	26,841
S. Sundaresa Udaiyar	AIADMK	25,298
A. Mannankatti Kandar	INC	16,893
N. C. Marimuthu	Ind.	1,228
G. Rajakumar	Janata	5,591

46. POLUR

Electorate	1,07,103
Votes Polled	66,649
Valid votes	65,135
Invalid Votes	1,514

		Votes Secured
K. J. Subramanian	AIADMK	24,631
S. M. Annamalai	INC	6,373
T. N. Subramanian	Janata	11,279
S. Murugaian	DMK	21,902
A. P. Ramachandran	Ind.	950

47. ANAICUT

Electorate	1,10,756
Votes Polled	68,272
Valid Votes	67,104
Invalid Votes	1,168

		Votes Secured
R. Margabandhu	AIADMK	32,731
A. M. Ramalingam	DMK	13,985
S. Thangavelu	Ind.	324
M. Murthy	Ind.	1,091
P. M. Vasudeva Reddiar	Janata	14,146
T. K. Venkatesan	INC	4,427
C. Jayabalan	Ind.	400

48. VELLORE

Electorate	1,30,154
Votes Polled	88,017
Valid Votes	87,258
Invalid Votes	759

		Votes Secured
A. K. Ranganathan	AIADMK	26,590
Y. Daniel Captain	Ind.	268
V. Dhakshinamoorthy	INC	12,043
M. S. Taj Mohamed	Ind.	306
V. M. Devaraj	DMK	21,229
G. Moorthy	Ind.	1,064
A. K. Lalalajapathy	Janata	25,758

49. ARNI

Electorate	1,11,994
Votes Polled	83,198
Valid Votes	81,799
Invalid Votes	1,399

		Votes Secured
V. Arjunan	AIADMK	33,925
M. A. Khadar	Ind.	892
R. Shanmugam	INC	2,831
E. Selvarasu	DMK	24,703
M. Thellur Dharmarasan	Janata	19,448

50. CHEYYAR

Electorate	1,09,131
Votes Polled	78,148
Valid Votes	76,930
Invalid Votes	1,218

		Votes Secured
Pulavar Govindan	DMK	33,338
M. Krishnaswamy	INC	5,992
K. Shanmugasundaram	AIADMK	21,419
P. L. Chandran	Ind.	234
Narayanan	Ind.	502
M. Boopalan	Janata	14,217
C. M. Perumalsamy	Ind.	1,174

51. WANDIWASH (SC)

Electorate	1,19,981
Votes Polled	69,852
Valid Votes	68,862
Invalid Votes	990

		Votes Secured
P. Munusamy	AIADMK	28,306
A. Arumugam	RPI	820
C. Kanniappan	DMK	26,476
A. Kumarasamy	Janata	10,034
M. Saminathan	Ind.	2,071
V. Rajagopal	Ind.	183
A. Manogaran	Ind.	290
S. Muthulingam	Ind.	682

52. PERANAMALLUR

Electorate	1,17,644
Votes Polled	69,817
Valid Votes	68,840
Invalid Votes	977

		Votes Secured
P. Chandran	AIADMK	27,860
P. Ettiappan	DMK	19,822
D. Krishnasamy Naidu	INC	7,495
N. Subramanian	Janata	11,685
C. S. Padmanabhan	Ind.	165
A. John Xavier	Ind.	1,813

South Arcot District

53. MELMALAYANUR

Electorate	1,12,185
Votes Polled	72,340
Valid Votes	71,092
Invalid Votes	1,248

		Votes Secured
P. Thangavelu Gounder	AIADMK	27,673
N. V. Ayyakannu Kounder	Janata	6,543
M. A. Kuthan	Ind.	5,327
H. Kothandan	Ind.	988
K. Gopala Gounder	Ind.	12,064
A. Sadagopan	Ind.	1,755
R. Murugesan	CPI	1,828
N. Vinayagam	Ind.	804
S. Vijayaraghavan	DMK	14,110

54. GINGEE

Electorate	1,14,821
Votes Polled	75,918
Valid votes	74,644
Invalid votes	1,274

		Votes Secured
N. Ramachandran	DMK	26,971
G. Krishnasamy	AIADMK	23,381
S.P. Kesavar	Ind.	1,869
C. Subramania Kounder	Janata	6,922
S. Basheer	Ind.	574
V. Munusamy	INC	14,186
K. Loganathan	Ind.	741

55. TINDIVANAM

Electorate	1,01,610
Votes Polled	65,134
Valid Votes	64,261
Invalid Votes	873

		Votes Secured
T. R. Rajaram	INC	18,990
P. M. Ranganathan	Ind.	1,046
G. Rajaram	AIADMK	15,117
R. Radhakrishnan	Janata	17,150
G. Venkataraman	DMK	11,958

56. VANUR (SC)

Electorate	1,10,777
Votes Polled	63,965
Valid Votes	62,817
Invalid votes	1,148

		Votes Secured
M. Paramasivam	DMK	21,557
Arulvaratharajan	Ind.	332
A. Erusan	Ind.	861
S. Gandhidass	Inc.	12,621
A. Boopalan	AIADMK	19,584
A. Perumal	Janata	7,862

57. KANDAMANGALAM (SC)

Electorate	1,15,036
Votes Polled	66,846
Valid votes	65,619
Invalid votes	1,227

		Votes Secured
M. Kannan	AIADMK	25,403
S. Alaguvelu	DMK	23,349
M. Raman	Ind.	1,381
V. Dasarathan	Janata	10,006
K. Munian	Ind.	1,769
P. Ramasamy	CPI	3,711

58. VILLUPURAM

Electorate	1,17,651
Votes Polled	75,029
Valid votes	73,980
Invalid votes	1,049

		Votes Secured
P. Krishnan	AIADMK	27,882
L. Adhikesavalu Naidu	Janata	12,161
T. Thirumal	INC	8,754
K. P. Palaniappan	DMK	25,183

59. MUGAIYUR

Electorate	1,08,393
Votes Polled	70,314
Valid votes	68,933
Invalid votes	1,381

		Votes Secured
G. Ragothaman	AIADMK	31,531
I. Elumalai	Ind.	834
P. G. Krishnaswamy	Janata	12,012
M. Shanmugam	DMK	18,248
S. Pandurangan	Ind.	740
T. S. Md. Usman	Ind.	598
G. Janakiraman	INC	4,970

60. THIRUNAVALUR

Electorate	1,01,702
Votes Polled	70,451
Valid votes	68,897
Invalid votes	1,554

		Votes secured
L. Arumugam	AIADMK	24,087
K. Ramamoorthy	INC	12,257
C. Lakshminarayanan	Janata	7,479
A. Yesadian	Ind.	3,862
C. Krishnasamy	Ind.	761
S. A. Gopalakrishnan	Ind.	714
V. Subramanian	DMK	19,132
E. Narasimhan Naidu	Ind.	248
A. Veeraswamy	Ind.	357

61. ULUNDURPET (SC)

Electorate	1,25,137
Votes Polled	72,768
Valid Votes	71,058
Invalid Votes	1,710

75

		Votes Secured
V. Thulukkanam	DMK	26,788
S. Anbiah	Ind.	407
L. Elayaperumal	INC	17,341
M. Kandasamy	Ind.	1,668
(Thirumathi)Sathiavanimuthu	AIADMK	19,211
S. Thangavel	Ind.	336
P. Raju	Ind.	1,805
M. Jayaraman	Janata	3,502

62. NELLIKUPPAM

Electorate	1,06,084
Votes Polled	71,711
Valid Votes	70,464
Invalid Votes	1,247

		Votes Secured
C. Govindarajan	CPM	23,077
K. G. Kandhan	INC	9,444
S. L. Krishnamurthi	Janata	14,217
V. Krishnamoorthi	DMK	18,260
N. V. Jayaseelan	RPI	5,466

63. CUDDALORE

Electorate	1,26,391
Votes Polled	77,455
Valid Votes	76,269
Invalid Votes	1,186

		Votes Secured
K. Abdul Latheef	AIADMK	24,107
R. Govindarajan Babu	DMK	22,280
N. Natarajan	Ind.	526
T. R. Narasimhan	Ind.	863
P. R. S. Venkatesan	Janata	20,106
M. Venkatesan	INC	8,387

64. PANRUTI

Electorate	1,00,977
Votes Polled	74,255
Valid Votes	73,142
Invalid Votes	1,113

		Votes Secured
S. Ramachandran	AIADMK	43,330
S. Thiyagarajan	INC	2,139
K. Nandagopalakrishnan	Janata	27,673

65. KURINJIPADI

Electorate	1,11,846
Votes Polled	69,278
Valid Votes	67,898
Invalid Votes	1,380

		Votes Secured
M. Selvaraj	DMK	19,523
P. Radhakrishnan	INC	14,663
S. Ramasamy	Ind.	1,818
K. Dhanagopal	Ind.	1,690
S. Natarajan	CPM	16,997
P. M. Balasubramanian	Janata	13,080
Muthupattusamy	Ind.	127

66. BHUVANAGIRI

Electorate	1,14,210
Votes Polled	77,698
Valid Votes	76,369
Invalid Votes	1,329

		Votes Secured
V. Raghuraman	DMK	21,638
M. A. Abusali	Ind.	14,870
P. Arumugam	Ind.	1,390
V. Radhakrishnan	Ind.	3,613
P. Balraj	INC	17,282
T. M. D. Mahalingam	Janata	17,350
C. Ramalingam	Ind.	226

67. KATTUMANNARKOIL (SC)

Electorate	1,04,851
Votes polled	70,200
Valid votes	69,362
Invalid votes	838

		Votes Secured
E. Ramalingam	DMK	26,038
Ayyankutti	Janata	3,736
S. Samithurai	Ind.	489
S. Sivasubramanian	INC	18,158
T. Thiyagarajan	Ind.	595
G. Pichamuthu	Ind.	355
R. Rajan	AIADMK	19,991

68. CHIDAMBARAM

Electorate	1,09,561
Votes Polled	74,156
Valid Votes	73,226
Invalid Votes	930

		Votes Secured
Kaliayamurthy Durai	DMK	22,917
B. Umapathy	INC	15,644
R. Kannusamy	Ind.	406
M. Sanjeevi	Ind.	1,422
A. Sambandam	Janata	10,960
K. Dharuman	Ind.	474
Muthu Govindarajan	AIADMK	19,586
N. Rathinasamy	Ind.	1,817

69. VIRIDHACHALAM

Electorate	1,24,327
Votes Polled	77,427
Valid Votes	76,225
Invalid Votes	1,202

		Votes Secured
Ramanathan	AIADMK	30,178
Ramalingam	DMK	18,071
Kantharajan	Ind.	1,208
Sivaprakasam	INC	10,028
Thambusamy	Ind.	1,272
Rajavanniyan	Ind.	1,289
Vaikuntham	Janata	10,650
Vaithiyanathan	Ind.	3,529

70. MANGALORE (SC)

Electorate	1,25,283
Votes Polled	77,212
Valid Votes	75,941
Invalid Votes	1,271

		Votes Secured
M. Perisamy	AIADMK	30,616
R. Elangovan	Janata	6,610
A. Krishnan	Ind.	1,194
N. Sarguru Natarajan	Ind.	3,043
V. Ponnusamy	DMK	17,361
P. Vedamanickam	INC	17,117

71. RISHIVANDIAM

Electorate	1,01,394
Votes Polled	68,308
Valid Votes	66,448
Invalid Votes	1,860

		Votes Secured
M. Sundaram	INC	25,530
T. Abdul Vahab	Ind.	685
J. V. Keerthy	DMK	5,323
D. Govindarajan	Ind.	814
M. Deiveegan	AIADMK	21,478
Ramasamy	Ind.	159
E. Jagannathan	Ind.	282
K. Jayachandran	Janata	12,177

72. CHINNASALEM

Electorate	1,11,367
Votes Polled	69,581
Valid Votes	68,321
Invalid Votes	1,260

		Votes Secured
M. Subramanian	AIADMK	24,304
P. R. Annamalai	Ind.	529
P. Arumugam	Ind.	178
M. Subbarayan	Ind.	194
S. P. Pachayappan	DMK	21,081
L. P. Ponnuvel	INC	9,397
Thirumathi V. Jayalakshmi	Janata	12,638

73. SANKARAPURAM

Electorate	1,06,711
Votes Polled	70,017
Valid Votes	68,664
Invalid Votes	1,353

		Votes Secured
Durai Muthusamy	INC	21,593
A. Iramasamy	Janata	8,106
M. Mohammed Haneef	AIADMK	18,885
M. Muthiayan	DMK	16,650
R. Lakshmanan	Ind.	3,430

Dharmapuri District

74. HOSUR

Electorate	92,284
Votes Polled	54,411
Valid votes	53,025
Invalid Votes	1,386

		Votes Secured
N. Ramachandra Reddy	INC	30,818
K. S. Kodandaramiah	Janata	13,653
A. Mohamed Salasa	DMK	3,573
M. Ramasamy	AIADMK	4,981

75. THALLI

Electorate	99,012
Votes Polled	62,100
Valid Votes	60,789
Invalid Votes	1,311

		Votes Secured
D. R. Rajaram Naidu	INC	18,559
Ramasamy Then	DMK	8,567
D. S. Rizvan	AIADMK	9,010
D. C. Vijayendriya	Ind.	11,256
D. Venkatasamy	Janata	13,388

76. KAVERIPATTINAM

Electorate	1,00,732
Votes Polled	65,622
Valid Votes	64,481
Invalid Votes	1,141

		Votes Secured
Dr. K. Samarasam	AIADMK	25,770
E. Pattabi Naidu	Janata	19,312
P. K. Pattabiram	CPI	8,374
P. V. S. Venkatesan	DMK	11,025

77. KRISHNAGIRI

Electorate	93,875
Votes Polled	54,146
Valid Votes	52,600
Invalid Votes	1,546

		Votes Secured
K. R. Chinnarasu	AIADMK	17,178
M. N. Karamathulla	DMK	9,429
T. M. Thiruppathi	Janata	12,466
C. Munusamy	Ind.	1,860
P. M. Muruswamy Gounder	INC	11,667

78. BARGUR

Electorate	98,061
Votes Polled	59,862
Valid Votes	58,867
Invalid Votes	995

		Votes Secured
H. G. Arumugam	AIADMK	28,812
Dr. T. Chinnaraju	INC	8,599
C. Sugadev	Janata	6,036
V. C. Thimmarayan	DMK	15,420

79. HARUR (SC)

Electorate	1,12,102
Votes Polled	58,432
Valid Votes	57,770
Invalid Votes	662

		Votes Secured
M. Annamalai	CPM	20,042
K. S. Raman	INC	12,032
R. Sivaraj	DMK	11,096
K. Surattaiyan	Janata	12,472
K. Theethan	Ind.	508
P. Meiyazhakan	RPI	1,622

80. MORAPPUR

Electorate	95,833
Votes Polled	67,155
Valid Votes	66,429
Invalid Votes	726

		Votes Secured
N. Kuppusamy	AIADMK	22,886
T. V. Anganna Chettiar	Ind.	108
K. Arunachalam	Janata	13,770
P. P. Rasu	CPI	4,616
M. G. Sekar	Ind.	139
K. Natarasan	RPI	3,640
R. P. Murugan	DMK	21,270

81. PALACODE

Electorate	1,02,568
Votes Polled	67,865
Valid Votes	66,797
Invalid Votes	1,068

		Votes Secured
D. M. Krishnan	AIADMK	21,959
K. T. Govindan	Janata	17,701
K. M. Swaminathan	Ind.	1,364
M. D. Narayanaswamy	INC	8,266
M. V. Munuswamy Gounder	DMK	17,507

82. DHARMAPURI

Electorate	1,02,768
Votes Polled	64,098
Valid Votes	63,216
Invalid Votes	882

		Votes Secured
P. K. C. Muthuswamy	JANATA	26,742
T. V. Agganna Chettiar	Ind.	177
S. Abdul Vakith	Ind.	667
D. S. Shanmugam	AIADMK	21,556
K. K. Subramani	Ind.	1,206
K. Periasamy	DMK	7,721
D. K. Munusamy	INC	5,147

83. PENNAGARAM

Electorate	1,00,327
Votes Polled	55,524
Valid Votes	54,756
Invalid Votes	768

		Votes Secured
K. Appunu Gounder	JANATA	17,591
Krishnan	AIADMK	16,932
B. K. Narasimhan	INC	11,086
K. Marimuthu	DMK	8,487
K. M. Muniappan	Ind.	660

Salem District

84. METTUR

Electorate	1,23,548
Votes Polled	71,403
Valid Votes	70,436
Invalid Votes	967

		Votes Secured
K. P. Nachimuthu Gounder	AIADMK	30,762
N. B. Abdul Azeez	Ind.	332
L. K. Ramu	DMK	10,478
T. Obuli	Ind.	910
P. Natesan	INC	13,976
M. Madalaimuthu	Ind.	530
G. A. Vadivelu	Janata.	13,448

85. TARAMANGALAM

Electorate	1,13,229
Votes Polled	70,477
Valid votes	69,041
Invalid votes	1,436

		Votes Secured
R. Narayanan	INC	23,882
K. Rajagppal	Ind.	935
K. R. Govindan	DMK	9,020
S. Semmalai	AIADMK	23,863
N. Perumal Gounder	Ind.	917
T. M. Ramasamy Gounder	Janata	10,073
P. M. Vadivel Gounder	Ind.	351

86. OMALUR

Electorate	1,02,047
Votes Polled	62,697
Valid Votes	61,699
Invalid Votes	998

		Votes Secured
M. Sivaperumal	AIADMK	26,342
S. Andiyappan	Ind.	335
O. K. Karunanidhi	Ind.	1,796
S. Kuppuswami	CPI	8,263
M. Govindan	Janata	13,824
C. Marimuthu	DMK	11,139

87. YERCAUD (ST)

Electorate	91,099
Votes Polled	48,615
Valid Votes	47,810
Invalid Votes	805

		Votes Secured
R. Kaliappan	AIADMK	20,219
P. K. Chinnasamy	INC	8,302
V. Chinnasamy	DMK	13,444
M. A. Mani	Janata	5,845

88. SELEM I

Electorate	1,46,078
Votes Polled	91,423
Valid Votes	90,844
Invalid Votes	579

		Votes Secured
S. V. Varadharajan	AIADMK	34,705
(Thirumathi) Thailammal	Ind.	71
K. Madavan	INC	8,135
S. S. Mahadeva Mudaliar	Janata	26,046
P. S. Manickam	DMK	21,094
S. K. Muthiah	Ind.	249
P. S. Venugopal	Ind.	261
S. Jotheeswaran	Ind.	281

89. SALEM II

Electorate	1,37,557
Votes Polled	72,774
Valid votes	72,063
Invalid votes	711

		Votes Secured
M. Arumugam	JANATA	22,636
K. S. Arthanari	CPM	19,173
K. V. Ramasamy	CPI	9,731
K. A. Thangavel	DMK	20,523

90. VEERAPANDI

Electorate	1,17,964
Votes Polled	72,163
Valid Votes	71,140
Invalid Votes	1,023

		Votes Secured
P. Venga Gounder	AIADMK	31,920
P. C. Kolandaivelu	Janata	9,898
T. V. Thirumalai	INC	10,777
M. Muthuswamy	DMK	18,144
R. Viruppannan	Ind.	401

91. PANAMARATHUPATTI

Electorate	1,05,129
Votes Polled	62,325
Valid Votes	61,444
Invalid votes	881

		Votes Secured
M. Subbarayan	AIADMK	27,676
N. M. Arjunan	INC	9,140
S. C. Kanjamalai	DMK	14,478
R. Govindan	Janatha	10,150

92. ATHUR

Electorate	1,10,029
Votes Polled	64,930
Valid Votes	63,899
Invalid Votes	1,031

		Votes Secured
C. Palanimuthu	INC	19,040
P. Kandasamy	AIADMK	18,693
A. S. Chinnaswamy	Janata	16,860
D. Perumal	DMK	9,306

93. THALAVASAL (SC)

Electorate	1,33,495
Votes Polled	69,261
Valid Votes	67,933
Invalid Votes	1,328

		Votes Secured
S. M. Raju	AIADMK	24,681
K. Kaliyaperumal	INC	19,004
K. R. Thangavel	DMK	13,603
C. Veeramani	Janata	10,645

94. RASIPURAM

Electorate	1,26,007
Votes Polled	78,261
Valid votes	77,425
Invalid votes	836

		Votes Secured
P. Duraisamy	AIADMK	33,762
K. R. Athiappa Gounder	Ind.	471
M. Arumugam	Ind.	1,186
P. Ramasamy	Janata	11,830
R. Kaliappan	INC	10,498
K. R. Siddiah Chetty	Ind.	304
K. C. Periasamy	DMK	19,374

95. SENDAMANGALAM

Electorate	1,26,719
Votes Polled	64,802
Valid votes	63,712
Invalid votes	1,090

		Votes secured
V. Chinnasamy	AIADMK	28,731
M. R. Kali Gounder	Ind.	1,462
Chakravarthi Duraisamy	Janata	9,752
Chinna Vellaiyan	DMK	9,886
S. Vadama Gounder	INC	13,881

96. NAMAKKAL (SC)

Electorate	1,29,817
Votes Polled	79,770
Valid Votes	78,720
Invalid Votes	1,050

		Votes Secured
R. Arunachalam	AIADMK	31,952
V. K. Ramasamy	INC	14,564
R. Kandasamy	Janata	12,729
S. Shanmugamoopan	Ind.	1,699
Chinnupagadai	Ind.	338
P. Veerappan	Ind.	223
K. Veluchamy	DMK	17,215

Coimbatore District

97. KABILAMALAI

Electorate	1,26,322
Votes Polled	83,621
Valid Votes	82,622
Invalid Votes	999

		Votes Secured
K. Sengodan	AIADMK	30,194
P. Arunagiri	Ind.	11,785
P. R. Kumaramangalam	INC	11,621
S. Paramasivam	Janata	18,798
A. Mani	Ind.	587
V. Manivasaham	DMK	9,637

98. TIRUCHENGODE

Electorate	1,64,330
Votes Polled	98,030
Valid votes	96,513
Invalid votes	1,517

		Votes Secured
C. Ponnaiyan	AIADMK	44,501
S. Ramasamy Naicker	Ind.	605
P. M. Kaliannan	INC	16,177
V. Kumaraswamy	Janata	17,764
T. Sankaranpillai	Ind.	665
P. K. Shanmugam	DMK	14,433
R. Samy	Ind.	1,223
N. Subramaniam	Ind.	1,145

99. SANKARI (SC)

Electorate	1,42,856
Votes Polled	62,686
Valid Votes	61,530
Invalid Votes	1,156

		Votes Secured
P. Dhanabal	AIADMK	32,780
M. Paramanandam	DMK	11,751
K. Palanisamy	Ind.	1,224
T. K. Manickam	Ind.	1,161
P. Muthuswamy	Ind.	358
P. Muthuswamy	Janata	9,131
M. Velraj	INC	5,125

100. EDAPPADI

Electorate	1,34,924
Votes polled	81,729
Valid votes	80,558
Invalid votes	1,171

		Votes Secured
I. Ganesan	AIADMK	31,063
A. Arumugam	DMK	11,695
T. Natarajan	INC	24,256
P. Jayadevan	Janata	13,544

101. METTUPALAYAM

Electorate	1,35,224
Votes Polled	81,757
Valid Votes	80,410
Invalid Votes	1,347

		Votes Secured
S. Palaniswamy	AIADMK	26,029
O. Arumugasamy	DMK	11,757
M. K. Kembe Gowder	INC	19,604
G. N. Shanmugam	Ind.	817
V. Subramani	Ind.	1,121
T. P. S. Thippiah	Janata	20,717
M. Nagappan	Ind.	234
R. Mallikarjunan	Ind.	81

102. AVANASHI (SC)

Electorate	1,22,608
Votes Polled	71,384
Valid Votes	69,907
Invalid Votes	1,477

		Votes Secured
S. N. Palaniswamy	INC	22,550
R. Anna Nambi	AIADMK	20,803
G. Elango	Ind.	1,087
T. S. Chinnasamy	Ind.	917
B. Chinnan	DMK	9,431
P. Perumal	Janata	15,119

103. THONDAMUTHUR

Electorate	1,64,344
Votes Polled	96,645
Valid Votes	95,207
Invalid Votes	1,438

		Votes Secured
K. Marudachalam	AIADMK	31,690
K. Kaliana Gownder	Ind.	559
T. M. Palanisamy	INC	15,865
R. Manickavachagam	DMK	24,195
G. Ramaswamy	Ind.	319
V. K. Lakshmanan	Janata	22,579

104. SINGANALLUR

Electorate	1,34,190
Votes Polled	93,552
Valid Votes	92,337
Invalid Votes	1,215

		Votes Secured
R. Venkedusamy alias Venkadu	CPM	25,820
A. Subramaniam	INC	20,978
R. Sengaliappan	Janata	24,024
S. S. Ramasamy	Ind.	853
S. Veerasamy	DMK	20,662

105. COIMBATORE (WEST)

Electorate	1,24,577
Votes Polled	76,119
Valid Votes	75,389
Invalid Votes	730

		Votes Secured
C. Aranganayagam	AIADMK	27,742
A. Alagirisamy	Janata	17,942
Thirumathi Krishnaveni	Ind.	96
C. Durairaj	Ind.	962
R. Palanisamy	Ind.	169
B. S. Mohamed Ali	DMK	20,393
R. S. Velan	INC	8,085

106. COIMBATORE (EAST)

Electorate	1,21,664
Votes Polled	68,770
Valid Votes	68,114
Invalid Votes	656

		Votes Secured
K. Ramani	CPM	20,803
K. Aranganathan	DMK	18,784
P. Palanisamy	Ind.	407
S. Ramasamy	INC	13,877
K. K. Vadivelu	Ind.	199
K. R. Venkatachalam	Janata	14,044

107. PERUR

Electorate	1,37,887
Votes Polled	87,630
Valid Votes	86,429
Invalid Votes	1,201

		Votes Secured
A. Natarajan	DMK	29,158
S. D. Singaravelu	Ind.	108
Chinna Durai	Janata	14,539
M. Nanjappan	CPM	26,328
A. Palanisamy	Ind.	343
A. Palanisamy	Ind.	203
Mylswamy	CPI	15,415
L. Rajan	Ind.	335

108. KINATHUKADAVU

Electorate	1,09,290
Votes Polled	72,972
Valid Votes	71,344
Invalid Votes	1,628

		Votes Secured
K. V. Kandaswamy	AIADMK	25,909
M. Kannappan	DMK	20,589
Subbe Gownder	Janata	6,761
S. D. Duraisamy	INC	18,085

109. POLLACHI

Electorate	1,27,400
Votes Polled	78,721
Valid Votes	77,364
Invalid Votes	1,357

		Votes Secured
O. P. Somasundaram	AIADMK	34,896
C. Shunmugasundaram	Ind.	474
N. Sundaram	Ind.	133
R. Subodhanandan	Ind.	287
K. Sethu	Ind.	408
R. Natarajan	Janata	10,677
M. K. Palanisamy	INC	12,537
S. Raju	DMK	17,952

110. VALPARAI (SC)

Electorate	1,07,590
Votes Polled	62,160
Valid Votes	61,215
Invalid Votes	945

		Votes Secured
R. S. Thangavel	AIADMK	20,926
A. T. Karuppaiah	CPI	16,241
M. Kuppusamy	Janata	7,098
D. M. Shanmugham	DMK	16,008
S. Chellaiah	Ind.	401
K. James *alias* Kumara-Swamy	Ind.	188
M. R. Natarajan	Ind.	162
M. Velusamy	Ind.	191

111. UDUMALPET

Electorate	1,22,735
Votes Polled	85,157
Valid Votes	83,774
Invalid Votes	1,383

		Votes Secured
P. Kolandaivelu	AIADMK	28,737
U.K.P. Natarajan	Janata	24,619
R. T. Mariappan	DMK	21,015
M. Lingasamy	CPI	9,403

112. DHARAPURAM (SC)

Electorate	1,19,006
Votes Polled	60,840
Valid Votes	59,627
Invalid Votes	1,213

		Votes Secured
R. Ayyachamy	AIADMK	18,884
D. G. Rajendran	DMK	14,187
A. K. Sivalingam	INC	16,202
K. Nagarajan	Ind.	1,123
A. K. Balakrishnan	Ind.	3,255
A. Muniappan	Janata	5,976

113. VELLAKOIL

Electorate	1,26,181
Votes Polled	83,308
Valid Votes	82,248
Invalid Votes	1,060

		Votes Secured
D. Ramasamy	INC	30,996
V. K. Kalaimani	AIADMK	19,816
K. A. Nallamuthu	Ind.	1,365
M. Palanisamy	DMK	20,676
S. Ramasamy Nambiar	Janata	8,306
K. N. Linkasamy Gounder	Ind.	1,089

114. PONGALUR

Electorate	1,05,180
Votes Polled	63,930
Valid Votes	62,416
Invalid Votes	1,514

		Votes Secured
K. Nachimuthu	AIADMK	20,324
T. Arumuga Gounder	Ind.	276
A. Chinna Nachimuthu Gounder	Ind.	1,720
L. Daivasigamany	Janata	6,667
N. Palaniswamy	DMK	12,944
S. R. Balasubramaniam	INC	18,769
S. Muthusamy	Ind.	886
V. Murugan	Ind.	830

115. PALLADAM

Electorate	1,25,740
Votes Polled	83,411
Valid Votes	82,068
Invalid Votes	1,343

		Votes Secured
P. G. Kittu	AIADMK	27,172
R. C. Kandasamy	DMK	14,658
R. Krishnaswamy Gounder	Janata	19,379
K. N. Kumarasamy Gounder	INC	20,175
C. Chinnia Gounder	Ind.	684

116. TIRUPPUR

Electorate	1,40,401
Votes Polled	95,743
Valid votes	94,781
Invalid votes	962

		Votes Secured
R. Manimaran	AIADMK	38,984
A. Ganapathy	CPI	24,569
S. Duraisamy	DMK	16,414
N. Natarajan	Ind.	507
N. Palanisamy *alias* Chinna Kutty	Ind.	532
K. Velusamy	Janata	13,775

117. KANGAYAM

Electorate	1,25,068
Votes Polled	76,343
Valid Votes	75,223
Invalid votes	1,120

		Votes Secured
R. K. S. Dhandapani	AIADMK	31,665
M. Arjunan	Janata	6,883
Sivasabapathy	DMK	18,498
K. G. Subbaiah Gounder	INC	15,935
Subramaniam	Ind.	1,412
M. Nachimuthu	Ind.	830

118. MODAKURICHI

Electorate	1,34,149
Votes Polled	86,359
Valid votes	85,083
Invalid votes	1,276

		Votes Secured
(Thirumathi) Subbulakshmi	AIADMK	38,072
M. Arumugam	Janata	12,955
A. Ganesamurthy	DMK	15,200
S. Shanmugasundaram	Ind.	3,538
R. Sainathan	INC	11,462
M. Bharathi	Ind.	424
V. Ponnan	Ind.	159
M. Murugesen	Ind.	473
S. Rangasamy	Ind.	516
M. Raman	Ind.	2,284

119. PERUNDURAI

Electorate	1,27,223
Votes Polled	77,660
Valid Votes	76,607
Invalid Votes	1,048

		Votes Secured
Dr. A. Ponnusamy	AIADMK	30,574
K. Ramalingam	Janata	12,803
R. Kandasamy	DMK	5,946
M. Chenni	Ind.	2,752
M. K. Palanisamy	CPI	24,532

120. ERODE

Electorate	1,52,823
Votes polled	89,078
Valid votes	88,118
Invalid votes	960

		Votes Secured
Muthusamy	AIADMK	27,968
Gurunatha Mudaliar	Ind.	277
Kesavalal Kalidass Sait	Ind.	935
Subramanian	DMK	20,389
Thirumalairajan	CPI	12,995
Nallasivam	Janata	15,401
Manickam	Ind.	153

121. BHAVANI

Electorate	1,11,262
Votes Polled	74,210
Valid Votes	73,191
Invalid Votes	1,019

		Votes Secured
M. R. Soundararajan	AIADMK	22,989
G. Gurumurthi	Janata	19,013
S. N. Balasubramaniam	INC	16,931
N. K. K. Periasamy	DMK	14,258

122. ANDHIYUR (SC)

Electorate	1,01,515
Votes Polled	57,454
Valid votes	56,406
Invalid votes	1,048

		Votes Secured
P. Gurusamy	AIADMK	23,950
A. K. Afan	Ind.	388
T. Sivalingam	Ind.	1,283
A. Palani	Janata	11,423
(Thirumathi) V.P. Palaniammal	DMK	10,099
K. C. Rasu	INC	9,080
C. J. Raju	Ind.	183

123. GOBICHETTYPALAYAM

Electorate	1,15,661
Votes Polled	74,317
Valid Votes	73,329
Invalid Votes	988

		Votes Secured
K. N. K. Ramasamy	AIADMK	25,660
G. S. Laxmanan	Janata	16,466
K. N. Kulandaivel	Ind.	956
M. K. Shanmugam	Ind.	768
N. R. Thiruvengadam	INC	19,248
G. A. Veeriah	Ind.	338
G. P. Venkidu	DMK	9,893

124. BHAVANI SAGAR

Electorate	1,16,862
Votes Polled	72,269
Valid Votes	71,052
Invalid Votes	1,217

		Votes Secured
V. K. Chinnasamy	AIADMK	23,078
Karuppannan	Janata	13,027
S. V. Krishnasamy	Ind.	475
(Thirumathi) Samboornam Saminathan	DMK	21,631
S. C. Palanisamy	Ind.	149
Bharathi	Ind.	207
Makali	Ind.	623
Maran	Ind.	176
T. K. Marisamy	INC	11,428
P. S. Rangasamy	Ind.	258

125. SATYAMANGALAM

Electorate	1,05,350
Votes	60,149
Valid Votes	59,040
Invalid votes	1,109

		Votes Secured
K. A. Chengottaian	AIADMK	21,145
T. M. Onna Marannan	DMK	10,250
N. N. Nagaraj	Janata	7,054
P. Muthirulandi	Ind.	952
C. R. Rajappa	INC	19,639

Nilgris District

126. COONOOR (SC)

Electorate	1,05,169
Votes Polled	54,344
Valid Votes	53,505
Invalid Votes	839

		Votes Secured
K. Rangasamy	DMK	22,649
C. P. Krishnaih	Janata	7,888
L. Komali	Ind.	341
A. Shanmugam	Ind.	144
K. Chandran	INC	8,829
A. Chelliah	Ind.	257
C. Periasamy	AIADMK	13,150
R. Muthuswamy	Ind.	37
M. R. Ramasamy	Ind.	210

127. OOTACAMUND

Electorate	1,04,067
Votes Polled	63,431
Valid Votes	62,652
Invalid Votes	779

		Votes Secured
B. Gopalan	AIADMK	18,134
K. Karuppusamy	DMK	18,005
Dr. A. Manian	Janata	16,946
Dr. M. B. Raman	INC	9,567

128. GUDALUR

Electorate	93,409
Votes Polled	59,346
Valid votes	58,276
Invalid votes	1,070

		Votes secured
K. Hutchi	DMK	15,323
C. I. Allah Pichai	Ind.	14,963
K. M. Hiriya Gowder	Janata	6,915
K. Kallan	INC	10,196
V. N. Krishna Kutty Nair	Ind.	291
R. Kuppusamy	Ind.	1,014
V. Kumaran	Ind.	133
K. Gopalakrishnan Nair	Ind.	2,406
K. R. Shanmuga Sundaram	Ind.	128
V. Sivaraman	Ind.	188
Cheriyan Vakil	Ind.	1,107
K. Baby	Ind.	5,364
K. Raman Kutty	Ind.	248

Madurai District

129. PALANI (SC)

Electorate	1,25,061
Votes Polled	69,939
Valid Votes	68,954
Invalid Votes	985

Votes Secured		
N. Palanivel	CPM	23,810
K. Krishnamoorthy	DMK	17,012
I. Bathrakali	Janata	7,662
(Thirumathi) A.S. Ponnammal	Ind.	504
S. R. P. Mani	INC	19,966

130. ODDANCHATRAM

Electorate	1,23,168
Votes Polled	73,850
Valid votes	72,804
Invalid votes	1,046

Votes Secured		
A. P. Palaniappa Gounder	INC	27,000
R. Kalyanasamy	Ind.	692
C. Kathamuthu	Ind.	1,696
P. Kaliappan	Janata	5,925
K. Kuppusamy	AIADMK	22,419
K. Muthusamy	DMK	15,072

131. PERIYAKULAM

Electorate	1,13,238
Votes Polled	69,649
Valid Votes	68,720
Invalid Votes	929

Votes Secured		
K. Pannai Sethuram	AIADMK	31,271
R. Ramiah	INC	16,948
M. Metha	DMK	13,069
M. V. V. Ramasamy	Janata	7,432

132. THENI

Electorate	1,19,801
Votes Polled	77,761
Valid votes	76,906
Invalid votes	855

Votes Secured		
V. R. Jayaraman	AIADMK	35,152
Ramasadasivam	Ind.	685
K. T. L. Ramasamy	Janata	10,521
N. Venkataramanujan	INC	11,969
S. Velusamy	DMK	18,579

133. BODINAYAKANUR

Electorate	1,22,348
Votes Polled	71,325
Valid Votes	70,584
Invalid Votes	741

Votes Secured		
P. Ramdoss	AIADMK	29,022
K. S. M. Ramachandran	INC	20,030
T. Govindaraj	Janata	14,625
M. Muthusamy	DMK	6,907

134. CUMBAM

Electorate	1,25,579
Votes Polled	85,080
Valid Votes	84,109
Invalid Votes	971

Votes Secured		
A. K. R. Chandrasekaran	AIADMK	34,902
S. Abdulkadar Marakayar	INC	11,329
K. Surulivelu	Ind.	465
N. Natarajan	DMK	34,080
S. N. Ponnuchamy	Ind.	477
C. K. Jayaprakash	Janata	2,856

135. ANDIPATTI

Electorate	1,15,363
Votes Polled	71,743
Valid Votes	70,649
Invalid Votes	1,094

Votes Secured		
K. Kandasamy	AIADMK	24,311
N. V. Gurusamy	Janata	16,269
D. Pandian	CPI	14,255
A. Vetriventhan	DMK	15,814

136. SEDAPATTI

Electorate	1,11,328
Votes Polled	65,408
Valid Votes	64,429
Invalid Votes	979

Votes Secured		
R. Muthiah	AIADMK	28,040
A. R. P. Alagarsamy	INC	17,018
Sankaranarayanan	Janata	4,909
R. S. Thangarasan	DMK	11,687
Periakaruppan *alias* R. Appan	Ind.	2,775

137. THIRUMANGALAM

Electorate	1,10,967
Votes Polled	67,253
Valid Votes	66,582
Invalid Votes	671

Votes Secured		
Selvi P. T. Saraswathy	AIADMK	29,493
U. M. Kannuchamy	DMK	3,948
N. S. V. Chithan	INC	27,720
M. Balsamy Thevar	Janata	3,901
R. Jeganathan	Ind.	1,520

138. USILAMPATTI

Electorate	1,11,961
Votes Polled	57,625
Valid Votes	57,084
Invalid Votes	541

Votes Secured		
P. K. Mookkiah Thevar	FB	35,361
T. K. P. Rathinam	DMK	4,356
K. N. A. Natarajan	Janata	5,034
N. S. Ponniah	INC	11,422
Thirumathi R. Veerammal	Ind.	911

139. NILAKKOTTAI (SC)

Electorate	1,13,541
Votes Polled	56,044
Valid Votes	55,275
Invalid Votes	769

Votes Secured		
A. Baluchamy	AIADMK	28,296
S. K. P. Palusamy	Janata	8,378
M. Muthuperiasamy	INC	9,799
A. Muniyandi	DMK	8,802

140. SHOLAVANDAN

Electorate	1,07,271
Votes Polled	75,732
Valid Votes	74,879
Invalid Votes	853

Votes Secured		
V. Balaguruva Reddiar	AIADMK	29,968
S. Edakanathan	Janata	2,772
A. Chandrasekaran	INC	23,455
S. Sundaramahalingam	Ind.	903
C. Duraipandi	DMK	17,781

141. TIRUPPARANKUNDRAM

Electorate	1,39,138
Votes Polled	82,553
Valid Votes	81,778
Invalid Votes	775

Votes Secured		
K. Kalimuthu	AIADMK	33,850
M. Rathinam	Ind.	3,981
C. Kaveri Maniam	DMK	14,834
E. Subbu Thevar	Ind.	494
S. Durai Raj	Ind.	251
V. Palaniandi Ambalam	INC	15,760
C. Maharajan	Janata	12,188
S. R. Rathinam	Ind.	420

142. MADURAI WEST

Electorate	1,46,580
Votes Polled	75,808
Valid Votes	75,103
Invalid Votes	705

Votes Secured		
T. P. M. Periasamy	AIADMK	32,342
A. C. Kamaraj	Janata	13,168
K. T. K. Thangamani	CPI	12,190
Pon Muthuramalingam	DMK	16,211
Mayandi	FB	1,192

143. MADURAI CENTRAL

Electorate	1,37,125
Votes Polled	74,334
Valid Votes	73,687
Invalid Votes	647

Votes Secured		
N. Lakshmi Narayanan	AIADMK	29,399
A. Rathinam	INC	16,420
J. S. Gopalachari	Ind.	249
S. Sukumaran	Janata	12,780
S. Pandi	DMK	14,676
G. Lakshmana Subbarajulu	Ind.	163

144. MADURAI EAST

Electorate	1,23,951
Votes Polled	73,183
Valid votes	72,539
Invalid Votes	644

Votes Secured

N. Sankariah	CPM	24,263
J. S. Krishnan (Janaki)	Ind.	217
M. R. Sankaran	DMK	9,644
R. V. Sidha	Ind.	508
A. G. Subburaman	INC	22,278
R. V. Seshachari	Janata	15,629

145. SAMAYANALLUR (SC)

Electorate	1,30,768
Votes Polled	77,501
Valid Votes	76,448
Invalid Votes	1,053

Votes Secured

S. Selvaraj	AIADMK	34,019
C. Karuthanan	INC	19,658
S. Karmegam	Ind.	343
P. Subash Chandra Bose	DMK	11,484
P. Selvaraj	Ind.	685
M. Rakkan	Ind.	526
P. Vadivelu	Janata	9,733

146. MELUR

Electorate	1,30,502
Votes Polled	92,853
Valid Votes	91,799
Invalid Votes	1,059

Votes Secured

A. M. Paramasivam	AIADMK	33,111
O. Sethuraman	Janata	3,396
Malaichami	DMK	22,337
Veeranambalam	INC	32,955

147. NATHAM

Electorate	1,13,284
Votes Polled	65,500
Valid Votes	64,610
Invalid Votes	890

Votes Secured

M. Andi Ambalam	INC	29,055
A. Somasundaram	Ind.	786
K. Perumallsamy	Janata	3,161
R. Murugan	AIADMK	21,093
P. S. A. Vellayappa	DMK	10,515

148. DINDIGUL

Electorate	1,41,172
Votes Polled	75,085
Valid Votes	74,387
Invalid Votes	698

Votes Secured

N. Varadarajan	CPM	33,614
A. Gnanaraj	Ind.	2,357
V. Madanagopal	CPI	11,125
M. M. Ranganathan	Ind.	1,380
V. S. Lakshmanan	DMK	13,732
V. Johnson	Janata	12,179

149. ATHOOR

Electorate	1,43,340
Votes Polled	70,418
Valid Votes	69,586
Invalid Votes	832

Votes Secured

A. Vellaichamy	AIADMK	31,590
S. N. Rajagopal	Janata	9,476
A. M. T. Nachiappan	DMK	13,938
Mani Bharathy	INC	12,200
M. S. Rayappan	Ind.	2,382

150. VEDASENDUR

Electorate	1,46,304
Votes Polled	73,371
Valid Votes	72,546
Invalid Votes	825

Votes Secured

S. M. Vasan	AIADMK	26,995
S. M. J. Alimohamed	Ind.	2,040
R. V. Subburayalu	Janata	9,808
P. Sheik Abdulkadar Sait	DMK	6,467
M. Durai	Ind.	192
S. Nanjunda Rao	INC	25,141
P. M. Moosa	Ind.	903

Tiruchirapalli District

151. ARAVAKURICHI

Electorate	1,33,806
Votes Polled	83,571
Valid Votes	82,467
Invalid Votes	1,104

Votes Secured

S. Sadasivam	INC	32,581
Abdul Jabbar	Ind.	16,152
Muthan *alias* Muthusamy	Ind.	5,269
P. Ramasamy	DMK	21,547
V. K. Ramasamy	Janata	5,666
Raman	Ind.	1,452

152. KARUR

Electorate	1,45,681
Votes Polled	97,345
Valid Votes	96,428
Invalid Votes	917

Votes Secured

K. Vadivel	AIADMK	33,856
M. S. Santhanam	Ind.	233
S. Nallasamy	DMK	22,264
G. Balan	Janata	18,499
R. Ponnusamy	Ind.	938
K. S. Ramasamy	CPI	20,252
V. Vembarayan	Ind.	386

153. KRISHNARAYAPURAM

Electorate	1,20,967
Votes Polled	70,188
Valid Votes	69,235
Invalid votes	953

Votes Secured

P. Soundarapandian	AIADMK	22,561
M. Aruna	DMK	14,577
(Selvi) S. Kalavathy	Janata	10,130
P. M. Thangavelraj	INC	21,967

154. MARUNGAPURI

Electorate	1,13,252
Votes Polled	71,151
Valid Votes	70,220
Invalid Votes	931

Votes Secured

K. Karunaigiri Muthiah	INC	27,093
A. P. Raju	DMK	16,894
E. V. Kandaswamy	Janata	9,987
A. Mookiah Konar	Ind.	1,292
M. A. Rajakumar	AIADMK	14,954

155. KULITHALAI

Electorate	1,19,673
Votes Polled	81,491
Valid votes	80,505
Invalid votes	986

Votes Secured

P. E. Srinivasa Reddiar	INC	27,043
S. Rasu	AIADMK	19,396
M. S. Royappan	Ind.	843
K. V. Muthusamy	DMK	18,581
C. John Britto	Janata	14,642

156. THOTTIAM

Electorate	1,17,119
Votes Polled	81,711
Valid votes	80,508
Invalid votes	1,203

Votes Secured

K. P. Kathamuthu	AIADMK	25,638
M. Arumugam	Ind.	2,046
S. P. Rajendran	Janata	11,049
V. Eluvandan	Ind.	479
S. K. Vadivelu	DMK	16,648
K. M. Shanmugasundaram	INC	24,648

157. UPPILIAPURAM

Electorate	1,36,600
Votes Polled	86,464
Valid Votes	85,324
Invalid Votes	1,140

Votes Secured

R. Periayasamy	INC	31,642
M. Atchayagopal	AIADMK	25,936
C. Chinnasamy	Janata	4,222
R. Natarasan	DMK	23,524

158. MUSIRI

Electroate	1,32,057
Votes Polled	89,373
Valid Votes	88,026
Invalid Votes	1,347

Votes Secured

P. Kothandaraman alias Musiri Pithan	AIADMK	34,569
P. Ayyakkannu	Janata	13,965
S. Subbiah	INC	18,925
V. S. Periasamy	DMK	20,567

159. LALGUDI

Electorate	1,29,589
Votes Polled	93,712
Valid votes	92,415
Invalid votes	1,297

		Votes Secured
K. N. Shanmugam	AIADMK	33,322
N. S. Abedanandham	INC	14,266
R. Gangadharan	DMK	31,789
S. Kandaswamy	Ind.	808
K. N. Thangavelu	Janata	12,230

160. PERAMBALUR (SC)

Electorate	1,19,195
Votes polled	67,477
Valid votes	66,165
Invalid votes	1,312

		Votes Secured
S. V. Ramasamy	AIADMK	37,400
T. Kaliaperumal	Ind.	1,173
R. Chandrabose Chelliah	Janata	8,826
M. Samy	RPI	1,613
P. Ramalingam	Ind.	694
K. S. Velusamy	DMK	16,459

161. VARAHUR (SC)

Electorate	1,12,363
Votes Polled	69,649
Valid Votes	68,757
Invalid Votes	892

		Votes Secured
N. Permal	AIADMK	36,023
P. K. Ramasamy	INC	3,348
M. Ganapathy	Janata	4,791
K. Kanagasabai	DMK	23,919
A. Krishnan	Ind.	676

162. ARIYALUR

Electorate	1,07,638
Votes Polled	80,457
Valid votes	78,989
Invalid votes	1,468

		Votes Secured
Arumugathudayar	DMK	31,380
Karuppiah Alias Asokan	AIADMK	30,125
R. Krishnasamy	Ind.	1,131
G. Srinivasan	INC	12,359
T. Natarajan	Janata	3,781
Muniasamy	Ind.	213

163. ANDIMADAM

Electorate	94,718
Votes Polled	66,366
Valid votes	65,337
Invalid votes	1,029

		Votes secured
T. Subramanian	AIADMK	36,885
P. Gopalakrishnan	Janata	2,446
S. Sivasubramanian	DMK	22,056
K. Palamalai	CPI	3,428
E. K. Manickam	Ind.	522

164. JAYANKONDAM

Electorate	1,09,695
Votes Polled	80,459
Valid Votes	79,412
Invalid Votes	1,047

		Votes Secured
V. Karunamoorthy	AIADMK	35,540
K. M. S. Alagesam Pillai	Ind.	252
S. Ramasamy	Ind.	7,701
K. C. Ganesan	DMK	23,828
R. Mathivanan	INC	7,898
U. S. Ramamoorthy	Janata	4,193

165. SRIRANGAM

Electorate	1,24,560
Votes Polled	84,697
Valid Votes	83,675
Invalid Votes	1,022

		Votes Secured
R. Soundararajan	AIADMK	26,200
C. Ramasamy	Janata	19,782
V. K. Rengagathan	INC	15,562
M. Dharmalingam	DMK	21,135
K. P. Krishnan	Ind.	532
S. Thangayan	Ind.	464

166. TIRUCHIRAPALLI-I

Electorate	1,16,787
Votes Polled	66,313
Valid Votes	65,805
Invalid Votes	508

		Votes Secured
C. Manickam	AIADMK	21,908
A. V. Krishnamurthy	DMK	19,597
R. Subbaiyan	Janata	14,350
M. Palaniyandy	INC	9,759
Raja *alias* N. A. Waheed	Ind.	191

167. TIRUCHIRAPALLI-II

Electorate	1,24,230
Votes Polled	70,413
Valid Votes	69,850
Invalid Votes	563

		Votes Secured
K. Soundararajan	AIADMK	25,405
S. Rathinam	Ind.	400
N. Krishnan	Janata	16,841
M. Gnanam	CPI	9,681
M. S. Venkatachalam	DMK	17,523

168. TIRUVERAMBUR

Electorate	1,21,291
Votes Polled	77,390
Valid Votes	76,713
Invalid Votes	677

		Votes Secured
Murugesan	DMK	24,594
K. Ananda Nambiar	CPM	18,193
M. M. Ismail	Ind.	947
A. M. Sapatarishi Nattar	Janata	9,327
V. Swaminathan	INC	23,742

Thanjavur District

169. SIRKALI (SC)

Electorate	1,14,299
Votes Polled	80,121
Valid Votes	79,034
Invalid Votes	1,087

		Votes Secured
K. Subravelu	DMK	34,281
M. Gurusamy	Ind.	440
D. Kailasam	Janata	6,405
K. Balasubramanian	AIADMK	29,405
K. Vaithilingam	INC	8,503

170. POOMPUHAR

Electorate	1,07,361
Votes Polled	77,094
Valid Votes	75,880
Invalid Votes	1,214

		Votes Secured
S. Ganesan	DMK	34,108
P. Ebiraj	INC	9,662
K. K. Deen	Janata	7,605
G. Barathimohan	CPM	24,508

171. MAYURAM

Electorate	1,06,786
Votes Polled	76,848
Valid Votes	75,824
Invalid Votes	1,024

		Votes Secured
N. Kittappa	DMK	29,829
M. M. S. Abulasan	INC	21,237
S. Somasundaram	Janata	7,071
Balavelayudam	AIADMK	17,687

172. KUTTALAM

Electorate	1,10,107
Votes Polled	78,460
Valid Votes	77,206
Invalid Votes	1,254

		Votes Secured
Rajamanickam	DMK	30,819
Pon. Govindarajan	Janata	3,924
Dhakshinamurthy Kalingarayar	INC	19,666
G. Veeraiyan	CPM	22,556
Jagannatha Sharma	Ind.	241

173. NANNILAM (SC)

Electorate	1,12,720
Votes Polled	81,536
Valid Votes	80,566
Invalid Votes	970

		Votes Secured
M. Manimaran	DMK	33,636
P. Kanniyan	Janata	4,304
A. Kaliarasan	AIADMK	18,099
P. Jayaraj	INC	24,527

174. TIRUVARUR (SC)

Electorate	1,19,219
Votes Polled	87,897
Valid Votes	87,031
Invalid Votes	866

		Votes Secured
Thazhai M. Karunanithi	DMK	38,528
K. M. Chellaiya	Janata	4,008
S. Thangaiyan	CPI	20,221
P. S. Dhanushkody	CPM	24,274

175. NAGAPATTINAM

Electorate	1,11,891
Votes Polled	80,275
Valid Votes	79,488
Invalid Votes	787

		Votes Secured
R. Umanath	CPM	31,519
A. Ambalayanan	DMK	30,809
D. Chakrapani	Janata	5,590
M. Basheerahamed	INC	11,570

176. VEDARANYAM

Electorate	1,01,833
Votes Polled	84,427
Valid Votes	83,613
Invalid Votes	814

		Votes Secured
M. Meenakshisundaram	DMK	29,601
K. Gokilachandran	Janata	3,965
S. Devarajan	INC	28,009
M. S. Manickam	AIADMK	21,530
G. Venkatachalam	Ind.	508

177. TIRUTHURAIPUNDI (SC)

Electorate	1,21,892
Votes Polled	94,971
Valid Votes	94,079
Invalid Votes	892

		Votes Secured
T. Uthirapathy	CPI	43,208
T. Rajamanickam	Janata	6,216
M. P. Kannusamy	Ind.	19,721
Kuppusamy	DMK	24,934

178. MANNARGUDI

Electorate	1,19,893
Votes Polled	91,459
Valid votes	90,515
Invalid Votes	944

		Votes Secured
M. Ambigapathi	CPI	34,298
A. Thirunavukkarasu	AIADMK	22,160
K. Balakrishnan	DMK	26,881
P. Veeraiya	Janata	6,836
S. Venkatesan	Ind.	340

179. PATTUKOTTAI

Electorate	1,16,450
Votes Polled	87,232
Valid Votes	86,263
Invalid Votes	969

		Votes Secured
A. R. Marimuthu	INC	25,993
R. Ramasamy	Janata	9,227
N. Kulandaiyan	Ind.	719
V. Chandrasekaran	Ind.	1,100
R. Srinivasan	DMK	24,142
V. R. K. Palaniappan	AIADMK	25,082

180. PERAVURNI

Electorate	1,10,000
Votes Polled	84,884
Valid Votes	84,095
Invalid Votes	789

		Votes Secured
M. R. Govindan	AIADMK	32,625
(Thirumathi) T. R. Nagarethinam	Janata	4,894
M. Masilamani	CPI	24,675
R. Vedachalam	DMK	21,901

181. ORTHANAD

Electorate	1,16,133
Votes Polled	90,858
Valid votes	89,768
Invalid votes	1,090

		Votes secured
T. M. Thailappan	DMK	31,866
N. Sivagnanam	INC	26,156
M. Thiruvengadam	Ind.	1,368
A. Murugesan	Janata	5,079
T. Veeraswamy	AIADMK	25,299

182. TIRUVONAM

Electorate	1,08,939
Votes Polled	83,055
Valid Votes	81,826
Invalid Votes	1,229

		Votes Secured
Durai Govindarajan	AIADMK	23,779
N. Kaliyamoorthy	Janata	9,490
P. Thangaraj	Ind.	9,987
Pulavar T. Tholappan	DMK	21,566
N. Vaiyapuri Vanniyar	INC	17,004

183. THANJAVUR

Electorate	1,26,647
Votes polled	81,043
Valid votes	80,092
Invalid votes	951

		Votes Secured
S. Natarajan	DMK	33,418
A. Rajamanickam	Ind.	391
R. Swaminathan	AIADMK	23,662
T. P. Murugesan	INC	16,584
V. Vaithiyalingam	Janata	6,037

184. THIRUVAIYARU

Electorate	1,08,342
Votes Polled	78,193
Valid Votes	77,107
Invalid votes	1,086

		Votes Secured
G. Elangovan	DMK	28,500
A. Ramamurthy	INC	16,062
R. Thangaian	Ind.	2,633
T. V. A. Natarajan	Janata	6,038
P. C. Palaniyandi	AIADMK	23,197
T. S. Radhakrishnan	Ind.	677

185. PAPANASAM

Electorate	1,05,384
Votes Polled	75,771
Valid votes	74,553
Invalid votes	1,218

		Votes Secured
R. V. Soundirarajan	INC	24,904
P. K. E. Abdullah	Ind.	20,714
S. Sachidanandam	DMK	23,268
T. A. Jayaraman	Janata	4,769
S. Sevupanickar	Ind.	898

186. VALANGAIMAN (SC)

Electorate	96,692
Votes Polled	68,417
Valid Votes	67,404
Invalid Votes	1,013

		Votes Secured
A. Chellapa	DMK	24,270
A. Srinivasan	INC	19,172
P. Srinivasan	AIADMK	20,897
Pichaiyan	Janata	3,065

187. KUMBAKONAM

Electorate	1,18,847
Votes Polled	82,127
Valid Votes	81,272
Invalid Votes	855

		Votes Secured
S. R. Ratha	AIADMK	26,432
C. R. Santhanam	Janata	12,814
R. Durai	DMK	17,460
K. Ramani	Ind.	1,116
O. Vadiyel Mazhavarayar	INC	23,450

188. THIRUVIDAMARUDUR

Electorate	1,14,391
Votes	81,984
Valid votes	80,712
Invalid votes	1,272

		Votes Secured
S. Ramalingam	DMK	26,304
K. Govindarajalu	INC	24,489
K. Nedunchezhian	Ind.	2,053
M. C. Mahalingam	AIADMK	24,067
M. G. Mani	Ind.	781
N. G. Rengarajan	Janata	3,018

Pudukottai District

189. THIRUMAYAM

Electorate	1,18,468
Votes Polled	81,030
Valid Votes	79,825
Invalid Votes	1,205

		Votes Secured
N. Sundararaj	INC	20,694
M. Govindan *alias* Iyalarasan	Ind.	425
V. Subbiah	Ind.	18,505
V. Somasundara Odiyar	Ind.	578
K. Duraikkannu	DMK	14,427
P. Ponnambalam	AIADMK	20,637
R. Raja	Janata	4,559

190. KOLATHUR (SC)

Electorate	1,20,684
Votes Polled	74,965
Valid Votes	74,062
Invalid Votes	903

		Votes Secured
V. Chinniah	INC	27,071
Keerai Tamizh Selvan	DMK	16,459
C. Sundaravelu	Janata	4,722
C. Madhimaran	Ind.	2,957
T. Marimuthu	AIADMK	22,853

191. PUDUKKOTTAI

Electorate	1,25,055
Votes Polled	86,061
Valid Votes	85,190
Invalid Votes	871

		Votes Secured
R. Rajkumar Vijaya Regunatha Tondaman	INC	36,406
C. Anbarasan	AIADMK	19,352
M. Uthrapathy	Ind.	937
A. Karuppiah Udayar	Janata	8,175
K. Chidambaram	DMK	19,217
J. Muthukrishnan	Ind.	1,103

192. ALANGUDI

Electorate	1,23,846
Votes Polled	97,613
Valid Votes	96,652
Invalid Votes	961

		Votes Secured
T. Pushbaraju	INC	37,634
A. Satyanathan	Ind.	927
P. Thirumaran	AIADMK	27,059
A. Periannan	DMK	20,244
M. Ramachandran	Janata	10,788

193. ARANTHANGI

Electorate	1,25,574
Votes Polled	95,833
Valid Votes	94,706
Invalid Votes	1,127

		Votes Secured
S. Thirunavukkarasu	AIADMK	35,468
P. Appukutty	CPI	24,528
S. R. M. Iyooboo	Ind.	4,397
S. Ramanathan	DMK	22,052
R. Karuppaiah	Janata	7,335
Viyasar	Ind.	415
James	Ind.	511

Ramanathapuram District

194. THIRUPPATTUR

Electorate	1,18,036
Votes Polled	79,737
Valid votes	78,598
Invalid votes	1,139

		Votes Secured
S. Shanmugam Koothakudi	CPI	21,579
C. R. Rajachidambaram	AIADMK	21,238
T. G. Seshachalam Yadav	Ind.	387
N. A. R. Nagarajan	Ind.	16,496
Radhakrishnan	DMK	18,898

195. KARAIKUDI

Electorate	1,30,184
Votes Polled	86,657
Valid votes	85,557
Invalid votes	1,100

		Votes Secured
P. Kaliappan	AIADMK	27,403
P. L. Karuppiah	Janata	12,763
C. T. Chidambaram	DMK	18,228
P. Chidambaram	INC	27,163

196. TIRUVADANAI

Electorate	1,31,813
Votes Polled	89,100
Valid Votes	88,126
Invalid Votes	974

		Votes Secured
K. R. R. M. Kariyamanickam Ambalam	INC	32,386
S. Anguchamy	AIADMK	28,650
(Thirumathi) Kamalam Sellathurai	DMK	10,964
S. M. Savarimuthu Udaiyar	Janata	16,126

197. ILAYANGUDI

Electorate	1,05,262
Votes Polled	73,987
Valid Votes	72,983
Invalid Votes	1,004

		Votes Secured
S. Sivasamy	CPI	17,677
R. Sankar	Janata	5,303
N. N. K. Seeni Pulavar	Ind.	877
R. Thangiah	Ind.	1,707
S. N. K. J. Nainamohamed	Ind.	115
V. Malaikannan	DMK	16,927
S. Mathavan	Ind.	15,055
Mohamad Sherif	Ind.	15,362

198. SIVAGANGA

Electorate	1,18,391
Votes Polled	78,004
Valid Votes	76,805
Invalid Votes	1,199

		Votes Secured
O. Subramanian	INC	23,495
P. Ailhinamilagi	Ind.	8,135
V. S. Gurusamy	Ind.	1,369
A. Shanmugam	DMK	12,299
K. R. Muruganandam	AIADMK	21,066
SK. AR. SM. Ramanathan Chettiar	Janata	6,988
V. Velayudham Chettiar	Ind.	3,453

199. MANAMADURAI (SC)

Electorate	1,16,220
Votes Polled	72,587
Valid Votes	71,719
Invalid Votes	868

		Votes Secured
V. M. Subramanian	AIADMK	28,849
S. Subramanian	Janata	3,615
K. Palanikudumban	Ind.	371
K. Paramalai	INC	26,794
M. Veeranan	DMK	12,090

200. PARAMAKUDI (SC)

Electorate	1,20,599
Votes Polled	76,096
Valid Votes	75,194
Invalid Votes	902

		Votes Secured
K. Ugrapandian	AIADMK	27,303
R. Anbarasan Chatrakudi	Ind.	307
K. Krishnan	INC	23,357
V. Govindan	Ind.	817
T. K. Siraimeetan	DMK	15,254
A. V. Swaminathan	Janata	8,156

201. RAMANATHAPURAM

Electorate	1,09,710
Votes Polled	71,673
Valid Votes	70,524
Invalid Votes	1,149

		Votes Secured
T. Ramaswamy	AIADMK	33,048
M. Ramaswamy	CPI	9,984
S. K. Ganesan	Janata	15,520
A. Mani	Ind.	524
S. Marimuthu	DMK	11,448

202. KADALADI

Electorate	1,25,525
Votes Polled	71,233
Valid Votes	70,264
Invalid Votes	969

		Votes Secured
R. C. Rana Singa Subramania Thalaivar	AIADMK	25,699
P. A. S. Abdul Hannan Sahibu	Janata	8,746
K. Govindan	Ind.	9,174
A. Piranavanathan	DMK	12,299
S. Mohamed Sultan	Ind.	204
S. P. Murugesan	Ind.	6,796
R. Muniyandi Thevar	INC	6,947
M. Valampuri	Ind.	408

203. MUDUKULATHUR

Electorate	1,24,054
Votes Polled	74,381
Valid Votes	73,392
Invalid Votes	989

		Votes Secured
S. Balakrishnan	INC	17,709
S. Alagarsamy	Ind.	386
S. M. Karumalaiyan	AIADMK	14,652
M. Kalimuthu	Ind.	405
K. Thanukodi Thevar	FB	12,035
V. Munisamy	Ind.	14,844
K. Valivittan	Ind.	121
T. Veluchamy	DMK	7,716
A. Habib Mohamed	Janata	5,524

204. ARUPPUKOTTAI

Electorate	1,12,763
Votes Polled	77,701
Valid Votes	76,582
Invalid Votes	1,119

		Votes Secured
M. G. Ramachandran	AIADMK	43,065
M. Chidambaram	Ind.	355
A. Sivasamy	INC	12,075
N. Seenivasan	Ind.	645
K. Palani Kudumban	Ind.	164
G. Pitchai	Ind.	550
R. Periyakaruppan *alias* Appan	Ind.	72
S. M. Bose	DMK	5,415
Muthuramalingam	Ind.	202
M. Muthuvelservai	Janata	13,687
V. T. R. Veerappa Gounder	Ind.	276
K. Jawahar	Ind.	76

205. SATTUR

Electorate	1,28,786
Votes Polled	90,653
Valid Votes	89,659
Invalid Votes	994

		Votes Secured
K. K. S. S. R. Ramachandran	AIADMK	38,772
V. Karmegsamy	DMK	8,637
K. Gurusami Naicker	Ind.	606
S. Thurairaj	Ind.	2,105
T. Periyasamy	Ind.	544
S. Mani Sankaran	Ind.	417
Mookaiah Nadar	Janata	16,748
Veerasamy	INC	21,830

206. VIRUDHUNAGAR

Electorate	1,24,439
Votes Polled	75,201
Valid Votes	74,298
Invalid Votes	903

		Votes Secured
M. Sundararajan	AIADMK	33,077
A. S. A. Arumugam	Janata	22,820
K. S. Kandasamy	DMK	8,331
V. Chinniah	Ind.	1,747
S. Navaneethakrishnan	INC	7,520
A. Velu	Ind.	803

207. SIVAKASI

Electorate	1,23,965
Votes Polled	79,712
Valid votes	78,800
Invalid Votes	912

		Votes Secured
K. Ramasamy	JANATA	24,518
S. Amuthan	DMK	7,753
R. Gangathara Thilagam	Ind.	389
K. Kaliappa Nadar	Ind.	1,079
Dharmar	INC	22,746
K. Ponnupandian	AIADMK	22,315

208. SRIVILLIPUTTUR

Electorate	1,22,386
Votes Polled	82,454
Valid Votes	81,447
Invalid Votes	1,007

		Votes Secured
Thamaraikani	AIADMK	25,990
S. Alagarsamy	CPI	18,876
A. A. Anandan	Janata	14,901
G. Karuppiah *alias* Arivarasan	Ind.	446
S. Sandiran	Ind.	1,590
M. Sundara Mahalingam	Ind.	267
C. Ponniah	Ind.	403
V. Vaikundam	DMK	18,974

209. RAJAPALAYAM (SC)

Electorate	1,26,020
Votes Polled	75,384
Valid Votes	74,649
Invalid Votes	735

		Votes Secured
K. Dhanuskoti	AIADMK	28,028
K. Andi *alias* Gurusamy	DMK	10,220
M. Sundaram	Ind.	382
J. S. Baliah	Janata	11,702
K. Pottupottan	INC	24,181
A. Ramaswamy	Ind.	136

Tirunelveli District

210. VILATHIKULAM

Electorate	1,14,745
Votes Polled	67,060
Valid Votes	66,125
Invalid Votes	935

		Votes Secured
R. K. Perumal	AIADMK	25,384
Ar. A. Arulanandam	Janata	8,452
P. Ramasamy Reddiar	Ind.	706
K. P. Ganapathy	FB	579
A. K. Kondureddiar	DMK	8,720
K. Subbareddiar	INC	22,001
T. Thomas	Ind.	283

211. OTTAPIDARAM

Electorate	1,05,342
Votes Polled	55,323
Valid Votes	54,517
Invalid Votes	806

		Votes Secured
O. S. Veluchamy	INC	22,629
S. Ashok Kumar	Janata	7,483
N. Arumugam	Ind.	186
N. Krishnan	Ind.	108
Thangaraj	AIADMK	16,801
D. Muthiah	Ind.	715
M. Muthiah	FB	1,681
U. Mookiah	DMK	4,661
R. Vellaichamy	Ind.	253

212. KOVILPATTI

Electorate	1,07,794
Votes Polled	67,973
Valid Votes	67,140
Invalid Votes	833

		Votes Secured
S. Alagarsamy	**CPI**	21,985
R. Kovil Pillai	Ind.	2,602
P. Seeniraj	AIADMK	21,588
L. Sundararaj Naicker	Janata	7,187
A. K. C. Thangapandian	DMK	13,778

213. SANKARANAYANAR KOIL (SC)

Electorate	1,21,097
Votes Polled	63,902
Valid Votes	62,965
Invalid Votes	937

		Votes Secured
S. Subbiah	**DMK**	21,569
C. Ayyadorai	AIADMK	21,232
S. Shunmugavel	INC	14,491
A. M. Chellachami	Janata	4,967
S. Pachiappan	Ind.	706

214. VASUDEVANALLUR

Electorate	1,21,099
Votes Polled	61,509
Valid Votes	60,418
Invalid Votes	1,091

		Votes Secured
R. Krishnan	**CPM**	20,092
S. Ayyadurai *alas* Anantharaj	Janata	10,826
I. Muthuraj	CPI	16,048
M. Duraisamy	DMK	10,330
K. Maruthan	Ind.	650
S. Kathapan	Ind.	2,472

215. KADAYANALLUR

Electorate	1,08,473
Votes Polled	76,660
Valid votes	75,675
Invalid votes	985

		Votes Secured
M. M. A. Razak	**AIADMK**	29,347
K. Kattaripandian	DMK	16,329
Nellai Gandhi Abdul Kader	Ind.	690
S. K. T. Ramachandran	INC	23,686
M. Lakshmana Nadar	Janata	5,623

216. TENKASI

Electorate	1,12,800
Votes Polled	74,171
Valid Votes	73,194
Invalid Votes	977

		Votes Secured
S. Muthusamykarayalar	**INC**	30,273
J. Abduljappar Sahib	Ind.	8,498
L. Arumugasamy Nadar	Janata	10,529
T. K. V. Natarajan	Ind.	1,158
V. Pandivazhavan	DMK	12,745

217. ALANGULAM

Electorate	1,14,602
Votes Polled	72,074
Valid Votes	70,987
Invalid Votes	1,087

		Votes Secured
V. Karuppasamy Pandian	**AIADMK**	20,183
S. Arulappan Nadar	Ind.	1,024
M. Rayappan Nadar	Ind.	235
S. Ukkiramapandian	INC	17,997
P. Thambithurai	DMK	11,592
R. Navaneetha Krishna Pandian	Janata	18,342
S. Subbiah Thevar	Ind.	663
T. Tirumaran	FB	861

218. TIRUNELVELI

Electorate	1,16,395
Votes polled	69,248
Valid votes	68,622
Invalid votes	626

		Votes Secured
G. R. Edmund	**AIADMK**	26,419
M. Abdul Majeed	Ind.	6,090
E. Hariramakrishnan	Ind.	545
Krishnan *alias* Nellai Kannan	INC	19,125
R. Servaikaran Subbiah	Janata	8,244
E. Nambi	DMK	8,199

219. PALAYAMKOTTAI

Electorate	1,10,603
Votes Polled	66,763
Valid votes	66,087
Invalid votes	676

		Votes Secured
K. Manoharan	**AIADMK**	29,146
M. Arumugha Konar	INC	14,202
N. Shanmugam	Ind.	15,192
S. A. Seyad Ibrahim Alim	Ind.	574
S. Justin	Janata	6,973

220. CHERANMAHADEVI

Electorate	1,02,377
Votes Polled	69,360
Valid Votes	68,635
Invalid votes	725

		Votes Secured
Pandian	**AIADMK**	24,256
K. Selvaraj	Janata	10,946
V. Rathinasabapathy	INC	21,964
K. S. Subramanian	DMK	119,46

221. AMBASAMUDRAM

Electorate	99,927
Votes Polled	66,953
Valid Votes	66,110
Invalid Votes	843

		Votes Secured
Eswaramurthy alias Sornam	**CPM**	23,356
K. M. Arunasalam	Ind.	863
P. Arumugam	DMK	8,114
R. Nallakannu	CPI	21,569
S. S. Rajalingaraja	Janata	12,208

222. NANGUNERI

Electorate	1,20,256
Votes Polled	67,988
Valid votes	67,359
Invalid votes	629

		Votes Secured
M. John Vincent	**JANATA**	18,668
S. Sudalaiyandi	DMK	9,381
V. Periyasamy	Ind.	7,485
M. Rajagopalan	INC	12,877
M. Vallinayagam	Ind.	484
D. Vellaiah	AIADMK	18,464

223. RADHAPURAM

Electorate	1,19,865
Votes Polled	69,147
Valid Votes	68,265
Invalid Votes	882

		Votes Secured
Y. S. M. Yusuff	**AIADMK**	26,404
S. Subbiah Nadar	Ind.	336
P. Paulpandian	Janata	22,810
T. Martin	INC	6,524
I. Rayer	DMK	12,028
S. K. John Devairakkam	Ind.	163

224. SATTANGULAM

Electorate	1,31,771
Votes Polled	68,009
Valid Votes	67,101
Invalid Votes	908

		Votes Secured
R. Jabamani	**JANATA**	18,362
Si. Pa. Aditanar	Ind.	17,507
C. Kandiah	Ind.	988
Syed Sahulhameed	Ind.	2,274
M. S. Selvarajan	INC	17,091
D. Nellai Nedumaran	DMK	10,879

225. TIRUCHENDUR

Electorate	1,39,451
Votes Polled	72,302
Valid votes	71,642
Invalid votes	660

		Votes Secured
R. Amirtharaj	**AIADMK**	20,871
Subramania Adithan	Janata	19,736
Syed Ahamed	DMK	17,441
Raj Victoria	INC	1,2477
Vidyasahara Adhithan	Ind.	1,117

226. SRIVAIKUNTAM

Electorate	1,12,893
Votes Polled	66,189
Valid Votes	65,390
Invalid Votes	799

		Votes Secured
K. Sathuselvaraj	**AIADMK**	20,459
M. Sankarapandian	Janata	12,672
S. Muthu	DMK	16,919
S. Nainarkulasekaran	INC	15,340

227. TUTICORIN

Electorate	1,24,642
Votes Polled	81,195
Valid votes	80,565
Invalid votes	630

		Votes secured
N. Dhanasekaran	**AIADMK**	22,598
M. Chocklingam	Janata	16,656
(Thirumathi) R. Naoroji	INC	22,379
A. Krishnan	DMK	17,606
M. Arokiasamy	Ind.	326

Kanniyakumari District

228. KANNIYAKUMARI

Electorate	1,04,698
Votes Polled	70,082
Valid Votes	69,703
Invalid Votes	379

		Votes Secured
C. Krishnan	AIADMK	23,222
S. Shanmugam	Ind.	6,712
T. Chinnakan Nadar	Ind.	930
R. Subramonia Pillai	Ind.	468
T. C. Subramonia Pillay	Janata	16,010
M. Subramoniam	DMK	14,854
K. Muthukaruppa Pillai	INC	7,507

229. NAGERCOIL

Electorate	1,32,870
Votes Polled	74,404
Valid Votes	73,994
Invalid Votes	410

		Votes Secured
M. Vincent	AIADMK	26,973
V. Emmanuel	Ind.	165
S. M. Jebosteen	Ind.	122
Poonmedai S. Lakshmanan Pillay	Ind.	409
P. Muhammad Ismail	Janata	26,780
G. C. Michael Raj	DMK	12,824
M. A. James	INC	6,721

230. COLACHEL

Electorate	1,11,755
Votes Polled	69,948
Valid Votes	69,509
Invalid Votes	439

		Votes Secured
R. Athiswami	JANATA	21,131
A. Pauliah	INC	11,264
P. M. Rasarathinam	AIADMK	17,165
S. Retnaraj	DMK	19,949

231. PADMANABHAPURAM

Electorate	97,615
Votes Polled	48,222
Valid Votes	47,914
Invalid Votes	308

		Votes Secured
A. Swamidhas	JANATA	22,910
(Thirumathi) R. Antrose Mary	Ind	662
A. Rajappa	DMK	5,551
N. C. Ramaswamy	Ind.	321
N. V. Kanniyappan	AIADMK	14,757
M. Ratnaswamy	INC	3,713

232. THIRUVATTAR

Electorate	97,167
Votes Polled	57,300
Valid Votes	56,964
Invalid Votes	336

		Votes Secured
J. James	JANATA	27,912
S. Gladstone	DMK	202
N. Sukumaran	Ind.	984
A. J. Raj	INC	1,764
J. Hemachandran	CPM	26,192

233. VILAVANCODE

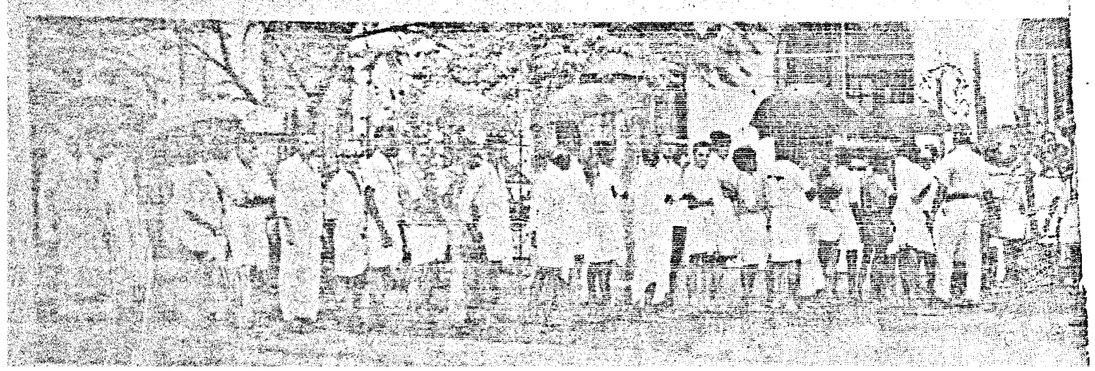
Electorate	1,17,831
Votes Polled	67,279
Valid Votes	66,787
Invalid Votes	492

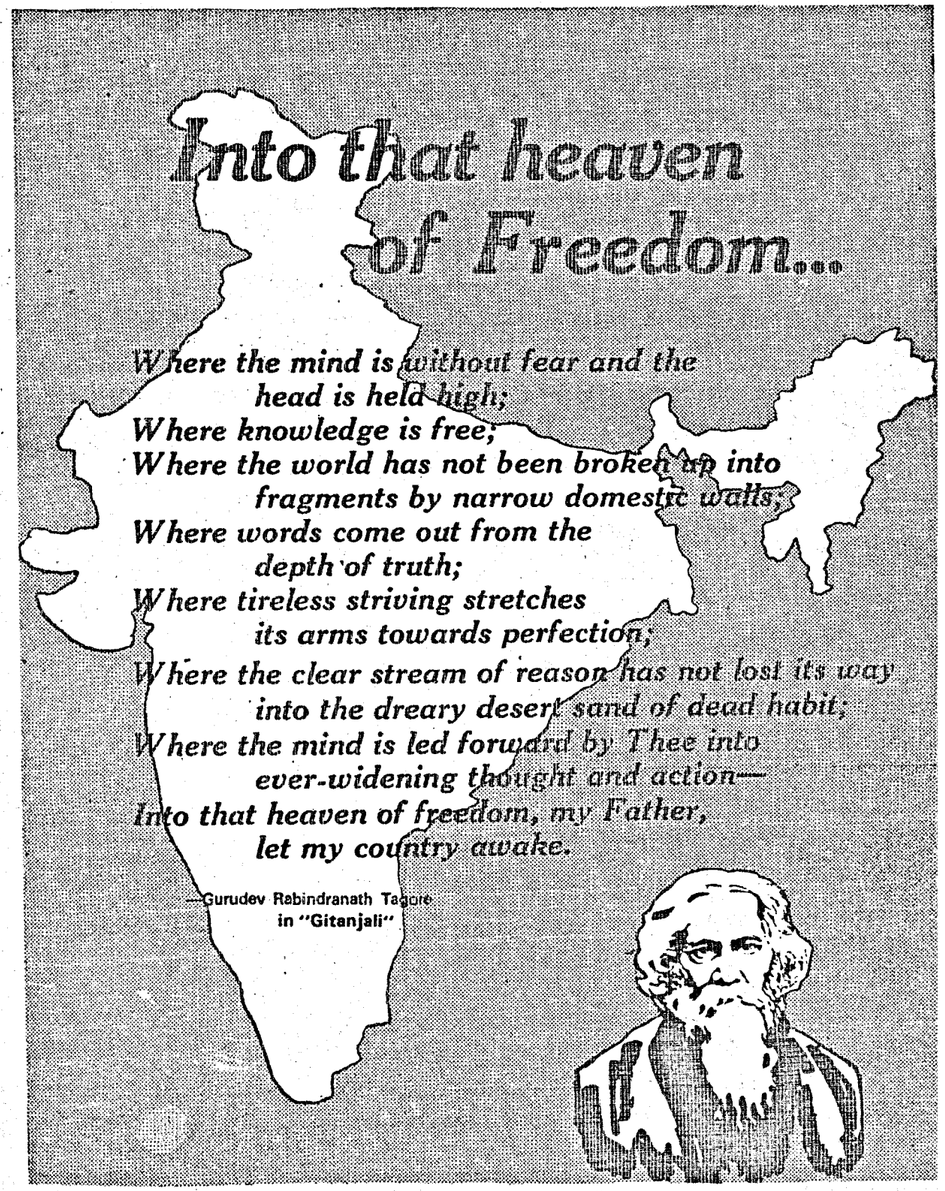
		Votes Secured
D. Gnanasigamoni	CPM	32,628
A. Asary	INC	3,165
S. Kesari Selvaraj	Ind.	299
S. Sathiadas	Janata	13,695

234. KILLIYOOR

Electorate	95,659
Votes Polled	43,455
Valid Votes	43,229
Invalid Votes	226

		Votes Secured
P. Vijayaraghavan	JANATA	34,237
K. Thankaraj	INC	8,309
T. John Issac	Ind.	683





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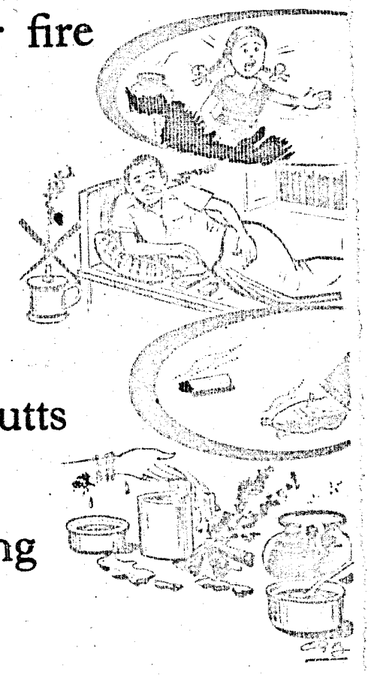
Prevent Fire Accidents

Do not allow children near fire



Avoid smoking in bed

Use lamps with chimneys

Put out burning cigarette butts

Extinguish fire after cooking

Indifference is the cause for fire accidents

PREVENTION OF FIRE ACCIDENTS IS THE DUTY OF ALL

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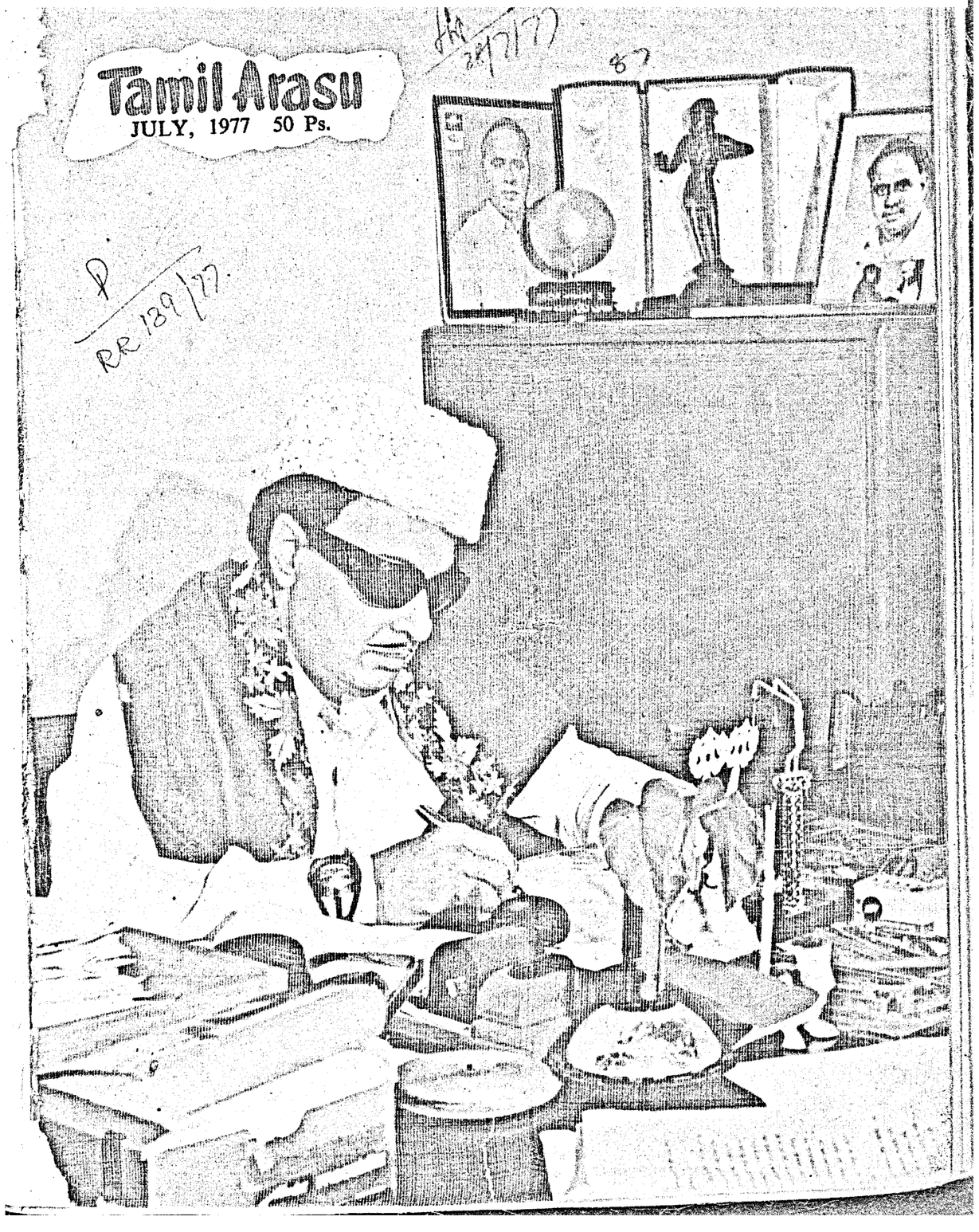
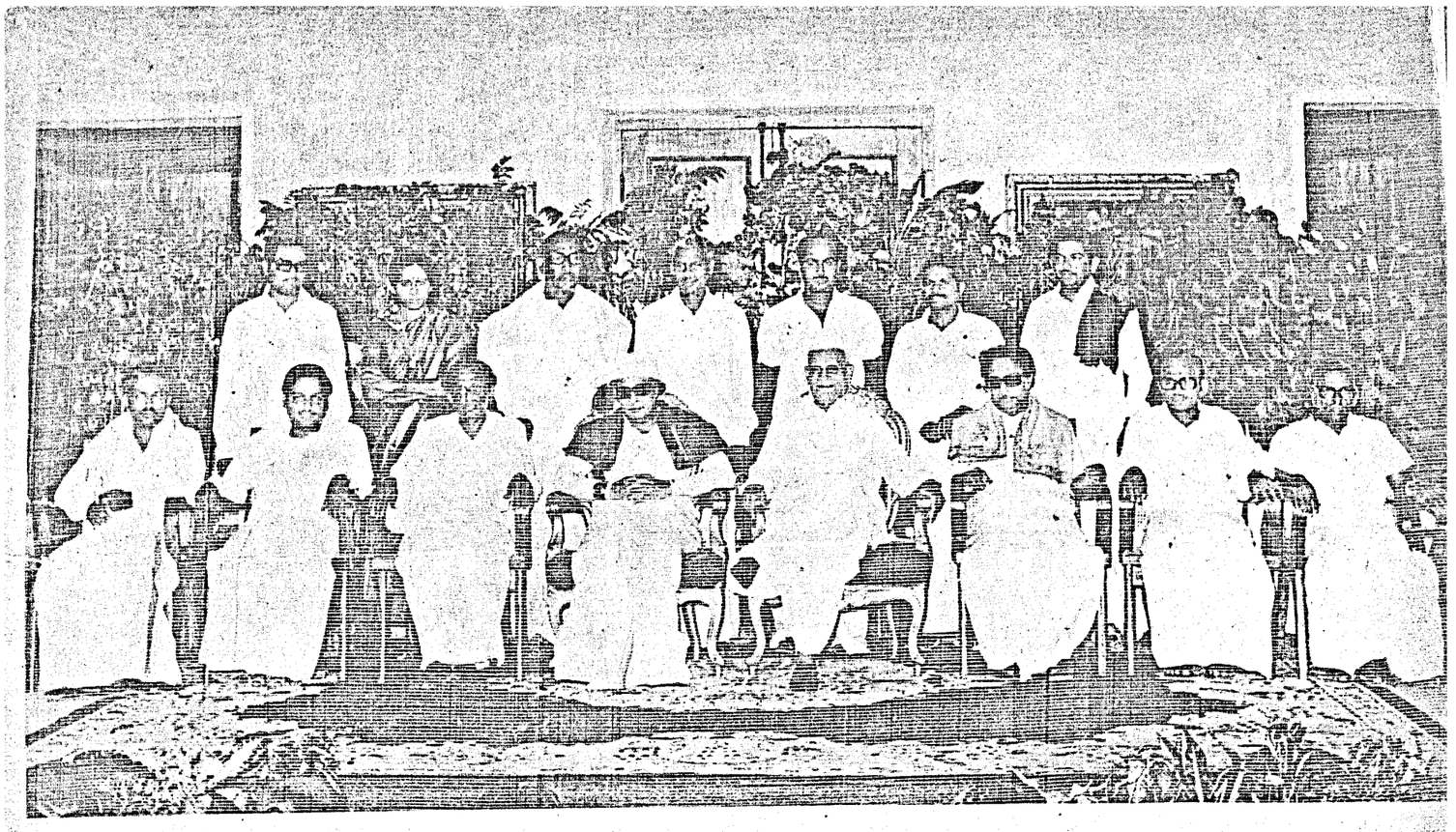
RR 139/77





THE TAMILNADU CABINET

Thiru M. G. Ramachandran, Chief Minister, garlanding the statue of his mentor the late Perarignar Anna.

Tamil Arasu

VOL : VIII JULY 1977 ISSUE : I

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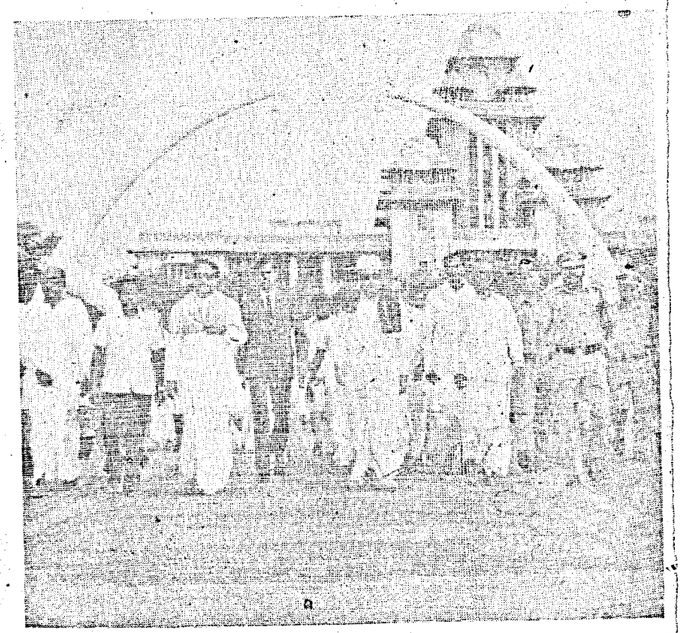
Front Cover
Courtesy : BOMMAI

The Governor of Tamil Nadu, Thiru Prabhudas Patwari, receiving Thiru M. G. Ramachandran founder of the AIADMK at Raj Bhavan.

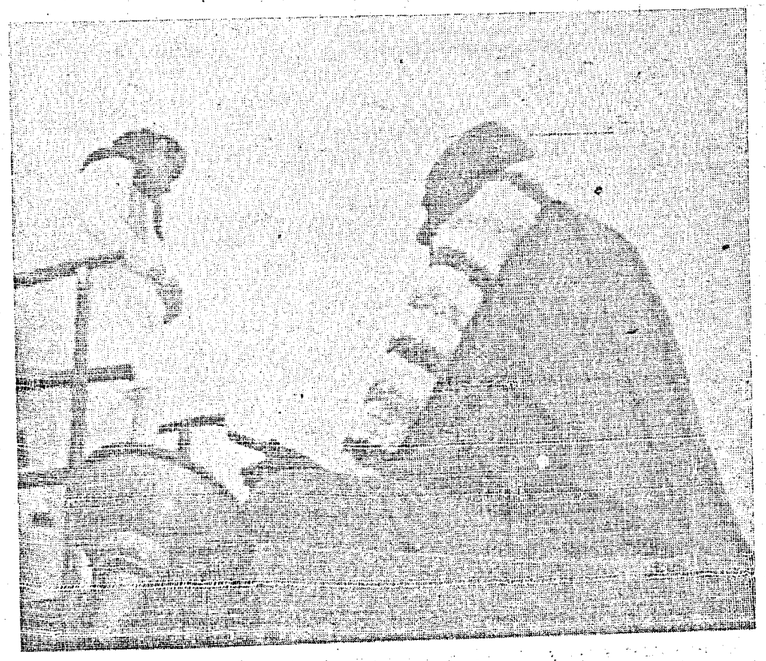
Thiru M. G. Ramachandran handing over the list of cabinet members to the Governor. Thiru K. Manoharan accompanied Thiru M. G. Ramachandran.

Thiru M. G. Ramachandran paying his mark of respect to Mahatma Gandhi, the Father of the Nation is seen garlanding his Statue at the Marina.



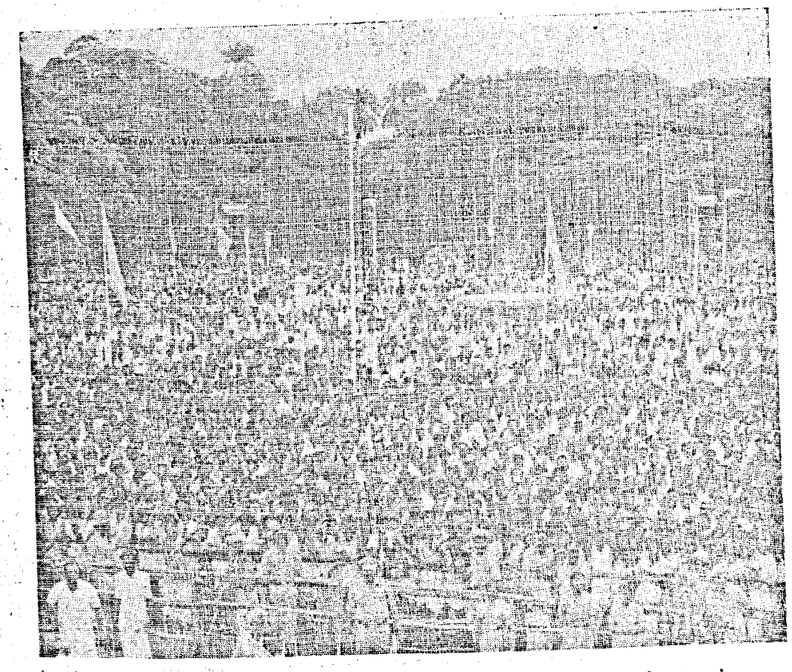
Thiru M. G. Ramachandran and his colleagues visiting the Anna square to pay their respects.

Thiru M. G. Ramachandran and his colleagues pay homage at Anna Samadhi.



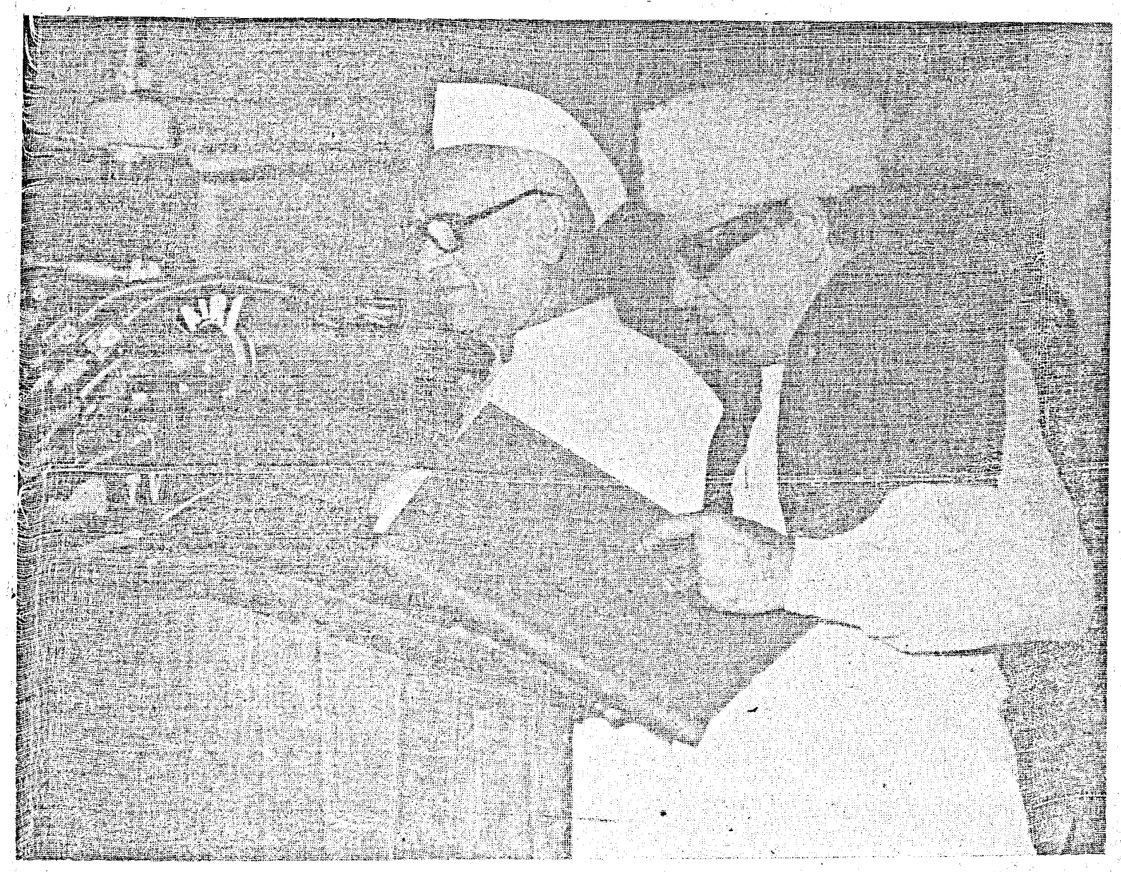
Thiru M.G. Ramachandran garlanding the statue of Periyar Ramaswamy, the founder of the Dravida Kazhagam.

Thiru M. G. Ramachandran being received by the Governor of Tamil Nadu Thiru Prabhudas Patwari at the Rajaji Hall.

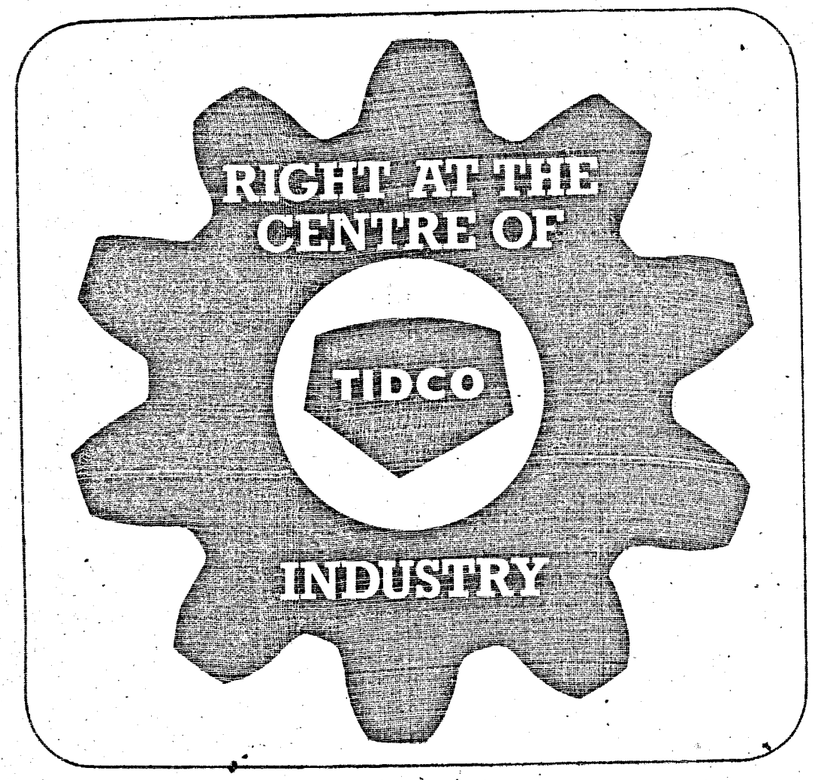


A vast crowd gathered before the Rajaji Hall to witness their beloved leader being sworn in.

Thiru M. G. RAMACHANDRAN sworn in as Chief Minister of Tamil Nadu



The Governor Thiru Prabhudas Patwari is reading out the oath at Rajaji Hall.



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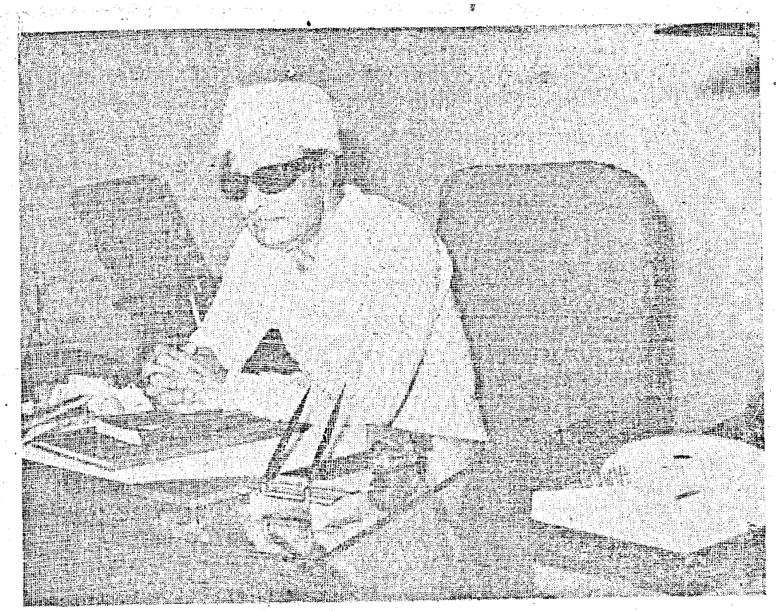


C. M.'S MESSAGE TO THE PEOPLE OF TAMIL NADU

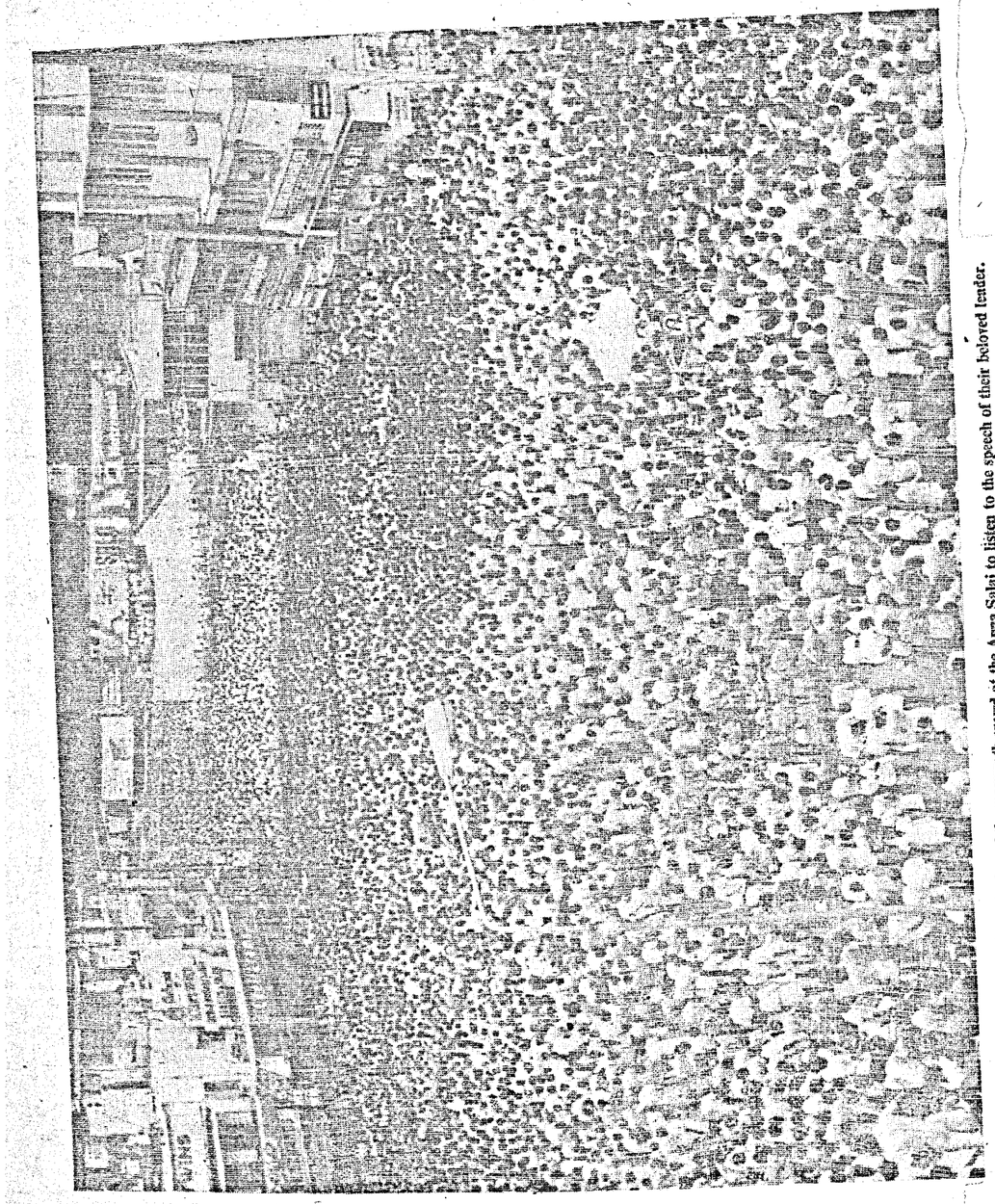
In a message to the people on his assumption of office, the Chief Minister of Tamil Nadu Thiru M. G. Ramachandran said he considered it his foremost duty to uphold the ideals of our late leader Anna and implement them. In 1967, the people had voted to power beloved Anna in a hope that they would be in a position to enjoy the fruits, of his (late Anna's) tenure of office. Unfortunately, he was snatched away from their midst by the cruel hands of death. He felt that a duty had now been cast on him to fulfil the aspirations of the people by implementing the ideals of their leader.

Thiru Ramachandran said he was determined to root out corruption, bribery and favouritism. He believed in giving prominence to those who toiled hard and that every one should be treated alike with out any caste or other distinction.

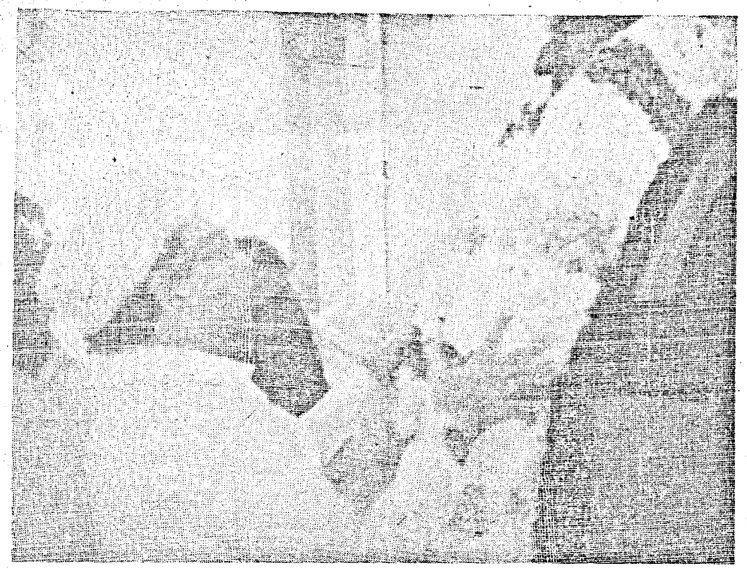
The Chief Minister said the people had voted the AIADMK to office in order to have a clean administration and added he would certainly live up to their expectations. He said he and his party would strive hard to bring in far-reaching measures for the benefit of the people. If any one attempted to create obstacles he said, he would go to the people and seek their advice in dealing with the obstructionists unmindful of the high positions they might occupy.

Thiru Ramachandran promised to utilise fully experts' knowledge, experience and counsel in evolving progressive schemes to fight poverty in the State. On Prohibition, he said, his Government would take vigorous steps to implement it to bring cheer to the womenfolk. He felt the dry law could be enforced effectively by carrying out intensive propaganda on the evils of drinking and by putting an end to illicit distillation of arrack.

He said he would not hide any thing from the people and added that with the confidence reposed in him, he would steadfastly work for improving their conditions.



A view of the mammoth crowd at the Anna Salai to listen to the speech of their beloved leader.



The C.M. of Tamil Nadu, Thiru M.G. Ramachandran visited the Rajaji Memorial and is seen garlanding the statue of the elder statesman.

The C.M. of Tamil Nadu, Thiru M. G. Ramachandran is seen paying his respects at the Kamaraj Memorial.

Thiru RAJA MOHAMMED

After assuming Charge as the Chief Minister of Tamil Nadu, Thiru. M. G. Ramachandran pays his respects to Thiru. Ravi Sankar Maharaj the Sarvodhaya Leader.

WE WILL FOLLOW ANNA'S IDEALS

Dear ladies and beloved brothers,

I would like to take a vow in the name of our beloved Anna.

The function which took place at Rajaji Hall was a formal function. The function which takes place here is an informal one where we seek your good wishes.

The Voice of the People is the voice of God

Anna believed that the voice of the poeple is the voice of God and we, as the people's representatives will fulfil this objective.

We will serve not only the people of Tamil, Nadu, but also the Tamils settled in other States.

Anna said that the representatives chosen by the people have to give a shape to the wishes of the people through the process of legislation and fulfil them. We will carry out this mission even if we have to give up our lives in the process.

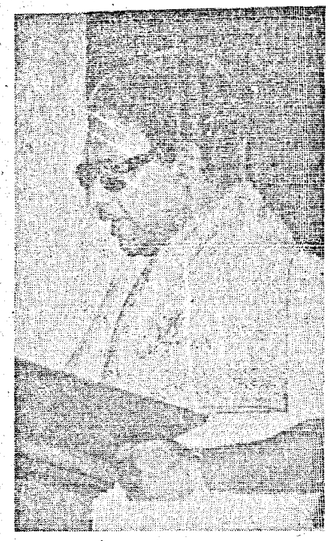
Clean Administration

We will pledge ourselves to give a clean administration which will be free from corruption and will not interfere with the judiciary. We are prepared to make any sacrifice to achieve this cherished objective.

Now, we seek your blessings to accomplish our work.

Long live the name of Anna.

(Thiru M. G. Ramachandran addressing a gathering at Anna Salai after assuming charge as Chief Minister of Tamil Nadu.)

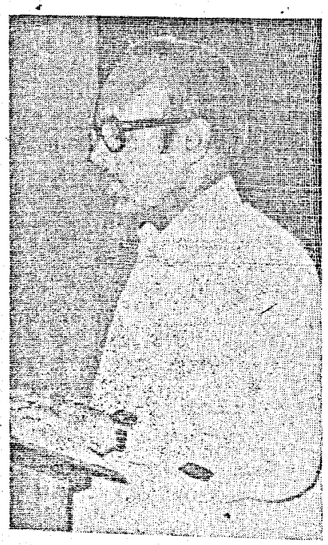


Thiru K. MANOHARAN

Thiru S. RAMACHANDRAN

Thiru K. NARAYANASWAMY MUDALIAR

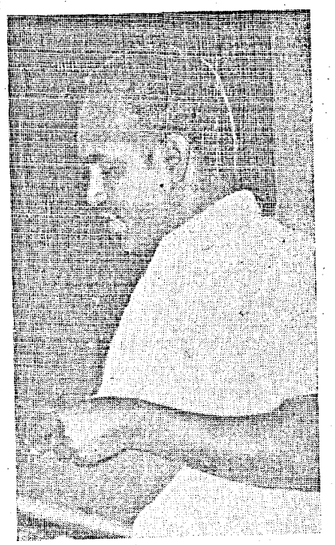
Swearing in



Thiru G. R. EDMUND

Thiru R. M. VEERAPPAN

Thiru S. ARANGANAYAGAM



Thiru K. KALIMUTHU

Thiru S. RAGAVANANDAM

Thiru P. SOUNDARA PANDIAN

# of Ministers

Thiru C. PONNAIYAN

Selvi P. T. SARASWATHY

Thiru P. KULANDAIVELU

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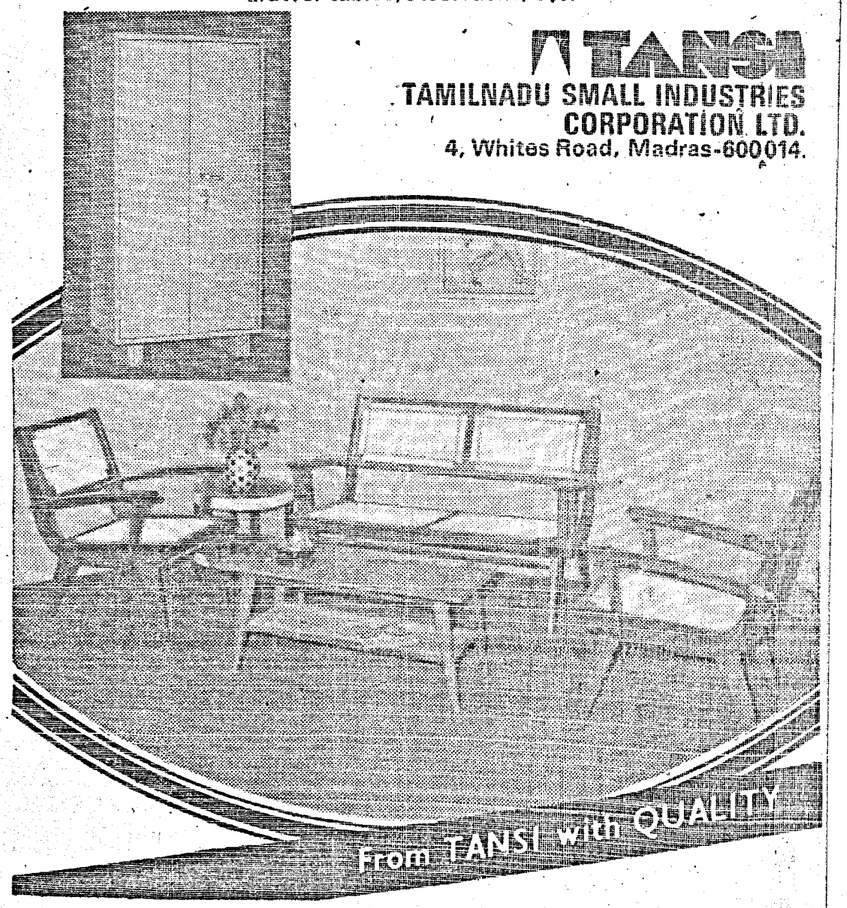

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Let us work together and Strive for a resurgence in Tamil Nadu

C. M.'s Speech

Mr. Chief Secretary, Honourable Ministers, ladies, learned members of the audience, my beloved brothers and colleagues :

It gives me great pleasure to find that the Tamilian retains that rare sense of humour amidst all his miseries and difficulties as brought out by those who spoke here.

To-day, we have been sworn in as the Chief Minister and Ministers of Tamil Nadu. We have not taken charge on the strength of our ability or experience. Though you are already aware of it, I consider it my duty to apprise you of this fact.

The Chief Secretary has clearly outlined the duties of Government servants. He has also explained how it includes the co-operative effort of all of you here and has assured us of your help. Thiru Rangarajan and Thiru Munusamy, while declaring that they "do not want anything," have brought out their demands.

You will definitely agree with me that it will be sheer ignorance to imagine that the problems of the country could be solved within a period of five or six years during the time a party is in power. You are still working hard for the progress of the country inspite of your experience of 30 years. Different Governments are established periodically according to circumstances. You know well what could be achieved by a Government in five or six years.

History has shown us that if a person in a moment of pride forgets the fact that the people have placed faith in him, but exults in his present glory, the consequences will be disastrous.

Your knowledge and experience are the property of the Nation

I deem it a duty to very humbly place before you an essential fact. I would like to emphasize to you, the facts that your ability, experience, intelligence and knowledge are all the property of the nation. Nobody can deny the fact that when a man earns, he places himself and his family before everything. However, the results of work and how such work can help others, I have no doubt, will be the basis on which a country respects a person and his ability.

Who decides the country's destiny :

A country's destiny is decided by its people. This is a fact in a democratic set up. But it should not be forgotten that those who guide the destiny of the country and meets the needs of the people are responsible people like you. I have drawn attention to this fact a number of times.

Let us change the term "Servant":

We have come here to understand you. I would like to very humbly tell you, that I dislike the word Servant. No one should be a servant for another in Tamil Nadu. I am greatly concerned about this and my desire is to change this designation soon.

Your responsibility :

Why do I say this. You who work for the country are its owners. You have a great responsibility in working for the uplift of the women and children and enhancing the prestige of Tamil Nadu. You have the responsibility to discharge these in such a manner that Tamil Nadu will be the envy of the learned persons in other States and countries.

In 1967, Tamil Nadu placed its faith in immortal Anna. Nobody can deny the fact that the people chose to do so after realising the fact that the ideology of Anna was good for us and was the only way out. We are here today because again a situation has arisen, when Anna's ideologies have to be followed. We told the people that Anna's policies should be implemented so that the needs of the people will be fulfilled. To-day we have been elected. It is not even five years since our party was formed. We have experienced many difficulties, trials and tribulations. Many youngsters have laid down their lives in this battle. I am not here to talk about out trials. However, let me ask you a few questions. How did a party come to power within a period of five years of its formation with the sympathy and support of the people ? What were the reasons ?

I do not claim that people have placed as much faith in us as they did in Anna. Nor do I say that the people believe that I have the ability to rule like Anna. Then how did this change come about in this short period ? Let me humbly tell you that this has taken place because the people suffered a lot and because the needs of the people were not fulfilled.

I TAKE IT AS A WARNING

Certain analogies were given, while referring to their grievances. These were very interesting. There

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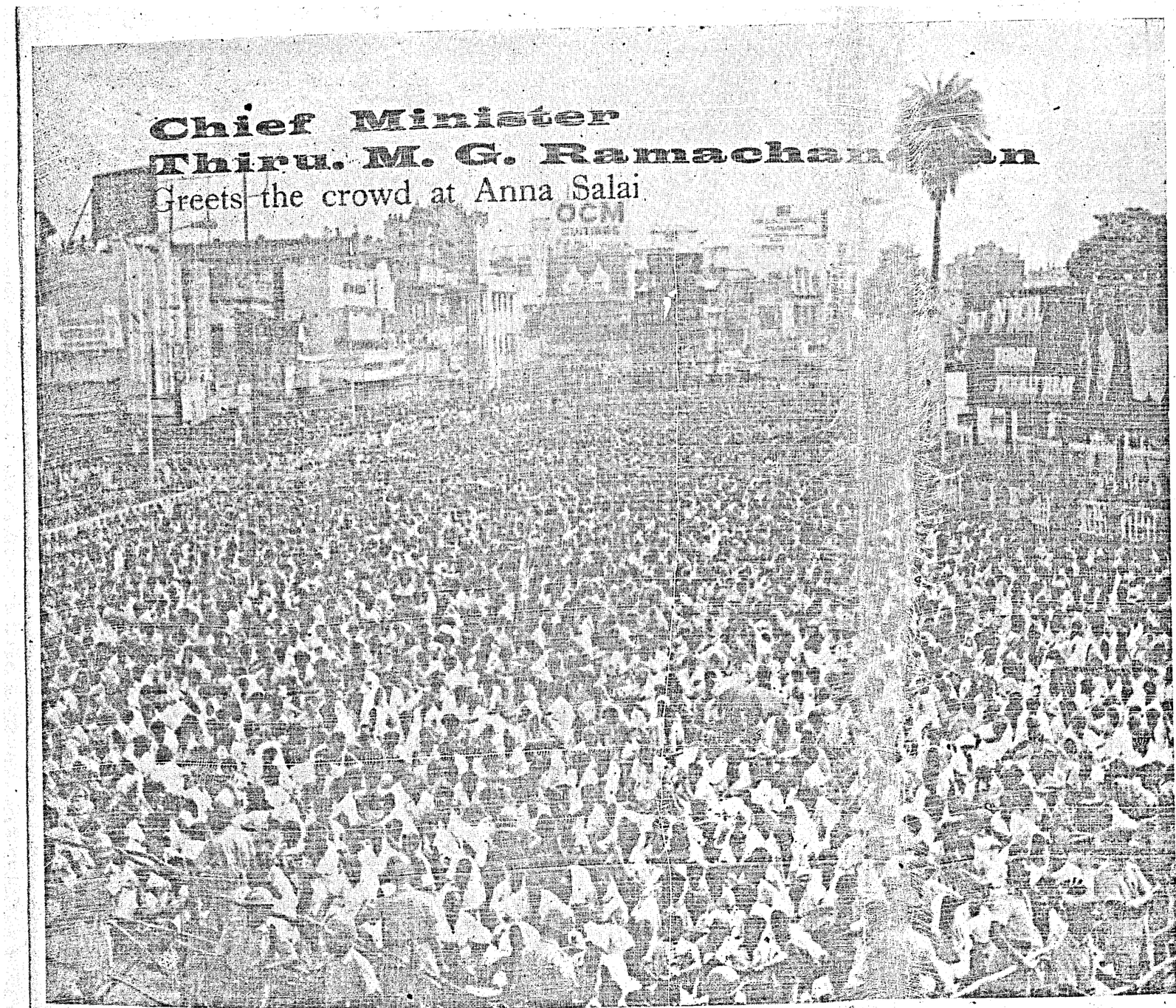


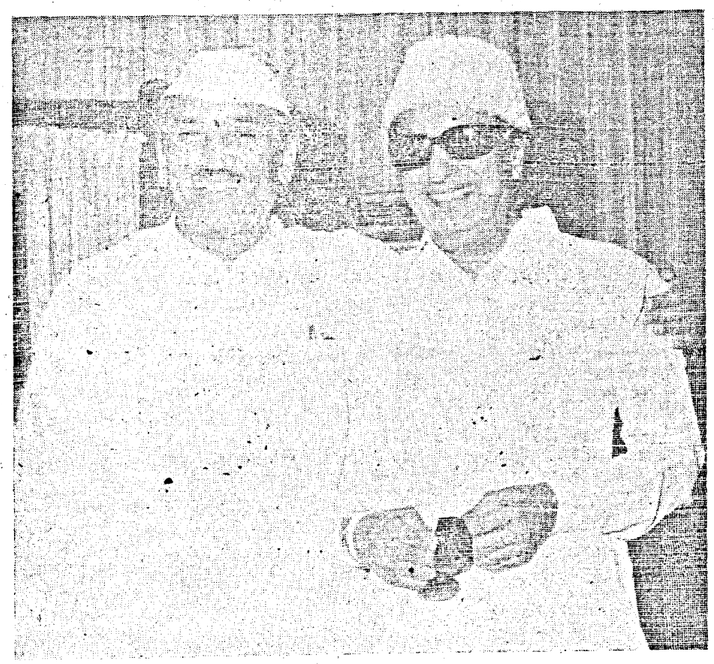
Chief Minister
Thiru. M. G. Ramachandran
Greets the crowd at Anna Salai

EFFECTS OF AIR POLLUTION

Air Pollutant (1)	*Typical Sources* (2)	*Effects* (3)
Sulphur dioxide	Power Houses, Sulphuric acid plants, Petroleum industry, Oil Refining, Domestic use of fuel	On Man—Suffocation, irritation of throat and eyes, respiratory diseases. On Vegetation — Destruction of sensitive crops and reduced yield.
Hydrogen Sulphide	Viscose Rayon plants, Petroleum industry, Sewage treatment, Tanning industry, Dye manufacture, Oil Refining	On Man—Irritation of respiratory passages, danger of respiratory paralysis and asphyxiation. On Property—Darkening of painted surfaces, corrosion.
Nitrogen dioxide	Acid manufacture, Automobile exhaust, Explosive industry	On Man—Irritation, Bronchitis, Oedema of lungs.
Hydrogen Fluoride	Fertilizer industry, Chemical industry, Aluminium industry	On Man—Irritation, diseases of bone (fluorosis), mottling of teeth, respiratory disease. On Vegetation—Destruction of crops. On Animals—Fluorosis in cattle grazing on such vegetation.
Carcinogenic Hydrocarbons	Organic chemical industry, Vehicular traffic specially automobiles	On Man—Cancer.
Dust	Mines and Quarries, Pottery and Ceramics, factory stacks, power stations	On Man—Respiratory diseases, Diseases like silicosis, asbestosis etc. from specific poisoning from metallic dusts. On Property—Soiling effect and Corrosion.
Carbon monoxide	Fuel gases, exhaust emissions from automobiles, Mines, Blast furnaces	On Man — Poisoning, increased accident liability.
Oxidants	Photo-chemical products from the organic material irradiated in the presence of nitrogen dioxide. By silent electric discharge and by intense ultra-violet radiations.	On Man—lung irritation. On Vegetation—destruction of vegetation. On Property — deterioration of rubber products such as tyres, insulating wires, etc. In general smog formation is due to interaction of ozone (formed photochemically) and Olefins (from autoexhaust & certain industries) in the atmosphere. Smog formation is not extensive in tropical countries like India.

Courtesy : Dr. B. B. Sundaresan

The Chief Minister of Tamil Nadu, Thiru M. G. Ramachandran discussing with the Union Home Minister Thiru Charan Singh.



The Chief Minister of Tamil Nadu met Thiru Bahuguna, Union Minister for Petroleum.

etc. It is not easy to solve them. Many people have declared that they have done so merely by furnishing statistics. However if we look up the problems that I have listed out you will, realise that our work so far has not been enough. There should be a change in our way of preparing plans. You should keep in mind that our basic approach to the problems and solutions has to change.

People have referred to plans, programmes and the results thereof. They say that the rich have become richer, the poor, poorer. They point out that if it was Tata in the past, today it is Birla who is at the top.

Experts have repeatedly pointed out that no one has given proper direction to the planners.

May I make a request ? Please consider these facts when you present the budget or draw up plans. We have to make changes in the very basic structure. Unless we bring about a great change in the economic structure, we cannot achieve anything. Only you can help us in this transformation.

All of us are human beings. All belong to once race, one community. Based on Anna's belief that there is only one race and one God, I firmly feel, if we stand united without discrimination, without being subjected to petty thoughts, and work with concentration, we can achieve many things. We can make people in other States, and even those in other countries, feel and know that within five years Tamilians have progressed considerably. I am convinced of this and I have pleasure in saying so. You must help and co-operate to bring about this change.

Hence, I am emboldened to say, "take what you want, give the rest to us," rather than saying we will give you this much, you can apportion how much should be given to the people. I will definitely not interfere. You can achieve a lot if you want to do so. If the taxes are not enough, you can raise it without extra strain to the people. As an outsider, I could observe that nearly Rs. 70 to Rs. 80 crores of direct taxes do not reach Government exchequer. I appeal to you to plug the loopholes. I will be on your side.

What I have said might appear contradictory to you. On the one hand, I tell you to collect taxes and on the other I ask you to take what you want. But please do not misunderstand me. We want to satisfy your needs and we will definitely try to do it. I say this wholeheartedly.

Lastly, I would like to say that the people of Tamil Nadu are impatient. The people in the villages and rural areas are tired of talking about their miseries . People have waited patiently, suffered for long, finally resulting in hatred, anger and disgust against society. We should see that such a situation does not arise.

I would like to make a humble request. One cannot imagine the possible consequences of people's frustration, misery and hatred. This country cannot bear that. We should change our economic policies and try to draw new schemes based on which we can provide for the people's needs and necessities. These schemes should also be quickly implemented. Law and threats cannot put down the aspirations of a people. This will not last for a longtime. We should save Tamil Nadu from a path of chaos.

I feel it my duty to tell you this, now that I have taken over responsibility. A great responsibility has been thrust upon us in the year 1977.

My friend made a comparison between 1967 and 1977. In 1967, Anna was alive. Today I am a commoner. But I can reflect the thoughts and frustrations of the people. If you realise these, help us. I can definitely say that your name will go down in history. I would like to remind you by assuring you, that I will be a worker, friend and companion for you and try to fulfill your desires. May I thank the Chief Secretary, friends and the patient audience who have given me this opportunity to express my hope and desire that we should continue to work together, striving for a resurgence in Tamil Nadu ? I will take leave of all you good people saying "long live Anna's name."

—Chief Minister of Tamil Nadu, Thiru M. G. Ramachandran addressed the Officers' Association and the Secretariat Staffs' Association at the Secretariat Parade Square on 30—6—1977.

Let us change our economic policies to provide for the people's needs

ALL-INDIA TAMIL WRITERS' CONFERENCE

The Prime Minister Thiru Morarji Desai inagurated the All India Tamil Writers' Association at Rajaji Hall on 4th June 1977.

The Prime Minister, Thiru Morarji Desai, declared that there could be no greater vilification of the Government's policies than the propaganda that Hindi would be forced on the Tamil people and that Tamil would become a secondary language. He was inaugurating the All-India Tamil Writers' Association, at a function in Rajaji Hall.

The Prime Minister said all Dravidian languages had their inspiration in and, to a large extent, were based on Tamil. The rest of the languages in the country had their base in Sanskrit. But, it was a striking fact that Sanskrit scholars were more profound in the South than in the North. "That is the versatility and genius of people here," he said.

Another striking fact of history. Thiru Desai said, was that whenever the country was invaded from the North, the South particularly Tamil Nadu could not be subdued. Therefore, whereas Persian was adopted as a court language in the North and East, it was not known to people here—" this is also the reason why Hindi did not penetrate here." It showed the vitality and virility of people in the South. But vitality and virility would get atrophied if they did not keep pace with time. " I want you to consider this. It is not for me to advise you," he told the writers.

Stating that, Tamil literature had a great future, the Prime Minister said, in a country like India, where people were not united for centuries, there should be complete unity not only through the Government, but through the people's hearts. In this, men of literature had a role to play and much depended on their capacity and genius to propagate sound ideas and make an impact on the people. He hoped the Association of Tamil Writers—rightly made an all-India body would contribute greatly to scotching all controversies and fighting the divisive forces which had weakened the country in every way.

I am Alcohol

I am the greatest criminal in histroy. I have killed more men than have fallen in all the wars of the world. I have turned men into brutes. I have made millions of homes unhappy.

I have transported many ambitious youths into hopeless parasites. I destroy the weak and weaken the strong.

I make the wise man fool and trample the fool into his folly. The abandoned wife knows me; the hungry children know me.

I have worried millions and shall try to ruin millions more. I am alcohol.

H. W. Gibson.

Making of the Budget

A small leather bag containing the Annual Financial Statement

by
Thiru S. GUHAN, I.A.S.,
Secretary to Government
Finance Department

The word 'Budget' itself is not used anywhere in the Constitution of India. It is not a legal te[illegible] originally meant a small [illegible] in which the Chancellor [illegible]hequer in Britain carried [illegible]al proposals for the year [illegible] entered the House of [illegible] to present them. Usage [illegible] the meaning of the word [illegible]bag to its contents. The [illegible]valent of this word namely [illegible]*Varavu-Chelavu Arikkai*' [illegible]e meaning more exactly. [illegible] expression used in the [illegible]n is the "Annual Finan[illegible]ent."

[illegible]udget is organised in the form of three main divisions *viz.*, the Revenue Account, the Capital Account and the Public Account. In each account, actual incomes and expenditures in the year are estimated and entered in the form of a double entry cash book.

Revenue receipts consist of tax and non-tax revenues and grants received by the State Government. Revenue expenditures are mainly salaries and allowances, maintenance outlays, interest payments, pensions and grants from the State Government to local bodies and other institutions. If Revenue receipts exceed revenue expenditures, we have a revenue surplus which shows that current savings are available for financing capital expenditures. Vice-versa, there is a revenue deficit which indicates that a part of current expenditures are being financed through borrowing.

The capital account record investment expenditures on buildings, roads, irrigation, machinery and equipment, share capital investments and so forth. Loans and advances given by the State Government are also a part of the capital account. Recoveries on these loans and fresh loans and advances received from the Centre and from other sources are featured on the receipts side of the capital account.

The Public Account, which is the third main division of the Budget, relates to transactions in which, broadly speaking, Government acts as a banker in receiving, retaining and returning various monies. These could be deposits from local bodies and public sector corporations, funds created by Government, provident fund amounts and deposits from private persons such as contractors.

The net effect of the opening cash balance and of all the transactions in these three accounts gives the closing cash balance at the end of the year. This figure is referred to as the overall surplus or deficit in the Budget depending upon whether it is a plus or a minus.

Having described the broad structure of the Budget, we can now proceed to outline the process of its formulation. In making the budget for any particular year, the first charge on available resources are expenditures relating to schemes which have already been sanctioned by the Government. Similarly, on the receipts side, we can, to start with only take into account taxes currently in force and other receipts which are firmly in sight. This part of the Budget which is framed, so to speak, on the basis of the status quo is called Part I of the Budget. It is prepared between October and December of the year.

Meanwhile, from about September onwards, each spending department of Government formulates a number of new schemes or Part II schemes which contain their ideas for initiating new projects, for upgrading or expanding existing developmental programmes or for toning up the general administration. These schemes, which number about four to five hundred in all, are arranged by each department in an order of priority and are also kept within an overall financial ceiling which is indicated to them in advance. Each of these schemes is examined in detail in the Finance Department.

Part II proposals are discussed and approved at about the end of December by the Standing Finance Committee which is a Committee of the Cabinet presided over by the Chief Minister. The Committee usually sits for two full days and carries out an intensive review of the various proposals for new schemes submitted by the departments. Individual schemes are either accepted in toto or rejected outright or suitably modified. In the course of this review, inter-sectoral and intra-sectoral priorities are brought out.

In January, we are in a position to pull all the threads together. An overall picture is available now of the expenditures side consisting of Part I expenditures on ongoing schemes as well as proposed expenditures on Part II or new schemes to be initiated in the coming financial year. It is ensured that Part I and Part II estimates on Plan schemes are together con-

The Standing Finance Committee sits through the Cold December

sistent with the overall Plan outlay. At about the middle of January, the final round of discussions on the Annual Plan are held between the Deputy Chairman of the Union Planning Commission and the Chief Minister. In the light of these discussions, outlays are further trimmed to conform to the size of the agreed Plan. By this time, estimates of revenues from existing taxation and estimates of likely receipts from the Centre are also updated. The result of the overall exercise at this stage is most likely a deficit which will have to be covered.

As is well known, deficits can be covered only by reducing expenditures or by increasing receipts. Assuming that Part II proposals are approved applying strict tests feasible and acceptable in that particular year given, of course, the necessary political will and effort.

The Budget gets its final executive approval in a Cabinet meeting held some time in late January. The joint responsibility of the Cabinet thus comes into full play at all stages of Budget formulation, since it is the Cabinet or one of its Committees which approves of new schemes, the overall magnitudes of the Budget and the specific tax proposals.

After about an interval of a month which is taken for the printing of the various Budget documents, the Budget is presented to the Legislature in the beginning of March.

tance and the uses of the Budget. It is firstly the instrument for legislative scrutiny, sanction and control over Government expenditure. Secondly, the Budget provides the basis for overall financial control and management to the Administration. Thirdly, the Budget documents which are detailed and comprehensive, enable us to ask and answer such questions as the following :—

—Is Government living within its means ?

—Are current savings available for financing capital formation ?

—Do Annual Plan priorities adequately reflect not only current popular desires but also the long-term interest of the State ?

The Budget promotes cost-consciousness, a sense of economy, of efficiency, of priorities proportions and purpose.

of essentiality and economy, there is no further scope now for cutting down on new expenditure. Economics in existing expenditures may however be possible and the scope for this is fully explored. In the matter of receipts, estimates of yields from existing sources are stretched out somewhat taking into account possible buoyancy and a better collection effort.

All this having been done, the only other method available for covering the residual gap, if any, is fresh taxation. In evolving tax proposals, we try to ensure that they satisfy the standard criteria of simplicity, equity, yield and economy in collection. We also try to tailor both the nature and the quantum of the measures to what might be

I woull now like to sum up with a few words on the import

—Is an effort being made to improve the State's resources base, to collect taxes that are due and to effect economies in non-essential expenditure ?

The Budget is thus at once an instrument for promoting cost-consciousness a sense of economy and of efficiency and a sense of priorities proportion and purpose. It is for this reason that a critical understanding of the Budget is necessasy and useful not only to the legislator and the administrator but also to the tax-payer, to the student of public affairs and to the citizen at large.

—*Courtesy:* **All India Radio**

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PORT-FOLIOS OF MINISTERS

1. Thiru M. G. Ramachandran
Chief Minister

Incharge of Public, General Administration, matters relating to Indian Civil Services and Indian Administrative Service Officers, District Revenue Officers, Deputy Collectors, Police, Elections, Passport, Prohibition, Health, Medicine, Religious Endowments, Prevention of Corruption and Industry.

2. Thiru K. Manoharan
—Minister for Finance

Incharge of Finance, Planning, Commercial Taxes and Excise, Revenue, Legislature.

3. Thiru S. Ramachandran
Minister for Public Works

Incharge of PublicWorks,Minor Irrigation including Special Minor Irrigation Programme works, Mines and Minerals, Iron and Steel Control.

4. Thiru Narayanaswami Mudaliar
Minister for Law

Incharge of Law, Courts, Prisons, Legislation on Weights and Measures, Legislation on Money Lending, Legislation on Chits and Registration of Companies.

5. Thiru G. R. Edmund
Minister for Food

Incharge of Food, Food Production, Co-operation, Fisheries.

6. Thiru R. M. Veerappan
Minister for Information and Public Relations

Incharge of Information and Public Relations, Film Technology, Tourism and Tourist Development Corporation, Cinematograph Act.

7. Thiru S. Aranganayagam
Minister for Education

Incharge of Education including Technical Education, Official Language, Approved Schools, Employment and Training.

8. Thiru K. Kalimuthu
Minister for Local Administration

Incharge of Municipal Administration, Community Development, Panchayats, Panchayat Unions, Village Industry, Rural Industry Project, Rural Indebtedness.

9. Thiru S. Raghavanandam
Minister for Labour

Incharge of Labour, Housing, Slum Clearance Board, Statistics, Tamil Nadu Drainage and Water Board and Town Planning.

10. Thiru P. Soundra Pandian
Minister for Harijan Welfare

Incharge of Harijan Welfare, Backward Classes, Stationery and Printing, Government Press, Hill Tribes.

11. Thiru C. Ponnaiyan
Minister for Transport

Incharge of Transport, Nationalised Transports, Motor Vehicles Tax, Highways and Ports.

12. Selvi P. T. Saraswathy
Minister for Social Welfare

Incharge of Social Welfare including Women and Children Welfare, Animal Husbandry, Beggars Home, Orphanages, Vigilance Service, Indians Overseas and Refugees and Evacuees.

13. Thiru G. Kulandaivelu
Minister for Agriculture

Incharge of Agriculture, Agricultural Refinance, Agricultural Engineering Wing, Agro-Engineering Wing, Milk Dairy Development Corporation, Operation Flood Project.

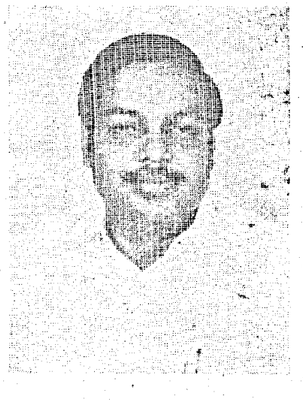
14. Thiru Raja Mohammed
Minister for Handloom and Textiles

Incharge of Accommodation Control, News Print Control, Service Co-operative Society & Block, District and Apex Level including Federation, Wakfs, Textiles, Yarn, Handloom.

Chief Minister and his Cabinet Colleagues

THIRU K. MANOHARAN
Minister for Finance

THIRU M. G. RAMACHANDRAN
Chief Minister



THIRU S. RAMACHANDRAN
Minister for Public Works

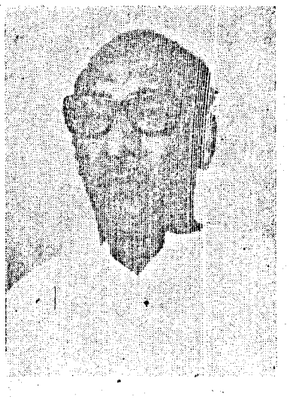
THIRU K. NARAYANASWAMY MUDALIAR
Minister for Law

THIRU G. R. EDMUND
Minister for Food

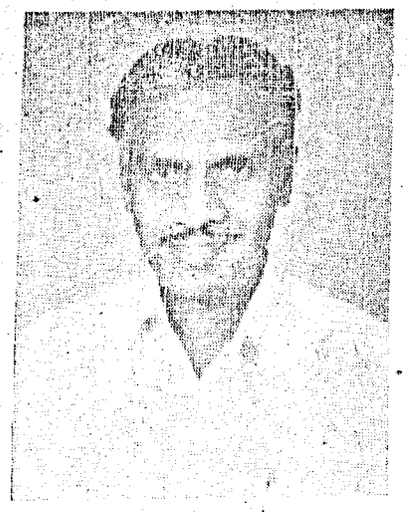
THIRU R. M. VEERAPPAN
Minister for Information & Public Relations

THIRU S. ARANGANAYAGAM
Minister for Education

THIRU K. KALIMUTHU
Minister for Local Administration



THIRU S. RAGAVANANDAM
Minister for Labour

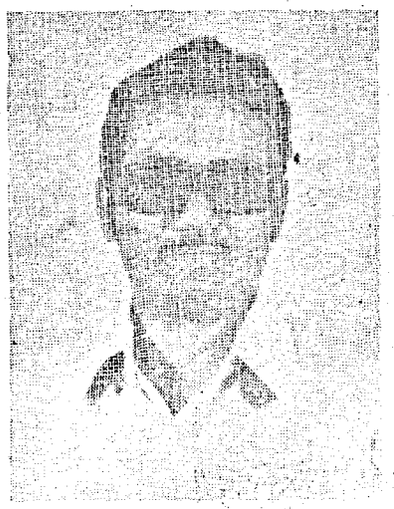


THIRU K. SOUNDARAPANDIAN
Minister for Harijan Welfare

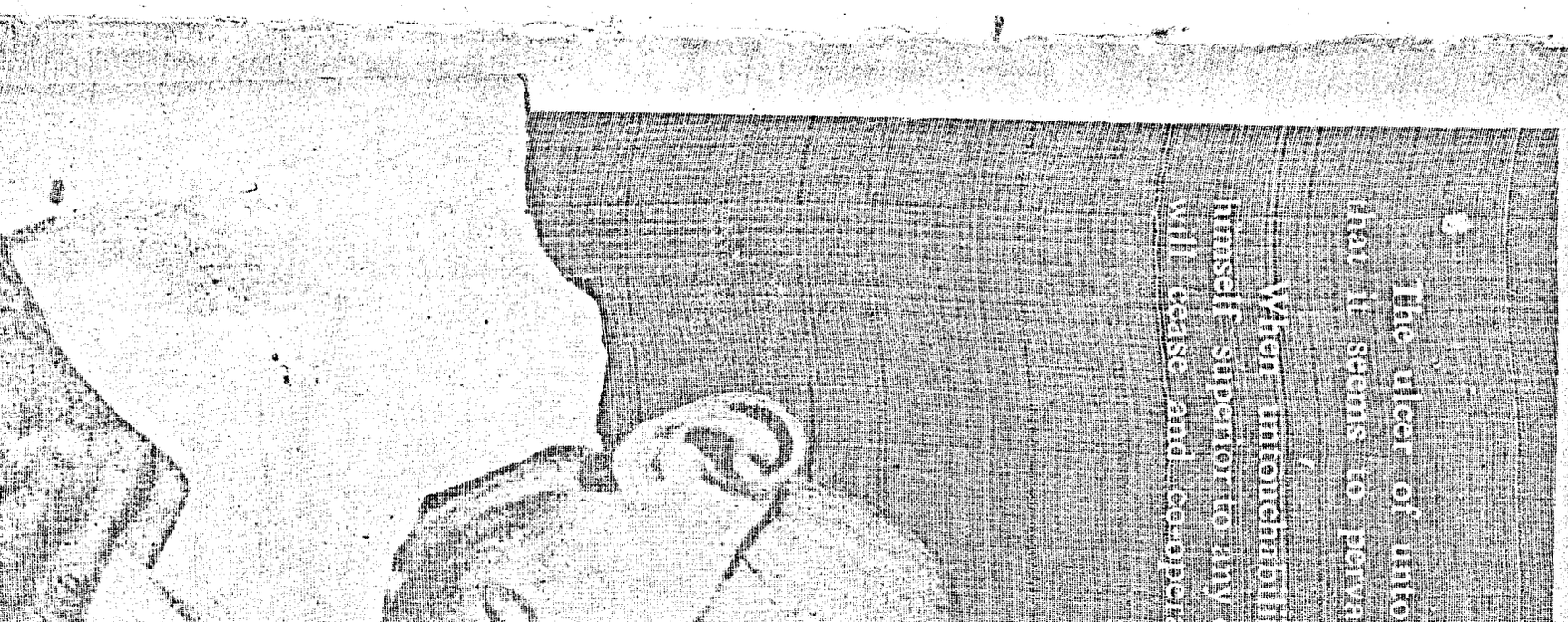
THIRU C. PONNAIYAN
Minister for Transport

SELVI P. T. SARASWATHI
Minister for Social Welfare

THIRU G. KULANDAIVELU
Minister for Agriculture



THIRU RAJA MOHAMMED
Minister for Handloom & Textiles



Regd. No. M. 8676-A

Prevent Fire Accidents

Do not allow children near fire

Avoid smoking in bed

Use lamps with chimneys

Put out burning cigarette butts

Extinguish fire after cooking

Indifference
is the cause for
fire accidents

PREVENTION OF FIRE ACCIDENTS IS THE DUTY OF ALL

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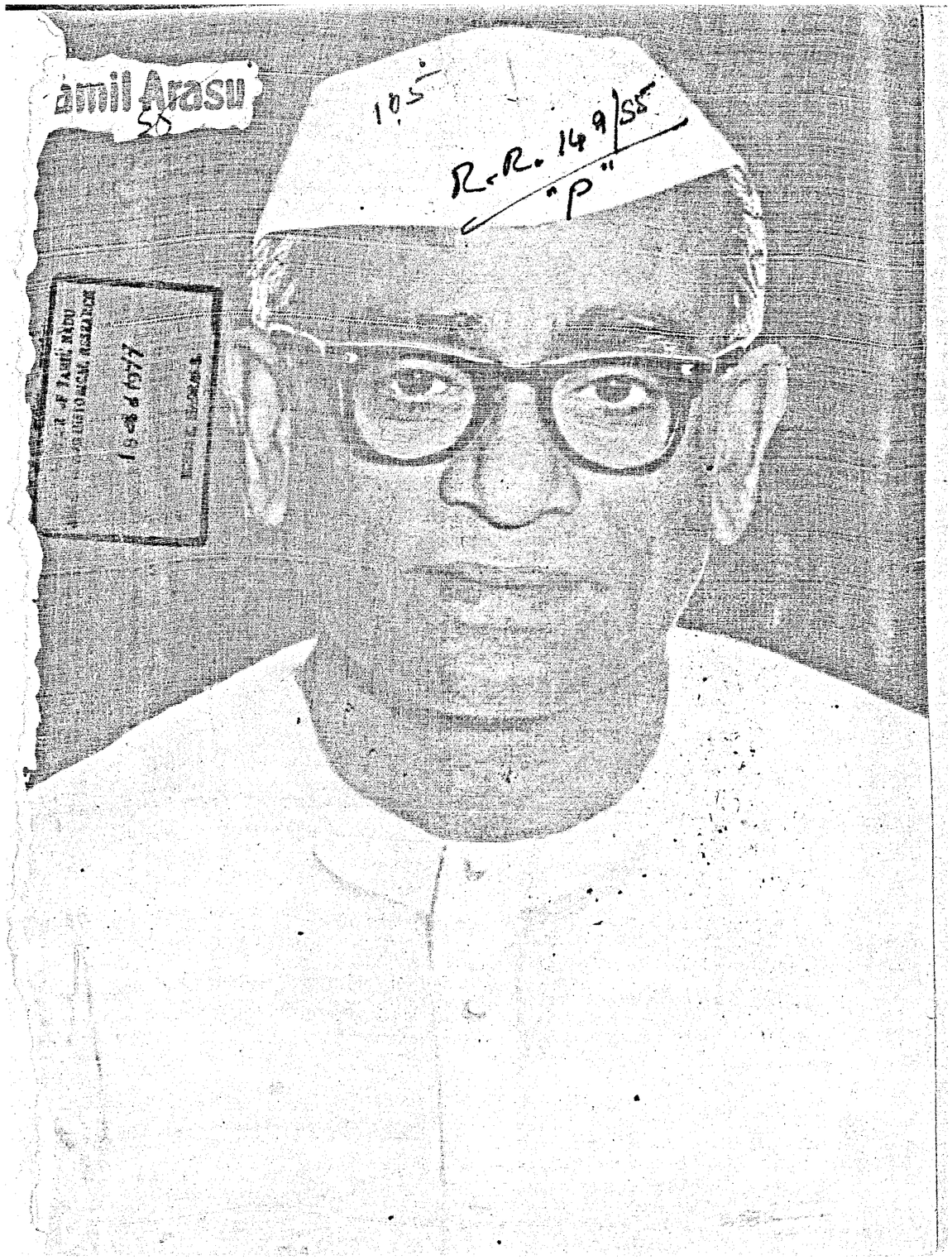
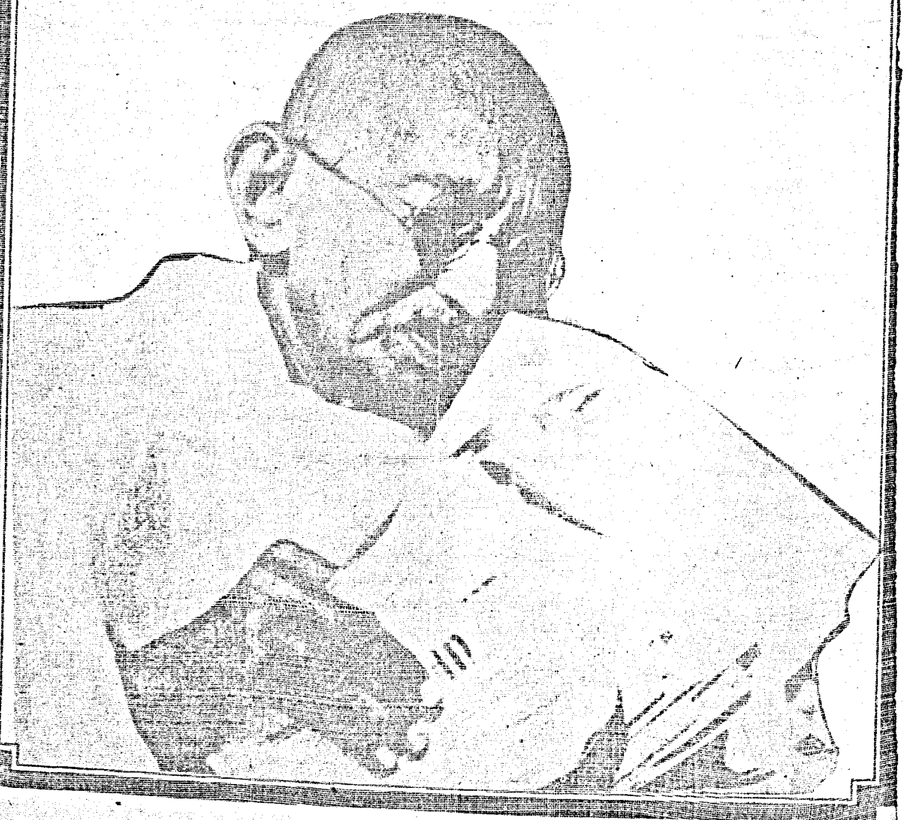


The ulcer of untouchability has gone so deep down that it seems to pervade our life.

When untouchability is rooted out no one will consider himself superior to any other. Naturally, exploitation too will cease and co-operation will be the order of the day.

Mahathma Gandhi.



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Tamil Arasu

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FM Broadcasts ensure a very high quality in reception

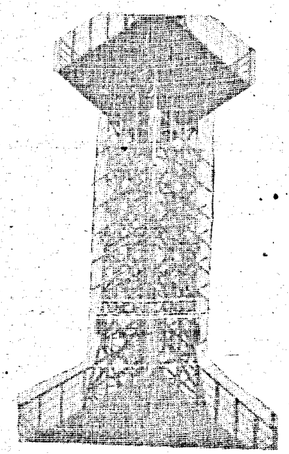
P.T.S. RAGHAVAN

You must be wondering about this FM broadcasting service over the AIR F.M. means frequency modulation. At present the AIR transmitters use what is known as an amplitude modulation. As a matter of fact my present talk is coming to you through an amplitude modulated transmitter. What is modulation ? As you know the microphone in front of me converts the sound of my words into electrical waves known as audio waves. The Madras-B Station to which you have tuned represents a radio wave of frequency 1,150 kilo cycles per second. The mixing of the audio wave with the radio or carrier wave is called modulation. At the receiver end a process known as detection removes the carrier wave to give you back the audio wave which is transformed into the original speech or music by the loudspeaker. I will give you an example. What do you do when you want to communicate something to your friend who is far away. You write a letter, put it in an envelope and post it to your friend. The envelope is similar to the carrier wave. When your friend gets that letter he opens and throws out the envelope to get letter inside. This is similar to the process in your receiver.

The carrier wave so called because it carries the audio signal you want, is the radio wave to which you tune your set. These waves have got two important characteristics *viz.*, the frequency and the amplitude either of which could be varied in accordance with audio signal. If we vary the amplitude it is AM and if we vary the frequency it is FM.

Audio signal as I told you is a group of electrical waves obtained from the microphone which converts the actual sound waves into electrical waves. This audio signal comprises waves of various frequencies ranging from about 50 cycles to about 15,000 cycles per second. This is known as audio bandwidth. This range is different for different types of sound. For example my ta,k will have the bandwidth of 50 to 4,000 or 4,500 cycles but high quality instruments, or orchestral music will have a frequency range upto 15,000 cycles. The present AIR transmitters both medium wave and short wave ones use amplitude modulation. The carrier waves of these transmitters should have sufficient bandwidth side of the carrier wave to transmit the audio frequency. But due to overcrowding in the broadcast band we are not able to transmit the full bandwidth. The maximum range of frequencies at present transmitted is upto 70,000 cycles only in the case of these AM transmitters. In the case of FM we have much larger bandwidth +75,000 cycles and it is no problem to transmit faithfully the entire useful audio spectrum. Thus essentially FM becomes a HI-FI mode of broadcasting. To have such large bandwidth the carrier wave also should have a fairly high frequency. The proposed Madras Transmitter will have a frequency of 107.1 MHz.

The main advantages of FM transmitters are almost noise free reception and very high quality. In frequency modulation we keep the amplitude of the carrier wave constant and only change the instantaneous frequency of the carrier wave in accordance with the audio signal. As the amplitude is held constant, almost all natural and man-made disturbances which are mostly of the amplitude modulated type are eliminated. Because of the large bandwidth the entire audio spectrum can be faithfully transmitted thus ensuring a very high quality.



FM also has some disadvantages. Because of the very high frequency of the carrier wave, it cannot be transmitted over long distances like our medium wave or shortwave transmitter. Just like television it will cover only the "line-of sight" areas. This means that the receiving aerial should be able to "see" the transmitting aerial. Thus for the same transmitter power, the higher the transmitting aerial the larger will be the area covered. In Madras we are putting FM transmitter aerial the same tower as TV and hence the range of this transmitter will also be the same as that of the TV transmitter *viz.*, 80 to 100 Kms. It may be of interest to you to know that the sound portion of the TV programme is frequency modulated. The sound carrier of the Madras TV station is 67.75 MHz. Many people have asked me — can we receive this FM on the TV set. The answer is most probably "no". Most of the sets are spot tuned and even multichannel sets are spot tuned to the various TV channels only. The other way may be possible. As the FM receiver will be continuously tunable, you may be able to tune to the TV sound channel, if the frequency is available.

Another question frequently asked is whether the existing radio sets can easily be modified to receive FM. Theoretically possible but may not be easy or worthwhile. Hence FM sets are to be different. An FM set need not be very much costlier than an AM set, but as I told you earlier FM will bring the best quality musical programmes. If this has to be exploited and utilised fully the receiver should also be able to deliver you the very high quality. Thus an FM set may cost a little more but not much more than a HI-FI AM set.

The characteristics of the FM transmissions *viz.*, limited coverage and higher cost of transmission and costlier receivers — these limit the further expansion of FM. But we feel the higher cost is justified as it will satisfy the demand of the quality conscious music lover.

Courtesy : AIR, Madras

WORLD ENVIRONMENT DAY

Governor's Broadcast

The Global concern for the upkeep of the environment resulted in the United Nations convening the conference on human environment at Stockholm in June, 1972 and since then 5th June of every year is observed as World Environment Day to reaffirm our concern for the preservation and enhancement of our environment.

It is a fact that mankind has made good stride in the economic, industrial and other spheres. But the price of progress is that the water we drink and the air we breathe have lost their sparkling qualities and the land we live upon is slowly being made unfit for the purpose. The enrvionmental crisis is a world-wide phenomenon without any poliiticl boundary or economic distinction such as developed or developing countries. Hence it is in the fitness of things that the United Nations has taken up this matter seriously and has been observing 5th June of every year as World Environment Day.

Environmental degradation is caused by pollution, urbanisation and deforestation. Pollution — water, air, land, noise — is caused by individuals, industries, local bodies and by agricultural operations.

Man's Actions :

The quest for comforts and employment mobility coupled with increase in population have been the cause of many problems in urban areas. Rural exodus into urban areas exert a pressure on the limited accommodation and water supply and sewerage facilities. Lack of accommodation gives rise to proliferation of slums with inadequate sanitary facilities. Often people, due to lack of civic sense and sufficient public conveniences spoil open fields and let out the used water and the solid waste indiscrimately without any concern for the clean environment.

Industries :

Though industries are quite essential for the economic growth of a country, the problems they create with the environment due to the disposal of wastes cannot be overlooked. Industries such as distilleries, tanneries, textile and chemical units often let out their wastes without or with inadequate treatment, into nearby water courses affecting the quality of water supply systems, damaging crops, creating unsightly appearance and odour problems. Further the gaseous emissions from industries like cement, fertiliser, petroleum refineries, chemical and thermal power plants, containing sulphur dioxide, carbon monoxide, hydrogen sulphide, oxides of nitrogen, particulate matter pollute the air and affect the health

of mankind, animals and plant life. The increasing number of automobiles emit unburnt hydrocarbons, carbon monoxide, nitrogen oxide and lead affecting the health of urban inhabitants.

Local Bodies :

Though in our State we have progressed well in providing water supply facilities, the sewerage facilities are inadequate. With the result that most of the local bodies let out the untreated or partially treated wastes into nearby water courses affecting their quality.

Agricultural Operations :

The increase in population has created an increased demand on food supply and intensive and extensive agricultural operation is resorted to using chemical fertilisers and pesticides to protect the crop. These chemicals often find their way in the run off from the fields to nearby water courses.

Developmental Programmes :

With a view to improve our prosperity we take up many development schemes. Though these schemes are essential to improve our economic conditions, they sometimes interfere with the quality of the environment.

Noise Pollution :

Noise pollution due to automobiles, locomotives, modern jets and industries and loudspeakers is on the increase. The level of noise pollution in Madras City in areas like Anna Salai Post Office has been known to have reached a " highly irritating and uncomfortable " level.

Deforestation :

In addition to the above environmental problems, indiscriminate cutting of trees leading to deforestation has seriously interfered with our wild life and caused soil erosion, land slide and decreased rainfall.

Industrialists local bodies and the public to preserve and enhance the environment

A. I. R. Broadcast by

Thiru PRABHUDAS B. PATWARI

GOVERNOR OF TAMILNADU

on 5—6—1977

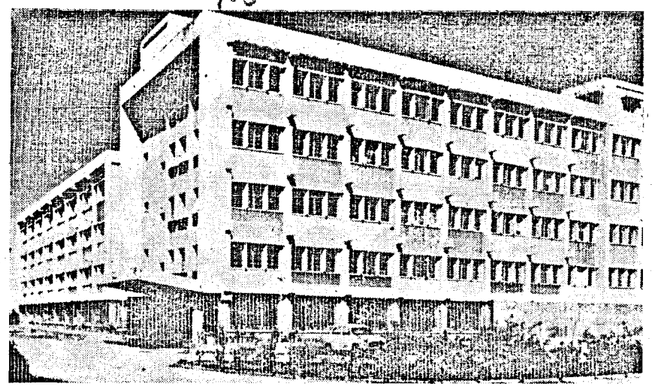
But man has begun to realise that nature is losing its resiliating capacity and he cannot be exploiting the nature without any restraint. Action has already been initiated in some quarters to repair the damages to the environment. It is high time, we exert our efforts in the direction of protecting the environment from further deterioration. This calls for a concerted effort from all concerned.

As far as industries are concerned, they should institute proper treatment measures for their waste, so that they are disposed of without interfering with the quality of the environment. They should consider the treatment works as part of their industry and provide for them at the planning stage itself and execute them before the industry is put into opeiation. Local bodies should strive to adopt proper disposal of the domestic waste from their community.

Above all a civic sense should be created among the public to keep their environment clean and desist from throwing of rubbish. We should also protect our forests, which nature has been kind enough to provide, thus paving way for the protection of our precious wild life.

Government being concerned with the growing problems confronting the environment have constituted the Tamil Nadu Environmental Board as an apex body to help in making policies for the environment that fit in with the programmes of development. The Board will also function as a co-ordinating authority of all Departments concerned with powers to look into all aspects of pollution. The noble cause of protecting the environment from further deterioration rests on you all. On this occasion of World Environment Day celebration, as Chairman of Tamil Nadu Environmenial Board, I appeal to one and all, industrialists local bodies and public to do their utmost in the preservation and enhancement of the environment.

THE HINDUSTAN PHOTO FILMS FACTORY



The Hindustan Photo Films started in the public sector in 1960, was facing numerous technical difficulties and enormous losses. Today, it has tided over its difficulties. A wide range of finished products of photo sensitised goods—Cine positive, cine sound negative, medical x-ray bromide paper and other items are manufactured in the integrated complex at Ootacamund.

The techniques of photo films production are quite complicated and were guarded as secrets by the handful of international enterprises in this line.

In the initial stages, the HPF experienced great difficulties and struggled hard to master the techniques. Beginning with old, outmoded processes, it is now in a position to keep abreast of developments abroad, thanks to our scientists and technologists.

Finishing Plant :

In Ambattur, work on a finishing plant of HPF has started. Films in many types and sizes for the printing industry (graphic art film) industrial x-ray films and cine colour films are to be made. The new project costs over Rs. one crore. Highly sophis ticated equipment of British and Japanese origin have been installed. The U.S. firm Du Pont Neurons has helped in the selection.

The H.P.F. in collaboration with the U.S. firm is producing medical x-ray films.

Future Plans : To instal a capacity of 6.15 million sq. metres with a turnover of Rs. 22 crores under the short-term plan has been practically implemented. Polyster base x-ray films, conversion of graphic arts film and colour paper from jumbo rolls have also been taken up. Large scale jumbo conversion programme for the cine positive has also been undertaken. The HPF which now undertakes the conversion of black and white roll film, will soon produce it fully from the base to the finishing stage.

The long-term plan is in three phases. The manufacturing capacity will be stepped up to five million sq. metres for x-ray and one million for graphic art flms. Manufacture of polyster base will not only make India self-sufficient but also open up avenues of sizeable exports.

HPF is constantly improving the quality of its products and is becoming a major force in the photographic industry. It has already started making profits after enormous losses over the years. With the successful implementation of its short-term and long-term plans, it is poised to become one of the giants in the highly sophisticated photographic industry.

Welfare Amenities

1. Co-operative Societies :

Consumer Co-operative Stores are being run by the employees since 1964. The Company has participated in the share capital of this stores. The Company has provided rent-free accommodation (with counters etc) and free supply of electricity and water to the stores.

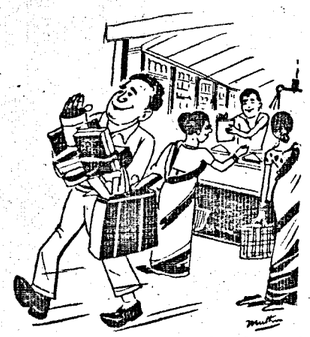
2. Credit and Thrift Society :

A Co-operative Credit and Thrift Society has been organised and is being run for the benefit of the employees. Besides encouraging thrift among the employees through fixed monthly interest-bearing contributions, the Society helps the employees by extending recoverable loans on easy terms. The Company has given the facility to effect pay-roll recovery of the loan repayment besides the monthly contributions.

3. Transport Facilities :

The Company has a fleet of buses for transporting employees from Ootacamund Town to the factory and back. This facility is provided to all the shifts. The buses make a number of trips between INDU NAGAR and the Ooty township for the convenience of the HPF employees' families.

Township children attending various schools and colleges in



Ooty are taken to schools and colleges in buses.

4. Canteen :

A canteen serving food, beverages and eatables at subsidised rates is being run by the company through a Managing Committee. consisting of 5 representatives each of the Management and the employees. The subsidy amounts to Rs. 300/- per head per year. Men and women employees have separate dining halls.

An employee's lunch room has also been provided for those who bring their own food. During all the canteen service hours light stereo music is played. A cup of free coffee and tea per day is served to all employees.

5. Recreation Facilities :

(*i*) **Staff Club :** A staff club organised by the employees with the active support of the Company in the form of grants equivalent to the collections raised by the Club by way of members' subscriptions ; and ad hoc fixed grant to purchase capital equipment. The club provides facilities for outdoor and indoor games in a modern club provided to the staff on a rent-free basis.

(*ii*) **The Club House :** In addition to the Staff Club a Club House has been provided with adequate facilities for all indoor games (including a shuttlecock court). It has 40 members on its roll.

(*iii*) **Staff Recreation Club Madras :** A Staff Recreation Club organised by the employees of the Branch Office in Madras provides facilities for out-door and indoor games. The Club is also ably supported by the Company including a matching grant equivalent to the subscriptions raised by the Club.

(*iv*) **Fine Arts Society :** A Fine Arts Society to develop the histrionic talent of the employees has been organised. The Company has provided rent-free accommodation with free supply of water and electricity.

(*v*) There are a few organisations in HPF started by enthusiastic employees aiming at the

development of internal talents in music, drama, etc., such as Kalaivani Kalai Mandram, HPF Kala Niketan, Goodwill Kala Niketan, Novel Creations and Indu Fine Arts, Madras.

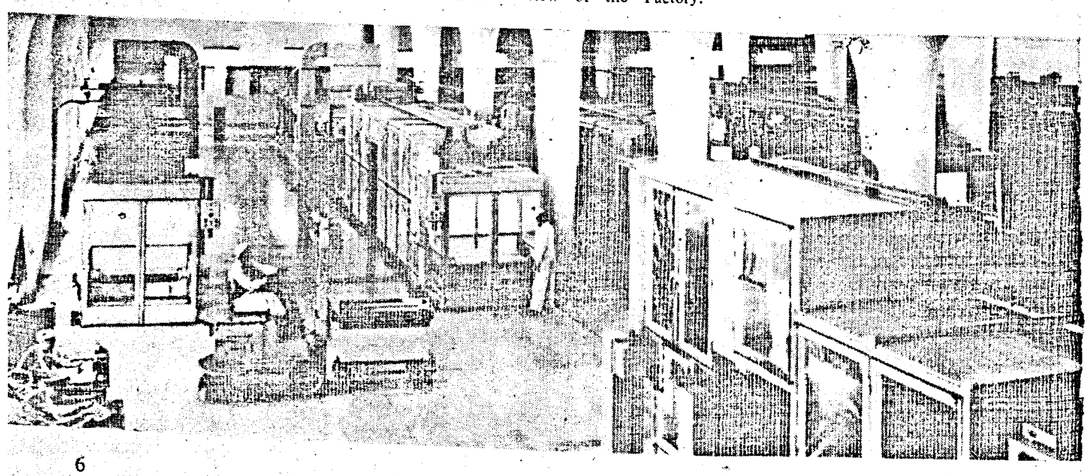
6. Educational Facilities :

An Education Society to look after the educational needs of the employees and their dependents, runs two aided schools — a Primary School with Tamil Medium and a Nursery School with English medium. The Company offers a subsidy to this Society, in addition to the provision of rent-free school accommodation and salaries of additional teachers over and above the sanctioned number of teachers by the Government of Tamil Nadu.

7. Medical Facilities :

A well-equipped First-Aid Centre and Dispensary staffed

An interior view of the Factory.



adequately by qualified Medical Practitioners and other necessary subordinate staff are functioning. The dispensary has facilities for x-ray therapy and the services of a part-time Dental Surgeon. An Ambulance van is available round the clock. An annual medical check-up of all employees and school children is undertaken.

8. Family Planning :

Our Urban Family Planning Welfare Centre is rendering useful service to the employees. The Management has provided rent-free accommodation, free supply of water and electricity for its maintenance, and cash incentive, apart from the State Government's incentive to each employee or his wife who undergoes vasectomy or sterilization operation. Presently the total incentive is Rs.180.

9. Uniforms and Protective Clothing :

Protective clothing is provided to all employees in our Production and Services Department at a cost of approximately Rs. 2,70,000 per year. The staff of Security, Transport, Telephone and Horticulture departments and all the sweepers and peons are given free uniforms.

Advances :

Interest-free festival advances recoverable in convenient instalments are given to the employees. Advances are also given at nominal rates of interest for the purchase of warm clothes, furniture, cycles, motor-cycles and scooters.

11. Madhar Sangam :

The women of the Township have organised themselves into an association called Indu Nagar Madhar Sangam. The Sangam renders social service to the residents in the Township. The Company has provided rent free accommodation, free supply of water, electricity and other such facilities.

The Madhar Sangam has organised a Library in the Township. The Management has provided the following facilities for running the Library :

(*i*) Rent free accommodation with free supply of water, electricity, etc.

(*ii*) Capital grant of Rs.5,000 given for purchase of books, racks, etc.

(*iii*) Recurring grant of Rs. 100 p.m. to meet the salary of a Librarian in the Library.

The Madhar Sangam has also taken up the responsibility of running the Township Hotel for which the Management has provided the following facilities :

(*i*) Rent-free accommodation with free supply of water, electricity, furniture, etc.

(*ii*) Capital grant of Rs. 5,00 for purchasing vessels, utensils, etc.

12. Housing :

There are 425 houses of various types in the Company's Township, housing about 25% of the employees at subsidised rates of rent. The township has all modern facilities, such as a shopping centre, a community hall, schools, playgrounds, a post-office, a Bank, etc.

13. Death Relief Fund :

A Death Relief Fund has been organised to give financial aid to the bereaved families of employees who die in harness. It is a voluntary organisation by and among the employees.

14. Cycle Stand :

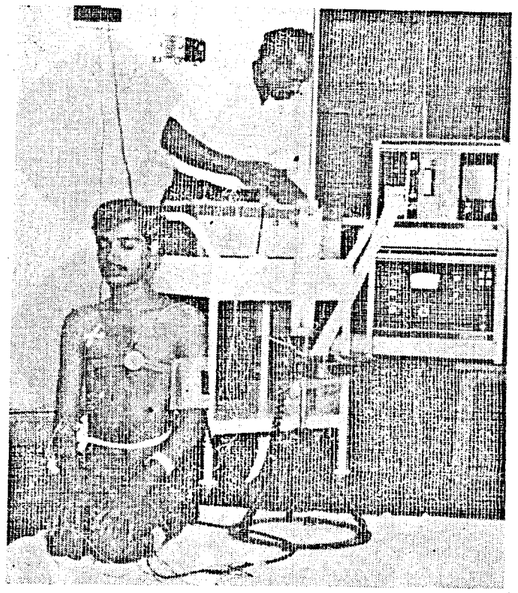
A cycle stand has been provided for the employees who bring their own cycles.

The subsidy per employee per year towards Canteen, Transport and Welfare Amenities amounts to Rs. 650/-.

15. Group Term Insurance :

A Comprehensive "Group Insurance Scheme" has been instituted by the Management, with LIC, covering all employees. The scheme provides for a payment of Rs. 10,000 to an employee in the eventuality of death while in the service of the company. The premia are met entirely by the Management.

PANEL ON YOGA THERAPY



The Tamil Nadu Government has appointed a nine-man committee to explore the possibility of introducing yoga therapy in Government hospitals in the State.

The committee, which is headed by Dr. P. Gurusironmani, Director of Indian Medicine, Madras, includes Dr. B. Ramamurthy, Principal of the Madras Medical College, Dr. T. M. Srinivasan, Additional Professor of Bio-medical Engineering, Indian Institute of Technology, and Thiru J. Harigopal Agarwal, honoray general secretary of Yoga Brotherhood, which runs the Kaivalyadhama Yogic Health Centre in Madras.

The committee has been asked to report within three months on whether yoga can be recognised as a system of treament and to define the objects and aims of that treatment.

The committee has been appointed following the recommendation of the third joint meeting of the Central Council of Health and Family Planning Committee that yoga may be approved as a recognised form of treatment of diseases.

Thiru Agarwal told Samachar that Government hospitals were associating themselves with the current month-long yoga therapy on respiratory diseases being conducted by the Kaivalyadhama Yogic Health Centre. The hospitals were conducting various tests free of cost and would be watching the progress of patients.

Thiru Agarwal said that the Yoga Brotherhood, which came into being in 1970, had been conducting regular health and therapy courses and had established that diseases could be controlled to a great extent by yoga.

Thiru Agarwal said the Yoga Brotherhood was now devising syllabus for schools and colleges which could also form part of physical training.

Thiru Agarwal said it was proposed to build a yoga hospital where yoga treatment could be given to in-patients.

Dr. M. V. Boule, Deputy Director of Research, Kaivalyadhama, Lonavla, said nearly 30 schools of different faculties were engaged in the research work being carried out at Lonavla in Maharashtra.

The activities of the Lonavla centre covered research, training and treatment. Besides reconstructing several ancient yoga tests, the centre had completed two volumes of the proposed ten volume dictionary of yogic terms. The centre had also a plan to produce a yoga encyclopaedia. It ran a 28-bed hospital in the campus.

Dr. Boule said the Lonavla centre providing two courses in yoga — one of nine months duration and the other of one month. The institution's diplomas and certificates were recognised by Government.

BIO-DATA OF MINISTERS

NANJIL K. MANOHARAN

Minister for Finance

Born in 1929, Thiru Nanjil Manoharan hails from Nagercoil. Graduating from the Scots Christian College, Nagercoil, he took his Post Graduate Degree from the Pachaiyappa's College, Madras. He was an active member of the self-respect movement and has taken part in a number of agitations.

When MGR left the DMK he left along with him and now acts as the Deputy General-Secretary of the AIADMK. He was elected Member of Parliament in 1962, 1967 and 1971. A good speaker, he has written a number of books. He has travelled abroad. He has been elected from the Palayamkottai Assembly Constituency.

He has been elected leader of the House.

He is married and has got two daughters and two sons.

THIRU S. RAMACHANDRAN

Minister for Public Works

Thiru S. Ramachandran was born in Puliyur, South Arcot District in 1937. He took his B.E. (Hons.), degree from the Annamalai University.

He was the General Secretary of the student wing of the DMK. He has served on several Trade Unions. He joined the State Electricity Board as Engineer in 195' and resigned his post to take activ part in politics.

He was elected to the State Assembly in 1967. He was the Minister for Transport for 5 years from 1971. It was during his administration the Transport Corporation started making profits. The credit goes to him for having introduced the worker's participation programme in the Transport Department.

THIRU K. NARAYANASWAMY MUDALIAR

Minister for Law

Hailing from Karunguzhi, Chingleput District, Thiru K. Narayanaswamy Mudaliar, was born on 12th November, 1912.

He took his M.A. degree from the Pachaiyappa's College, Madras in 1935 and his law degree from the Law College, Madras in 1937. and started practising from 1938. His friendship with Anna goes back to 1930. He has appeared in a number of cases on behalf of the DMK.

He was appointed as the Special Public Prosecutor in 1957 during the Congress regime and served in that capacity for a year. He was appointed as the Advocate General in 1967 during the DMK regime. He acted as Judge of the Madras High Court from January 1967 to November, 1974. He has enrolled himself as a Senior Lawyer in the Supreme Court after his retirement.

THIRU G. R. EDMUND

Minister for Food

Born in 1930 in Arumuganeri in Tirunelveli District, Thiru G. R. Edmund did his schooling in St. Xavier's High School in Palayamkottai. He graduated from Palayam kottai and took his Law degree from Madras.

He started his political careen from 1954. He was the Municipal Councillor of Palayamkottai from 1964-69, and member of the Legislative Assembly from 1967-71. He was the Deputy Speaker from 2nd February, 1969 till the Assembly was dissolved in 1971. He was returned to the Assembly and was a member till January, 1976.

THIRU R. M. VEERAPPAN

Minister for Information & Tourism

Thiru R. M. Veerappan was born in Valathira Kottai in Pudukkottai district on 9th September, 1926.

He finished his schooling in Nachiarpuram in Chettinad. He evinced interest in the Congress in the beginning. He joined the T.K.S. drama troupe in 1939. During that period he had contact with the self-respect movement of Periyar.

He joined the Dravida Kazhgam and was a full-time member of the party and stayed with Periyar, E.V.R. at Erode. Later, he joined the troupe of K. R. Ramasamy. He got in touch with Perarignar Anna in 1947. He stayed with Anna for some time in Kancheepuram.

In 1953, he joined M.G.R's drama troupe and was managing the affairs of the M.G.R. pictures. He started Satya Movies in 1963.

He was a member of the general body of the D.M.K. After the AIADMK came into being, he took an active part in politics. He was the Secretary of the Cultural Wing of the AIADMK and at present the Headquarters Secretary of the party.

THIRU ARANGANAYAGAM

Minister for Education

Thiru Aranganayagam belongs to Selvapuram, Coimbatore District. Taking his B.A., B.T. degrees, he served as a teacher in the Government High School in Karamadai. He was the headmaster of the

Thingalur High School. While teaching he took his M.A. degree and took his B.L. degree from the Bagalpur University. He resigned his headmaster's post and started his practise. He was in the DMK party and joined the AIADMK. He won the by-election in Coimbatore in 1973 on the AIADMK ticket.

THIRU K. KALIMUTHU,

Minister for Local Administration

Thiru K. Kalimuthu hails from Ramathevanpatti near Sivakasi. Graduating from the Theagarayar College, Madurai, he actively participated in the language agitation even during his student days. He has taken his M.A. degree also. He was in charge of the student wing of the Southern States of the DMK. He was elected President of the Panchayat Board, Ramathevanpatti in 1970.

He was elected as a member o the Legislative Assembly from Sivakasi in 1971. He has been imprisoned several times for having taken part in a number of agitations.

He joined the AIADMK since its inception.

A good writer, he has written the screen play and dialogues for a film.

THIRU S. RAGHAVANANDAM

Minister for Labour

Thiru S. Raghavanandam, was born on 4th January, 1917 in Patteeswaram in Thanjavur District. He, has studied upto S.S.L.C. He won the "Pears Prize" for having passed S.S.L.C. with distinction. He joined the Railways as a ticket collector in 1938 and was promoted as Station Master in 1940. He had participated in the Railway trade union movement and was imprisoned thrice. In 1961, he relinquished his post in the railways at the instance of Arignar Anna and joined the D.M.K. He participated in a number of movements organized by the D.M.K. He served as a member of the Municipal Council of Villupuram from 1964 to 1969. He was elected as the Member of the Legislative Council in 1968 and served for about three years He has been the President of 53 Trade Unions. He and his wife were imprisoned for having participated in the anti-Hindi agitation in 1965.

He left the D.M.K. in January, 1971 and joined the Congress. He joined the AIADMK on 14-2-1973 He is now the Secretary of the Labour Wing of the AIADMK. In all he has courted imprisonment 13 times

He was imprisoned on 27th March, 1977 and was released after three hours.

THIRU SOUNDRAPANDIYAN

Minister for Harijan Welfare

Thiru Soundarapandiyan was born on 5th May, 1938 in Chittoor, Tiruchi District. He had his education in Musiri High School, Government College, Pudukkottai, Presidency College, Madras and Alagappa College and and took his M.A. degree. He took his law degree from the Law College, Madras.

He joined the DMK in 1964 and was the Secretary of the Chittoor branch. He has served on a number of committees like the Southern Railway Passengers' Association, State Backward Classes Welfare Committee, Public Accounts Committee, Agricultural Income-tax Committee, The Hindu Religious Endowment Board etc. He joined the AIADMK when Thiru MGR founded the party and was made the Treasurer of the party. He was elected from the Krishnarayapuram Constituency in 1971 and has been returned from the same constituency in the present election also.

THIRU C. PONNAIYAN

Minister for Transport

Thiru Ponnaiyan, hails from Tiruchengode, Salem District. Born on 22-2-1942, he did his schooling in Tiruchengode High School and did his collegiate studies in the Jamal Mohammed College, Tiruchi. He took his law degree from Madras Law College. He actively participated in the youth wing of the DMK. He participated in the anti-price rise movement and anti-Hindi agitation and was imprisoned. He joined the AIADMK since its inception.

An advocate, he has appeared before the Sarkaria Commission on behalf of Thiru M G R

He has been elected to the Tamil Nadu Legislative Assembly from the Tiruchengode Constituency in the General Elections held in June 1977. He has the distinction of winning the largest number of votes in Tamil Nadu.

SELVI P. T. SARASWATHI

Minister for Social Welfare

Hailing from Cheranmadevi in Tirunelveli District, Selvi P. T. Saraswathi did her schooling in the O.C.A.M. High School in Madurai District and graduated from the Lady Doak College. She did her M.A. in the Madras Christian College. Taking her law degree from the Madras Law College, she started practice from 1964.

She joined the Congress in 1965. She left the Congress on 8th October, 1972 and was in the DMK for a short period. She followed Thiru MGR when he started the AIADMK in 1972. She has appeared in a number of cases on behalf of the AIADMK. Her hobbies are reading and playing Veena.

THIRU P. KULANDAIVELU

Minister for Agriculture

Born on 15th March, 1938, Thiru P. Kulandaivelu, hails from a family of agriculturists. He did his schooling in the Municipal High School, Pollachi. Took his B.A. degree from the N.G.M. College, Pollachi and his law degree from Madras Law College. He underwent imprisonment for having participated in the anti-Hindi agitation in 1965. He is the Member of the Rules and Regulations Committee of the AIADMK.

THIRU K. RAJA MAHOMMED

Minister for Handloom & Textiles

Born on 5th January, 1943, Thiru Raja Mohammed hails from Periakulam, Madurai District. He did his schooling in Periyakulam. After graduating from the Presidency College, he took his B.L. from the Law College, Madras.

Even as a student he took part in the language movement and was first imprisoned for 9 days and later kept in the Palayamkottai prison for 45 days.

He was Secretary of the Madras Corporation Council from 1972 and resigned it last March to contest the Lok Sabha elections.

MILK

A Wholesome Food

The fact that the 100th milk bar has been opened in the city shows that the people of Madras have become aware of the importance of nutrition in their diet.

Milk is a wholesome, nutritious food. It contains a high percentage of protein, fat, vitamins which are vital for growth. Not only children, even adults and old people, can drink milk. The sick and convalascents are advised to take milk. Though meat also contains a high percentage of protein and fat, a majority of the people in our country cannot afford to eat meat. Therefore, they can substitute it with milk.

Rapid progress has been made in the field of dairy development.

There are three dairy plants in the city, under the T.N.D.D.C. where milk is processed and products are prepared for supply in the city.

Thiru P. Kulandaivelu Minister for Agriculture opens the 100th Milk Bar of T. N. D. D. C. at Dr. Muthulakshimi Reddiar Park at Adayar on 22-7-77

The milk from producing areas, is transported by road and rail tankers with insulated stainless steel tanks. The rail transport of milk, started a few months ago, has stabilized now into a daily operation. In fact almost the entire milk from Erode area is now transported only by rail.

The **Madhavaram Dairy** is the oldest in the organization. It has an installed capacity of 1.25 lakhs litres of milk a day. It has however been consistently delivering over 2 lakh litres of milk a day for the last few weeks, without undue strain on the machinery.

The **Ambattur Dairy** was commissioned last April and has been making steady progress. Last year it had delivered besides the city requirements, upto 40,000 litres a day for the Bangalore Dairy. The dairy caters to the city through automatically day vending machines. Seven of these are now functioning and another four are to be commissioned shortly. In order to strengthen the distribution, two new 'Prepac' machines have been imported from France with a packing capacity of 5,000 sachets per hour each. To cut transport time, the machines were specially airlifted. They are being installed at Ambattur Dairy and are expected to go on stream shortly.

The **Ayyanavaram Dairy** was a small pasteurizing plant run by the Madras Co-operative Milk Supply Union, which incidentally, is the oldest milk supply co-operative in the country and is fifty years old. The Union is concentrating on milk production activities and has entrusted TNDDC with marketing of the milk produced. Along with this the plant at Ayyanavaram is also taken over by the TNDDC and is being modified as a major milk products factory. The work, in progress in stages, is expected to be completed shortly. Already the plant is producing Yoghurt, Ice-cream mix, Khoa, Lassi and Curd, besides packing butter and Ghee for the market.

The marketing activities cover Madras City and neighbourhoods through an extensive and well dispersed network of 463 booths, 100 milk bars, four mobile milk bars and 17 zonal offices.

The task of delivering milk, twice a day at about a 1,000 delivery points is achieved by a fleet of contracted vehicles and is controlled by a 24 hour control room. The difficult task of preventing adulteration rests with the milk inspectors and milk marketing officers who carry out, systematically, a series of inspections. The quality control officers, both on the chemical and bacteriological side regularly test milk and equipment at field points, especially in bulk vending units.

Milk is supplied to the patients in the Hospitals in the city and neighbourhoods table butter, specially packed for them. This was undertaken to ensure that pasteurized butter is made available to them. The Corporation, operates, again as an amenity to the patients, milk bars in all the city hospitals so that wholesome milk is available to the sick and convalescent.

Milk is also supplied to the outlying township of the Atomic Energy Project at Kalpakkam and to the Chingleput Medical College Hospital.

Milk supply to the citizen has been made plentiful and easy. Milk against cards is issued freely. Such milk cards are now available druing the entire month, with supplies commencing within 2/3 days of the date of purchase.

70 percent of the customers have been able to make use of it and the number increases every month.

Milk is also available for cash purchase in all milk bars and also in the booths to a limited extent. Card holders can ensure such extra supplies to them through a simple form available at the booths by giving 24 hour notice. Necessarily the milk distributed for cash, has to be based on average demands, to control the return of unsold milk, and this could lead to isolated stockouts when there is an unanticipated increased demand on any day. The position is reviewed constantly to increase the extra milk supply to booths/bars that face frequent stockouts. Since there is no shortage of milk, no restrictions are made on hotels, teashops etc. getting extra milk for cash from booths and bars, though preference is always given to the domestic customer. Supplies to bulk customers of over 10 litres are made only in cans.

The Corporation has expanded its sales outlets for the convenience of the public, by distributing butter, ghee and milk powder through the 'Amudam' departmental stores and selected major shops of the Tamil Nadu Civil Supplies Corporation. 43 private retailers with refrigeration facilities also now deal in table butter, ghee and milk powder made by TNDDC. This network is being expanded rapidly to get close to the consuming public. A door to door delivery service is also being tried out in AnnaNagar and Chetput areas.

The Corporation has introduced skim milk and whole milk powder in small packs for trial marketing in Madras City. These are made in the most modern plant of TNDDC at Madurai. Skim Milk powder is fat-free milk powder, and can be used as a thickening agent, leavening agent, and flour additive in cooking. It is also good as an additive in ice-cream, puddings, custards etc.

The marketing unit has also been trial marketing during the last few weeks curd and lassi, both salt and sweet. Since consumer acceptance seems good these products will be introduced regularly into the market.

A higher fat milk at 6% fat is to be introduced to meet long

Bottling Machine

standing demand from certain sections of consumers by October-November 1977.

In order to cater to the needs of the customers whose consumption, per family per day is less than 0.5 litre, one of the bottling lines have been modified to fill quarter litre bottles and milk in much smaller bottles will be available for them. This is available in six zones of Washermanpet, Triplicane, Ayyanavaram, Perambur, Guindy and Anna Nagar and will be extended to other areas in phases.

To meet the increasing demand for milk in polythene sachets, two new machines have been airlifted from France and are under installation. The installation has been done by the Engineers at Ambattur without foreign know-how. Milk in sachets will be available in plenty in all areas shortly.

TNDDC tries to serve the customers to their full satisfaction. They are heavily dependant on the customers for valuable feed-back on deficiencies noticed, as well as on suggestions for improvements. Every case reported to the Zonal Offices and to "ALL 24 HOUR SERVICE" is investigated in detail and corrective action is taken.

It may be of interest to note that there were about 20 Milk Bars in 1975 in the City. Today due to the increased patronage by the "nutrition conscious" citizens of Madras City, the **100th Milk Bar** has been opened and with the continued patronage it will grow further.

"Wide dispersal of industries and relief to farmers will bring about a balanced economy for Tamil Nadu."

Says

Thiru K. MANOHARAN

Minister for finance

A Vote-on-Account for the first five months of the current financial year was approved by Parliament during President's Rule. We are now presenting a revised Budget for the year and seeking the approval of the Legislature for the annual appropriation. Within the short time and the limited flexibility available to the new Government, we have carried out a quick review of the Budgetary provisions and we have readjusted provisions wherever necessary in line with our basic priorities. This process will be a continuous one and I would like to assure the House at the very outset that during the course of the year adequate provisions and necessary adjustments will be made for implementing the projects and programmes to which we decide to accord priority.

We have had to frame the Budget in the context of the overall economic situation in the country as a whole and Tamil Nadu in particular. After a period of relative price stability, inflationary forces are again reasserting themselves in the national economy. In Tamil Nadu, while the increase in the price of foodgrains has been more or less under control mainly due to the formation of the Southern Zone, there have been price increases in edible oils, cash crops and manufactured goods. The instruments of monetary and fiscal policy for ensuring price stability, while promoting growth and employment, are mainly with the Central Government. Our role consists in giving them constructive co-operation to implement national economic policies on sound lines and while doing so, to formulate and implement our own programmes in such a manner that investment and welfare are promoted without leading to financial difficulties or distortion of priorities. We have to balance immediate and short-term needs with adequate provisions for the long-term development of the State. Deficits have to be avoided ; at the same time, the tax burden cannot be unduly increased. The demands of Government and other employees have to be reconciled with developmental priorities and adequate provisions for meeting the basic minimum needs of the people. Production and employment have to be stepped up but not at the cost of price stability. Existing schemes have to be continued and at the same time, many new beginnings have to be made. In this difficult situation, all problems have to be approached in a fair and balanced manner while formulating the Budget.

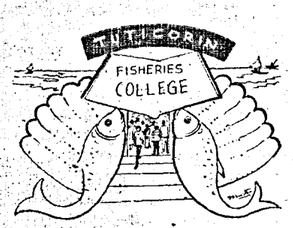
The present unsatisfactory position of Centre—State financial relations has been aptly described in the opening paragraph of the report of the Study Team of the Administrative Reforms Commission under Thiru M. C. Setalvad. As the report points out :

The financial position of our State has been placed at a serious disadvantage in comparison with most other States due to the loss in revenue arising from the social welfare policy of Prohibition. To our disappointment, repeated representations to the Centre have not been successful in making them accept the principle of compensating this loss which arises from the fulfilment of a Directive Principle in the Indian Constitution. The recent appointment of the Seventh Finance Commission will give us the opportunity to press our claims on this and other important issues affecting the interests of Tamil Nadu.

Annual Plan

Adequate provision has been made for the Annual Plan 1977—78, with special emphasis on core sectors such as Agriculture, Irrigation, Power and Industry. At the same

Finance Minister is presenting the Budget for 1977—78 in the Legislative Assembly on 25th July 1977.



time, equal attention has been given to social services such as drinking water-supply, education, health and the welfare of Scheduled Castes, Scheduled Tribes and Backward Classes. The size of the Annual Plan for the current year as presented to Parliament was Rs. 260 corres. This has now been increased to Rs. 263.5 crores. The provisions in the Plan for major sectors are : Power —Rs. 94.9 crores ; Irrigation —Rs.24.7 crores ; Agriculture and allied sectors — Rs. 30.2 crores ; Industry — Rs. 13.8 crores ; Transport and Communications — Rs. 25.2 crores ; Water-Supply and Sewerage — Rs. 26.5 crores ; Education — Rs. 13.3 crores ; and other social and economic services — Rs. 34.9 crores.

Farmers will be ensured to get a better price for their produce though expanded markets under the guidance of the Directorate of Agricultural Marketting.

Due to the failure of the South-West monsoon there was a shortfall in agricultural output in 1976-77. In that year, according to a quick assessment, the production of foodgrains is estimated at 74 lakh tonnes; sugarcane (gur) production is estimated at 13.5 lakh tonnes, oilseeds at 13.4 lakh tonnes and cotton at 3.6 lakh bales. In the current year, we are aiming at a target of 84 lakh tonnes of foodgrains, 14 lakh tonnes of sugarcane (gur), 14.9 lakh tonnes of oilseeds and 4 lakh bales of cotton. We shall take all necessary steps to ensure that these targets are achieved without shortfall.

Necessary provisions have been made in the Plan for the strengthening of State seed farms and increasing the distribution of high-yielding varieties. Soil conservation is another area of priority for which a privision of Rs. 302 lakhs is contained in the Budget. This programme is of particular benefit to dry farming areas and also provides substantial scope for the creation of employment. Particular emphasis is being given to diversify agriculture through the promotion of cash crops, vegetable production and oilseeds. Agricultural marketing has highterto been relatively neglected. We have decided to create a separate Directorate of Agricultural Marketing which will help market committees for improving their services to agriculturists and to expand marketing facilities available throughout the State so as to ensure that farmers get a better price for their produce. The Government of India are formulating a scheme for crop insurance based on the report of an expert committee. We have requested them to expedite the introduction of this scheme and to take up this programme as widely as possible in Tamil Nadu.

In the Fisheries sector, it will be our policy to ensure that fishermen are enabled to secure a better price for their catch by reducing and eliminating the activities of middlemen. A direct link has to be established between credit, marketing and processing. Increased facilities for the processing and export of marine products from Tamil Nadu will be created directly by Government and also through the joint sector. A Fisheries College will be opened in the current year at Tuticorin under the Tamil Nadu Agricultural University. In addition to the normal programmes for marine fisheries, a number of schemes have been included for developing inland fisheries. Under the Animal Husbandry programme, 15 key village blocks will be set up and 5 veterinary dispensaries opened. A new dairy complex at a total cost of Rs. 3 crores is proposed to be set up at Erode with facilities for milk processing including milk powder production and cattle feed manufacture. Forestry programmes provide for the planting of 51,104 acres under various schemes.

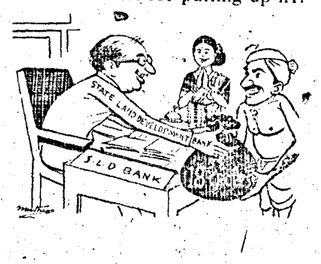
Rs. 145 lakhs have been provided for Government's participation in the lending programmes of the State Land Development Bank. This will enable them to achieve a lending level of Rs. 18 crores for providing credit to agriculturists. Other important features of co-operative development which are being supported are the strengthening of consumer and processing societies at a number of places and increasing the facilities for the provision of consumption credit and jewel loans.

Irrigation

It is noteworthy that the Plan outlay on Irrigation which was Rs. 11.9 crores in 1975-76 will be more than doubled to the level of Rs. 24.7 crores in 1977-78. In the past, several irrigation schemes had been announced without adequate provisions being made in the Budget to implement them. The construction of irrigation projects was also unduly prolonged. We have now provided adequate funds to complete seven irrigation schemes in the current year benefiting 35,000 acres of new area and stabilising irrigation in 77,000 acres. An important nesw scheme that will be taken up in the current year is the formation of a reservoir across Kamandalar at Shenbagathope in North Arcot district at a cost of Rs. 3.55 crores. This reservoir will benefit 1,962 acres of new area and stabilise existing irrigation in 10,386 acres.

The difficulties experienced in the Cauvery Delta have once again highlighted the need for efficiency and economy in the use of water in the old irrigation systems of Tamil Nadu. In this context, the Cauvery modernisation programme will have to be proceeded with expeditiously. A provision of Rs. 3 crores has been made in the Budget for this purpose. Honourable Members will be happy to know that arrangements have been concluded with the World Bank in respect of the Periyar Improvements scheme. The total project cost will be Rs. 41.04 crores. This scheme for which a provision of Rs. 3.16 crores has been made in the Budget will benefit 38,000 acres of new area besides stabilising irrigation in the existing ayacut.

The Budget contains a provision of Rs. 4.7 crores for the speical minor irrigation programmes and desilting and reclamation of tanks. Apart from investment on minor irrigation in such public sources, provisions are available in the Co-operation sector for assistance to farmers for putting up irrigation wells. As part of the rural electrification programme, about 30,000 pumpsets will be given power connections in the current year. While we place high priority on the full utilisation of ground-water resources in the State, particularly in the context of our having more or less fully utilised the available surface water, it has to be pointed out that in many areas of this State there is over-exploitation of ground-water resources. This has resulted in the water table going down from year to year. This trend is dangerous in the long-run and has to be taken note of in the future interests of the State. In the coming months, the Government will study this problem in all its aspects with a view to ensure ground-water conservation and regulation.

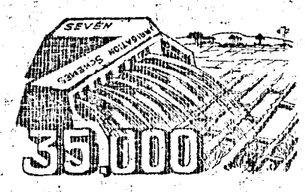


Power Projects

The present installed capacity in Tamil Nadu is 2,364 MW. In 1977-78, Kundah-IV expansion and Suruliyar projects will be commissioned adding 145 MW to the grid. A provision of Rs. 43 crores has been made for the Tuticorin thermal project (2 X 210 MW). I may assure the House that this project is being implemented according to schedule with the first unit due to be commissioned in December, 1978 and the second unit in June, 1979.

Planning for Power has to be a continuous process. In this context, we welcome the decision of the Centre to go ahead with a 200 MW plant at Neyveli based on the existing mine. It is also welcome that the Centre has sanctioned detailed investigations for a second mine-cut at Neyveli. It is necessary to ensure that these investigations are completed quickly and decisions taken to proceed with the second mine-cut and a super thermal power station based on it. We have also represented to the Central Government that the Kalpakkam project should be expedited and a second nuclear project should be set up in Tamil Nadu.

A project to add a third unit (210 MW) at Tuticorin has already been formulated and Central approval to this scheme is expected very shortly. It is our intention to commence work on this expansion also in the current year itself and to have the third unit commissioned as soon as possible after the commissioning of the first two units.

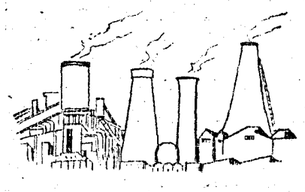


Along with planned increases to generation capacity, attention is also being paid to improving the quality of power supplied and to the reduction of line losses. With these objectives in view, the outlay on transmission and distribution is being doubled from Rs. 14 crores in 1976-77 to Rs. 28.5 crores in the current year.

Industry

The Central Government have approved the first phase of the Salem Steel Plant with an investment of Rs. 127 crores. We have represented to the Government of India that adequate funds should be provided to expedite implementation of this project.

A sizable provision of Rs. 13.77 crores has been made for various industrial projects and programmes in the State's Annual Plan. The overall investment in TIDCO's public sector and joint sector projects in 1977-78 will be of the order of Rs. 20 crores. Work is proceeding according to schedule on the public sector cement plant at Ariyalur which have a capacity of 5 lakh tonnes per annum, the total investment being Rs. 29 crores. The co-operative sugar projects at Vellore and Tiruppathur and the public sector sugar mill at Thanjavur were commissioned in 1976-77. The sugar project at Perambalur is expected to be completed in September, 1977. In the Budget, provision has been made for an additional sugar mill. Special emphasis is being given in our industrial programmes for schemes relating to leather, electronics and sericulture in which there is considerable potential in Tamil Nadu.



Rural Industries

It is the declared policy of our Government to plan for and achieve a wide dispersal of industries throughout Tamil Nadu in the rural and semi-urban areas. Although Tamil Nadu has a large number of registered small-scale units of the order of 50,000, it is unfortunate that a number of these units are under-utilised or have been closed down. In this context, we have decided to undertake a quick and detailed study of the causes for under-utilisation of capacity in existing small-scale industries. Based on this survey, necessary assistance, whether it relates to technical factors or supply of raw materials or provision of finance or marketing assistance, will be provided so as to ensure that dormant and closed units are revived and put back on stream.

A durable solution to the problem of unemployment, and particularly to the problem of educated unemployment, can be found only by creating the maximum possible scope for self-employment in modern small-scale industries, village and cottage industries, trades and service activities. It has been estimated that 4,000 new small scale industries were registered last year. As compared to this, we have accepted a target of 10,000 small-scale industries to be commissioned in the next twelve months. This will give employment opportunities to at least about 50,000 persons. For this purpose, the State Directorate of Industries and the Small Industries Development Corporation (SIDCO) will function as extension agencies assisting small entrepreneurs in a number of ways. Simultaneously, advice and assistance will be given for promoting self-employment opportunities in such occupations as those of cobblers, tailors, washermen, goldsmiths, blacksmiths, carpenters, plumbers and repair services. This scheme for which institutional finance will be mobilised, is expected to provide employment to at least one lakh persons during the next twelve months.

The new Government is committed to promoting employment for women in rural areas with priority being given to women with-

their own support. Such employment in home industries and cottage industries will supplement the income of rural families and will also promote the social emancipation of women. In organising home industries, careful attention has to be paid to marketing arrangements and production in these units has to be coordinated with the consumption pattern within the State and consumer demands in other States. We are setting up an expert committee for home industries to advise Government on all these aspects and to formulate specific proposals which can be implemented quickly and effectively.

Handloom Development

Handloom development is a sector to which we attach very high priority. It is of particular importance to the economy of Tamil Nadu and to the lives of 20 lakhs of

people who depend on this industry. Institutional facilities to the handloom sector are now being provided through the co-operatives and our target is to include 30,000 additional weavers within the co-operative fold in the current year. This Government will take necessary steps to remove the difficulties experienced by weavers in taking advantage of these facilities. Government will come forward with the necessary financial assistance for the procurement and marketing of handloom cloth. We welcome the Government of India's decision to entrust the production of controlled cloth in the form of saris and dhotis to the handloom sector. This measure will provide steady employment to about 25,000 weavers in Tamil Nadu. Intensive handloom development projects will be commissioned in the current year at Salem, Madurai and Kanchipuram. Provision has been made in the Budget for design centres to be established at Madras and Madurai in order to enable the weaving units of handloom producers to offer attractive designs to suit the changing patterns of consumer demand. Co-optex has taken up a detailed production programme covering two lakh handlooms in the co-operative sector in order to improve the marketability of handloom cloth.

Social Welfare Services

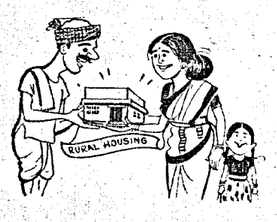
The new Government is committed to a policy of giving the highest priority to schemes which are designed to improve the living conditions and economic opportunities of the weaker and vulnerable sections of society. In addition to general development programmes which aim at improving employment opportunities and income levels for the entire population, we should directly redress the traditional disabilities suffered by such sections of the population as Harijans, tribal population, backward classes, fishermen, handloom weavers and destitute widows. At the same time, the basic minimum needs of people in rural areas in respect of drinking water, educational and health facilities, housing, roads and transport should be assured to them through concrete schemes which will be implemented according to a strict time schedule. This is the approach which we have tried to adopt in this Budget with a sense of urgency and which we shall pursue in all the developmental and welfare activities relating to the rural areas and the weaker sections in the future.

Rural Water Supply

Good and adequate drinking water is a primary need. A comprehensive survey of drinking water facilities in rural areas has been carried out in Tamil Nadu covering 55,000 habitations. This survey has revealed that out of these only about 38,450 habitations have the benefit of a good and adequate source of drinking water supply. Among the balance of 16,550 habitations, highest priority has to be given to 4,010 habitations covering a population of 17 lakhs which do not have a potable drinking water source within one kilometre. It has been estimated that the provision of water supply to these habitations will cost about Rs. 14 crores. We have decided to tackle this problem as a first priority. We are providing Rs. 6.65 crores in the Budget and we expect to receive an additional amount of Rs. 3 to 4 crores in the Centrally-sponsored sector for this purpose in the current year. It will be our objective to provide all these habitations with adequate and potable sources of drinking water within the next twelve months. Most of them will be covered by the end of the current year itself. Priority will be given in this programme to habitations of Harijans, tribal population and backward classes.

Harijan and Tribal Welfare

The total allocation in the Budget for the welfare of Scheduled Castes, Scheduled Tribes and Backward Classes is Rs. 23.57 crores. We have taken certain important decisions in regard to educational concessions for children belonging to Scheduled Castes and Scheduled Tribes. From this academic year, we have decided to reimburse special fees and examination fees and to supply books free to all children



belonging to Scheduled Castes and Scheduled Tribes up to the school-leaving stage irrespective of the income limits of their parents. In the post-matric stage, we have decided to make tuition fees free to all children belonging to Scheduled Castes and Scheduled Tribes regardless of the income of their parents. As a result of these decisions, there will be free education at all stages to Harijan and tribal children. In addition to completely free education up to the school-leaving stage, such children will also have the benefit of free books. An additional provision of Rs. 26 lakhs will be made for this scheme.

A significant increase to various provisions for the welfare and uplift of the tribal population in the State has been made. The outlay on the tribal sub-plan will be increased from Rs. 80 lakhs in 1976-77 to Rs. 153 lakhs in the current year.

Certain new schemes are being introduced for indigent widows and other women in straitened circumstances. It is proposed to give an annual stipend of Rs. 150 for 1,000 poor women in the age group of 16—30 whose family income is less than Rs. 3,000 per annum in order to help them acquire vocational training in the form of shorthand and typewriting. Books and notebooks will be given free of cost to the children of widows whose family income is less than Rs. 3,000 per annum. We propose to set up Guidance Bureaux in different parts of the State for helping widowed women to get assistance for obtaining life insurance and provident fund benefits, advice on educational and employment opportunities and guidance regarding admission of their children in orphanages and educational institutions.

Welfare of Fishermen

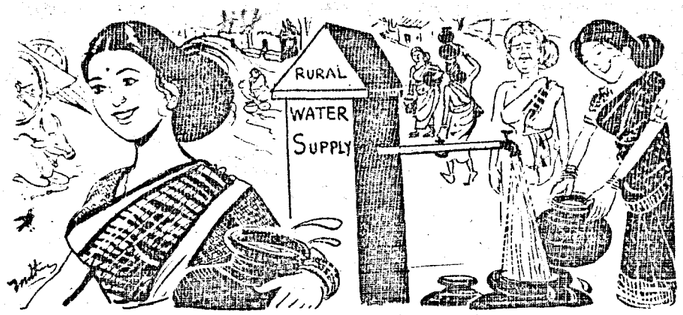
A special welfare fund for the benefit of fishermen and their families will be started. The families of fishermen lost at sea will receive an immediate grant of Rs. 5,000 of which Rs. 2,000 will be in cash with the balance being paid in suitable instalments. An additional amount of up to Rs. 5,000 per family will be spent on the rehabilitation of their widows and children so as to make them self-reliant. This will be a permanent scheme for the welfare of fisherman and it is proposed that every year Government will make a grant of Rs. 2 lakhs to the new welfare fund with an equal amount being found from the Chief Minister's Public Relief Fund.

Labour Welfare

The Labour Welfare Board is undertaking a number of schemes for workers' welfare. Government will assist them to provide comfortable and inexpensive accommodation for workers' representatives and trade union leaders who come to Madras for discussions with Government on the settlement of labour problems.

Rural Housing

Rural housing has hitherto been a neglected sector. It is now proposed to earmark Rs. 2 crores in the lending programme of the Tamil Nadu Co-operative Housing Society for rural housing. About 50 rural co-operative housing societies will be established in the current year. In the case of house building loans for Harijans and Scheduled Tribes, the entire interest will be subsidised by Government so that they can have the benefit of interest-free loans for providing themselves with



this basic need. A provision of Rs. 3.2 crores has been made in the Budget for Harijan and Fishermen Housing Schemes in the remaining 7 months.

Rural Roads

Fair-weather roads linking smaller villages with bus routes and other main roads is an important requirement in the rural areas. We are increasing the provision for this purpose by Rs. 60 lakhs in the current year. We welcome the provision in the recent Central Budget of Rs. 20 crores for approach roads in rural areas. We shall press the Centre for obtaining a due share to Tamil Nadu in this allocation.

It will also be the Government's policity to improve transportation facilities in rural areas and to extend them, in appropriate places through the wider use of mini-buses.

Rural Health

Rural areas have been largely neglected in the provision of health facilities. An immediate beginning has to be made in redressing this imbalance. We propose to take a major initiative for extending medical relief to outlying villages. This scheme will be started in the current year in 24 selected blocks in the State. In each block, two mobile teams will operate covering each village at least once a week. The mobile medical team will also distribute necessary drugs and will be supported in the field by paramedical personnel who will be located in places covering a population of about 3,000.

As a supplement to this scheme, we also propose to encourage reputed voluntary agencies to run mini health centres each of which will cover a population of 5,000. Fifty-four voluntary organisations have come forward to take up such mini health centres and the Government will be supporting them with 50 per cent for the recurring cost.

Panchayat Unions whose financial position is weak are now not able to run their dispensaries properly. We have, therefore, provided for provincialising 20 panchayat union dispensaries in the current year which are in Grade V and Grade VI panchayat unions of poor financial position.

One other major new scheme is the medical examination of school children with special emphasis on detection of leprosy which is prevalent in Tamil Nadu in an endemic form in Chengalpattu, Dharmapuri, North Arcot, South Arcot, Salem, Tiruchirapalli and Pudukkottai and in certain areas of Thanjavur, Madurai and Coimbatore. Under the new scheme, school children up to the age of 11 in these areas will be given a thorough medical examination for the early detection and cure of leprosy and other diseases affecting children. This scheme will cover 45 lakh children.

Education

In the Educational sector, we are committed to a policy of vocationalising the higher secondary school stage based on detailed surveys of employment opportunities in each district. The 10+2+3 pattern of education will be implemented in Tamil Nadu with this primary objective in view. A provision of Rs. 3 crores has been made in the Budget for the purpose. To provide for additional enrolement at various stages of school education, provision has been made in for the recruitment of 1,100 new teachers. We are implementing the decision to extend UGC scales of pay to teaching staff in Universities. A decision has also been taken to extend revised scale of pay based on the UGC scales to teaching staff in Government colleges and Government-aided private colleges. These decisions will take effect from 1st April 1976 with monetary effect from 1st January 1977.

Special emphasis will be given to mass literacy programme. This programme and the schemes which are being implemented for non-formal education should go a long way in promoting universal education and in tackling the problems of wastage and stagnation in school education.

Students in all educational institutions should be encouraged to pay special attention to sports and to physical fitness. A provision of Rs. 16 lakhs for the Tamil Nadu Sports Council and Rs. 3 lakhs for a new scheme to assist educational institutions to provide gymnasia for students has been made. We shall also provide Rs. 5 lakhs for a new scheme to provide other amenities such as lunch rooms, indoor sports rooms and cycle stands for students in colleges.

Tamil Development

In the Governor's address, the policy of Government to preserve and promote Tamil literature, art, historical and archaeological research was indicated. The Budget will provide for specific schemes in this regard. We shall assist Universities and institutions in other States to introduce part-time diploma courses in Tamil. Pension at the rate of Rs. 75 per month will be given to poor Tamil Scholars and due provision will be made in the light of demand. Steps will be taken to preserve important monuments such as the Tirumalai Naicken Mahal, Ramalinga Vilas in Ramanathapuram and the Danish Castle in Tranquebar and to have permanent museums in these places. Loose sculptures and valuable old palm-leaf manuscrips will be collected and preserved. A scheme for this purpose will be taken up in four districts in the current year. We are also setting up an expert committee to formulate a programme for the translation and publication of books in other languages in Tamil. Valuable Tamil classics will also be translated and published in other languages.

Urban development

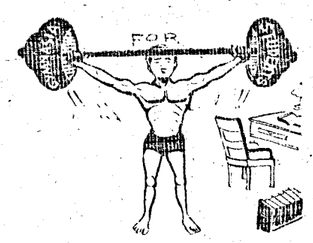
While taking all necessary steps for developing the rural and semi-urban areas so as to discourage the migration of people to towns, we also have to improve the living conditions of the poor in urban areas. Long neglected essential facilities in terms of water-supply and sewerage, roads and transportation, housing, slum clearance and slum improvement have to be provided in growing urban centres. Against this background, we are implementing a major integrated urban development project in Madras City with the assistance of the World Bank. A provision of Rs. 6.95 crores has been made for this scheme in the Budget. A provision of Rs. 3.6 crores has been made for the construction of tenements for erstwhile slum dwellers. We are also proceeding with the programme to improve all slums in Madras City, Madurai, Coimbatore and Tiruchirapalli with an overall outlay of Rs. 5 crores so that they can be provided with essential amenities such as drinking water-supply, public sanitation and street lighting. A provision of Rs. 12.09 crores has been included in the Budget for urban water-supply and drainage schemes covering the Corporation of Madras, 20 municipalities and 70 town panchayats. This includes a provision of Rs. 2.5 crores for the Siruvani water-supply scheme in Coimbatore and provision for water-supply schemes in Tiruchirapalli and other municipalities besides drainage schemes for Madurai, Tiruchirapalli, Tiruvottiyur, Tirunelveli and Tuticorin.

State Raffle

The Tamil Nadu State Raffle Scheme was announced by our late Chief Minister Anna while presenting the Budget for 1968-69. As Anna explained while inaugurating the scheme, the State lottery, the proceeds from which are spent on welfare schemes, should not be looked upon as a form of gambling but as an opportunity to contribute to the welfare of the poor. In his inimitable words, "if you win, the benefit is for your home; if you lose, it is for the homeland". We have decided to continue this scheme but with certain changes in the prize structure which will result in a larger number of prizes and a wider public-appeal. The net proceeds from the scheme will be allotted for increasing drinking water-supply facilities in rural areas.

Employment

In all projects and programmes, our primary concern is to increase employment opportunities. Although the problem of unemployment is a national problem, it is a matter of regret that Tamil Nadu has a relatively high proportion of the unemployed and under-employed, both unskilled and educated. In rural areas, employment has to be promoted particularly in the non-agricultural season. This is the only way in which income for the rural people can be made stable throughout the year. There are substantial provisions in the Budget for schemes such as medium and minor irrigation, rural road, soil conservation and afforestation. The overall outlay for such schemes is Rs. 51.7 crores. What is necessary is to implement these schemes in a timely and co-ordinated manner so that employment potential is maximised in the summer months. It is our idea to create a suitable organisation on the lines of a land army for this purpose. This organisation will tap the manpower potential among the young and able-bodied in the rural areas and utilise this potential for the creation and maintenance of permanent assets for the benefit of the rural people. Against this background, we are setting up an official committee under the Chief Secretary, which is expected to give recommendations for launching a massive employment effort in the summer months. The schemes which I have already referred to in the industrial sector should provide a substantial volume of employment to self-employed persons under various trades and skills as also to young entrepreneurs setting up small-scale units. The educational reform connected with the 10+2+3 pattern will greatly improve opportu-



nities for vocational education and will be linked to setting up of small industries and self-employment schemes in future years. We are also giving higher priority to technical training schemes. About 1,000 additional places will be filled in the existing Industrial Training Institutes in the current year.

Benefits to Govt. Staff

I would like to take this opportnity to assure the House that the State Government will consider the demands of Government employees, employees of local bodies and teachers for better emoluments and other benefits in a fair and sympathetic manner. Government will strive its utmost to meet these demands within the inevitable constraints imposed upon it by the resources available to the State and the needs of development.

We shall be shortly setting up the Third Pay Commission. The terms of reference of the Pay Commission will be comprehensive. It will not only advise Government on the rationalisation and improvement of the structure of pay and allowances but will also be requested to examine and remedy existing anomalies and make suitable recommendations in regard to amenities and facilities available to Government employees in the form of health facilities, housing, educational opportunities for children and social security. This will enable Government to take a comprhensive and coordinated view of emoluments as well as the overall living standards of its employees.

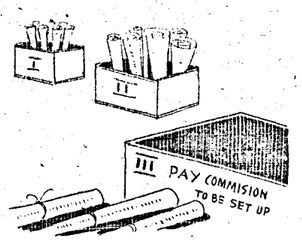
Since the implementation of the recommendations of the Second Pay Commission in 1970, additional dearness allowance has been given by Government on seven occasions. These along with the interim relief of Rs. 10 per month announced in June 1977 amount to a total cost of 7.3 lakh Government employees, local body employees and teachers, 3.4 lakh employees at the lower pay levels are already receiving dearness allowance, including interim relief, equal to what they would get if the Central D. A. rates had been made applicable. As a measure of relief to others, we have now decided to increase the interim relief from Rs. 10 to 20 per month for employees whose pay is Rs. 200 per month or above. This will benefit 4.1 lakh employees and will cost Rs. 4.9 crores per annum in addition to the annual cost of Rs. 8.8 crores for the interim relief announced in June 1977. The increased interim relief will also be extended with effect from the pay for July 1977 to be drawn on 1st August 1977.

Rental housing for Government employees is an important scheme. We have stepped up the provision for this scheme from Rs. 150 lakhs to Rs. 200 lakhs in the current year. The increased provision will enable the construction of 660 additional units for low-paid employees. A provision of Rs. 38 lakhs has been made for Police housing. Increased provision will be made for this scheme in the future.

We propose to introduce a major new retirement benefit scheme for the benefit of the 7.3 lakh employees in Tamil Nadu. Under the scheme, a monthly deduction of Rs. 15 will be made. Along with interest on these deductions, an additional amount of gratuity will be contributed by Government so that even employees retiring within a few years of the nception of this scheme can derive a sizable benefit. An employee retiring after 25 years of service will derive a benefit of Rs. 10,000 although his own contribution during this period will be only Rs. 4,500. The receipts under the scheme will be utilised for providing benefits to employees by way of increasing the house building advances to Government servants, providing additional funds for the Tamil Nadu Rental Housing Scheme and for house building loans through the Tamil Nadu Co-operative Housing Society for local body employees and teachers. We shall consult employees' unions in regard to the details of the scheme and shall implement it as soon as possible based on consultations with them.

Financial Position

I shall now turn to the financial aspects of the Budget. The Budget Estimates for 1976-77 envisaged a



revenue deficit of Rs. 5.32 crores and an overall deficit of Rs. 2.98 crores. In the Revised Estimates, the revenue deficit is estimated at Rs. 17.28 crores. However, in the overall position, we expect a surplus of Rs. 9.82 crores at the end of 1976-77.

Revenue receipts in 1977-78 are estimated at Rs. 633.24 crores and the expenditure on he revenue account at Rs. 663.40 crores resulting in a revenue deficit of Rs. 30.16 crores. The capital expenditure in 1977-78 will be Rs. 62.88 crores. The overall effect of the transactions on the Revenue, Capital and Loan accounts is now esetimated to result in a deficit of Rs. 18.89 crores at the end of 1977-78. In the earlier estimates presented to Parliament, a revenue deficit of Rs. 9.9 crores and an overall deficit of Rs. 13.92 crores had been projected. The worsening in the revenue position since then is mainly due to the grant of interim relief to Government and other employees in June 1977, conduct of elections to the State Assembly, the decision to introduce UGC scales for teaching staff and certain shortfalls on the receipts side. Due to the opening balance and some improvement in capital receipts, the overall position has, however, worsened only to the tune of Rs. 5 crores as compared to the estimates presented to Parliament.

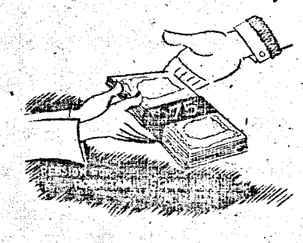
Revisions in tax structure

I am sure that the House will now want me to turn to the subject of revisions in the tax structure since by now your patience must be strained and your curiosity must need satisfaction. My first search was for a taxation measure that will not be widely unpopular. This was a difficult search but has met with some success. Consistent with our commitment to the policy of Prohibition and having regard to the existing rates in neighbouring States, we propose to increase the excise duty on Indian made foreign liquor

from Rs. 14 per proof litre to Rs. 17. This measure will bring health to the consumers, and if not, at least wealth to the exchequer. It is also proposed to increase the excise duty on rectified spirit exported out of the State from 50 paise to 80 paise per bulk litre. These changes are estimated to yield an additional revenue of Rs. 50 lakhs per annum.

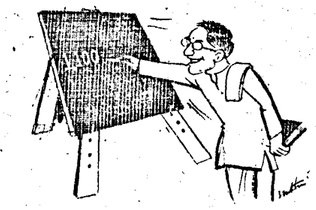
Irrigation rates were increased for I and II class sources and a special assessment on commercial crops was levied in the 1976-77 Budget when Tamil Nadu was under President's rule. These levies were, however, postponed in the revenue year that ended on 30th June 1977. We have now decided that these levies which were postponed will not be collected. We have also decided to reduce the increased irrigation charges for I class sources from Rs. 12 to Rs. 10 per crop per acre and for II class sources from Rs. 10 to Rs. 8 per crop per acre. In regard to the special assessment on commercial crops, we have decided to reduce the rate for grapes, sugarcane, plantain, coconut, betel and turmeric from Rs. 20 to Rs. 15 per acre. The assessment and collection of the commercial crop cess on shorter-term crops, namely, tobacco, chillies, irrigated cotton and irrigated groundnut is likely to lead to hardship to farmers. We have therefore decided to withdraw the levy of Rs. 12.5 per acre on these crops altogether. These major concessions will lead to a loss of revenue of Rs. 2.5 crores per annum.

In Tamil Nadu, we have a very complicated system of consolidated wet assessment, special water rates for new projects, additional wet assessment and water cess. This structure of water rates has evolved over years and needs to be streamlined and rationalised in the light of the present situation. This has to be done having regard to the corresponding rates in other States, the need for ensuring an equitable incidence among farmers in different areas of the State, the ability of



farmers to pay such charges and the need for incentives to agricultural production and in a manner that will promote the efficient use of irrigation water. At the same time, we have to ensure that beneficiaries pay for benefits they receive and sufficient funds are generated for the maintenance and expansion of irrigation works. We have decided to set up a committee which will make a comprehensive study of irrigation and irrigation-related charges in Tamil Nadu and recommend suitable changes.

In regard to sales tax, we have decided to make a number of adjustments in the light of representations received from consumers and trade and also with a view to plug loopholes resulting in evasion and avoidance of tax. Against this background, it is proposed to exempt from sales tax livestock, green grass, bun and porai, curd and butter, oil and products of oil produced by power ghanies set up by or with the assistance of Khadi and Village Industries Commission and by the State Khadi and Village Industries Board, medicinal mixtures and compounded powders where the components thereof have already suffered tax and handloom and millmade handkerchiefs. There have been repeated representations from the hosiery industry, which represents an important sector of small scale industry in Tamil Nadu, that they are not able to withstand competition from similar units in other States. It is, therefore, proposed to give them some relief by reducing the rate of local sales tax on cotton hosiery yarn from 3 per cent to 2 per cent and the rate of Central sales tax from the present 2.5 per cent to 2 per cent. In order to avoid taxation at different stages, it is proposed to levy 3 per cent single point tax on cotton sewing thread which is now subject to multi-point taxation. In order to check evasion, it is proposed that rough synthetic gem boules may be made liable to single point sales tax of 15 per cent. The exemption for polished synthetic gem boules will be continued. Similarly, it is proposed to bring under multi-point tax, jaggery and gur including jaggery powder and nattusakkarai. It is proposed to classify metal polishing bars along with polish and subject them to 8 per cent single point tax. We propose to reclassify scents and perfumes, powders, snows and scented hair oils into two categories



viz., those of common use and those which come under luxury items. A single point rate of 8 per cent will be adopted for the former and 12 per cent on the latter. I trust that the House will approve of my effort to find some funds even from fragrance. It is proposed to amend the concerned entry so as to avoid cumulative taxation on different forms of aluminium. Country chekku oil cakes and country chekku oil are proposed to be brought under multi-point tax so as to prevent evasionof tax by mill-owners. The existing exemption in respect of producers of of genuine country chekku oil and oil goods will be continued. It is proposed to amend the relevant entry so as to ensure that any variety of paper which has suffered tax but which is converted into any other variety liable to tax under the same entry will not be taxed again. It is proposed to bring dyes and chemicals and essences and fruit squashes under the single point rate of 8 per cent instead of the present multi-point rate. All these changes will be brought about by issuing necessary notifications and the Members will have the opportunity to discuss them when the amendments incorporating the notifications are brought before the House.

We have also decided to make certain important procedural changes in regard to sales tax with a view to avoiding hardship to assessees, improve collections and at the same time reduce corruption. A summary assessment procedure will be introduced for small dealers whose turnover is less than rupees one lakh. Only the accounts of those dealers who had not returned their turnover commensurate with previously assessed turnover and trends or where inspections had revealed irregularities will be subjected to detailed check. This change besides reducing inconvenience to honest small dealers will enable assessing officers to concentrate on the more important cases. We have also

taken certain other decisions to make procedures easier at checkposts and to provide for quick redressal of grievances in regard to orders of checkpost officers. The penalty rate for defaulted payments is proposed to be increased and a provision introduced for the publication of names of defaulters of sales tax in newspapers subject to certain conditions as in the case of income-tax defaulters. We propose to tighten the conditions under which retired officers of the Commercial Taxes department are permitted to enter appearance on behalf of assessees.

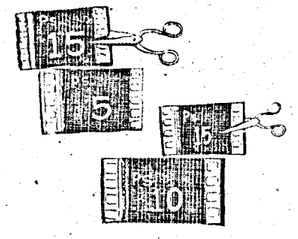
We have also decided to set up an expert committee which will comprehensively examine the procedures in regard to assessment, collection and appeal in the matter of sales tax laws and regulations. The object of this committee will be to suggest changes which will subserve the triple objectives of reducing hardship to assessees, improving collections and eliminating corruption.

Representations have been before Government for some time that the entertainment tax in Tamil Nadu is particularly burdensome at the lower brackets of admission. In the face of this long standing grievance, we have now decided to provide a measure of relief in respect of entertainment tax at the lower rates of admission by reducing the additional surcharge from 15 paise to 5 paise where the net admission fee plus entertainment tax and surcharge does not exceed 25 paise and from 15 paise to 10 paise where it is between 26 paise and one rupee. This concession will by fully passed on to the consumer. The initial revenue loss may be expected to be made up to a substantial extent as a result of larger attendance at theatres that is likely to be stimulated through the tax reduction.

The growth in this important industry should be not only quantitative but also qualitative. Government have decided to introduce a scheme for promoting high-quality, low-budget Tamil films with a social content. Under this scheme, a subsidy of rupees one lakh will be provided to a specific number of films every year which fulfil the criteria to be formulated for the purpose.

The net effect of the changes in sales taxes and entertainment tax will be a loss in revenue of Rs. 40 lakhs per annum.

I had mentioned earlier that the overall deficit at the end of 1977-78



is estimated to be Rs. 18.89 crores. The effect of the various revisions in tax structure which we have now proposed and the increase in the interim relief to employees will increase the deficit by an additional amount of Rs. 5.70 crores. This deficit has to be covered largely through economies, better collection of existing levies and improved performance of statutory bodies and public sector corporations. Honourable Members will recall that in the Governor's address to the Joint Session, the policy of the Government to root out corruption at all levels was affirmed. Equally, it is our policy to identify and attack the problem of wasteful expenditure in all Government schemes whether they are developmental or non-developmental, in the Plan or outside the Plan. We will have to take every effort to ensure that every rupee of the tax-payer's money is made to go the longest way in providing direct benefits to the people. It is our hope that given the necessary fiscal discipline based on the drive against corruption and waste. we should be able to tide over the deficit in the current year to a substantial extent.

Sir, I am aware that Honourable Members belonging to all sections of the House have been looking forward to the maiden Budget of the new Government. It is less than a month since we have assumed office. In this short span of time, and although only 7 months are left for fresh appropriation, I trust that all well-intentioned Members will agree that we have made a serious and sincere beginning in tackling the various developmental and welfare problems of the State. I look forward to the Budget debate in the House and I would like to assure Honourable Members, irrespective of their party affiliation, that their valuable suggestions and views will be fully taken into account in making necessary provisions during the balance of the financial year and in formulating the Budget for the coming year.

I would like to express my sincere thanks to Thiru S. Guhan, Finance Secretary and his colleagues who helped me to prepare this Budget within a short time and thereby lightened my burden.

With these words, I seek the approval of the House to the Estimates placed before it for 1977-78.

Yoga 5,000 Healthy Years

Yoga is more popular today than ever before. So great is its current popularity, in both national and international fields, that it is in fact becoming something of a cult, especially with the health fads. A measure of its popularity can be judged from the fact that it has been above nationality and race. No geographic or any other barrier has been felt, nor is there any age or sex restrictions and taboos. It might well be called a world unifier. The reasons for the above are not too far to seek.

Yoga is a good deal more than physical exercises and gymnastics. Along with mental discipline, it aims to instruct the mind and the body. Its advance philosophical forms lead to a fine and harmonious relationship between the individual and the world around him.

YOGA : WHAT IT IS :

Defined as a form of mental and physical disciplines, yoga gives a code of ascetic practices. In practical terms, yoga means good health, both physical and mental and also the prevention and cure of diseases.

Yoga is said to be pre-aryan in origin. There is archaeological evidence indicating yoga disciplines in existence during the Indus Valley civilization, 5,000 years ago.

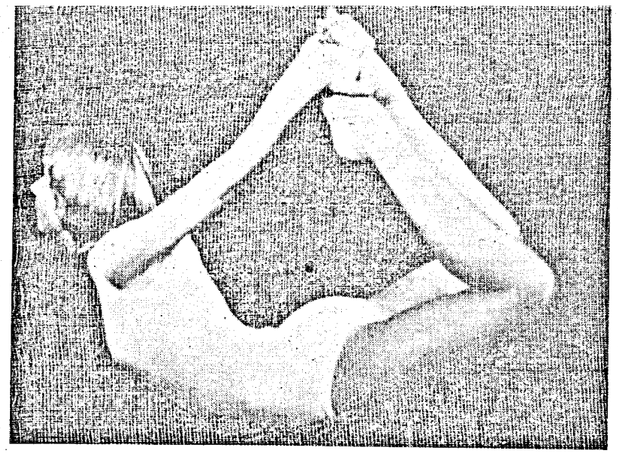
The term yoga derives from the root "Yuj" — "Yoke or join" in Sanskrit. This indicates the harmonious union of man with his surroundings, that is the universe.

There are several forms of yoga, depending on how mental energy or physical forms are sought. The chief forms of yoga are Hatha Yoga, thorough physical culture ; Raja Yoga through physical discipline ; Karma Yoga through work ; Bakthi Yoga through faith ; Mantra Yoga through occult ; and Laya Yoga through the activation of the subtle centres of the body.

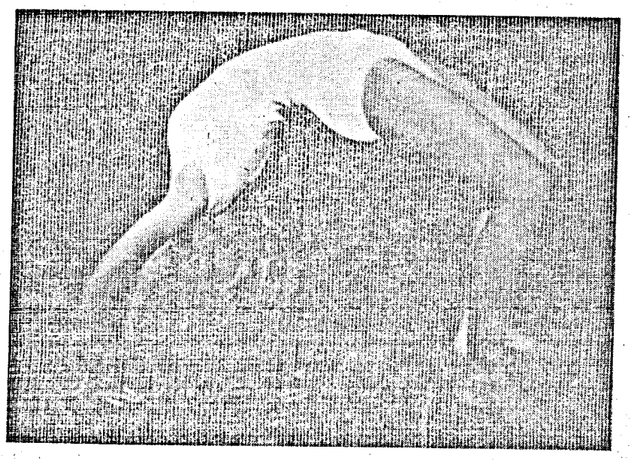
HATHA YOGA :

A healthy mind functions in a healthy body. The health of the body depends to a great extent on the health of the nerves and certain glands which secrete hormones. It is important to strengthen the glands and the nerves. The glands manufacture hormones and therefore they should be kept in a healthy state.

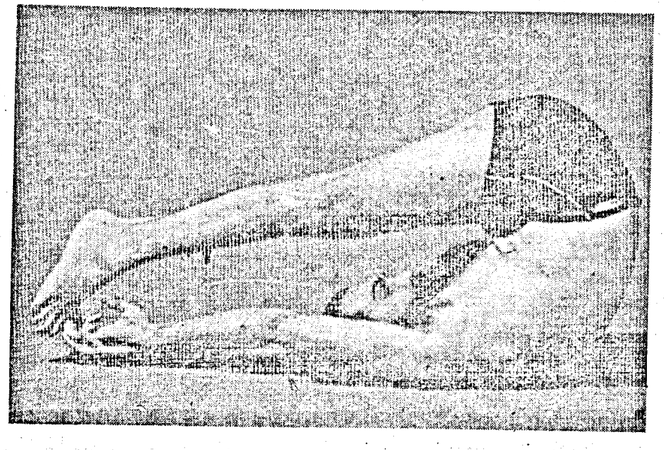
The physical culture of keeping the body fit is known as the yoga system. It is a practise of asanas *i.e.*, postures. The asanas are unstrenuous and revitalizing. In practising asanas one ignores the muscles but concentrates on the glands and the nerves. To strengthen the nerves one should strengthen the brain and the spinal column.



DHANURASANA



CHAKRASANA



HALASANA

WHAT YOGA DOES TO YOU :

Sirasana : Head Stand :

Take a blanket, fold it and spread it on the floor. Kneel down, place your forearms on the floor. Interlace the fingers and place your head between the hands. Straighten your legs and keep them close to your body. Lift your feet and slowly raise your legs up till they point straight up—Hold your breath till you are steady in this posture. Stand in this posture for a few seconds to begin with and gradually increase the period. To return from the posture, first bend the knees and then lower the legs to the ground. In the initial stages, you can practise this against a wall.

BENEFITS :

An abundant supply of blood rushes to the brain. Brain power, memory are enhanced. Eyes, ears, nose etc., are strengthened.

Halasana : Plough Posture :

Lie flat on your back. Lift your legs up and lower them over head, till the toes touch the floor. Keep the knees straight. Hold your breath for a few seconds. Lower your legs back to position.

BENEFITS :

The back muscles and the spinal nerves are exercised and strengthened. It tones up the digestive organs when the blood circulates in this region.

Dhanur Asana : Bow Posture :

Lie face downwards, chin on the floor, arms at the sides of your body. Flex the legs at the knees. Raise the head and shoulders. Hold the ankles firmly.

BENEFITS :

It stimulates the spinal nerves, peps-up the whole body. A host of pelvic disorders is prevented. It firms the thighs and slims the abdomen.

Paschimottasana :

Sit on the ground, stretch your legs straight. Raise your hands up, keep them close to the head. Slowly bend forward and try to touch your toes.

AIR POLLUTION

The ultimate disposal of wastes emanating from our communities and industries, could be accomplished on land, water and air. Wastes of various categories exist in solid, liquid or gaseous phases and accordingly the areas of disposal, depend upon the waste characteristics and other factors. Citizens at all levels, notice the ruinous nature of solid and liquid wastes disposed off on land, but the harmful effects of waste disposal into natural water courses and the atmosphere, have not been seriously considered except in a few places. Under these circumstances, it is pertinent to bring out the problems associated with the disposal of wastes into natural water courses and the atmosphere, which form part of man's environment.

Atmospheric Pollution :

Air pollution is defined as "the presence in the air of substances put there by the acts of man in concentrations sufficient to interfere with the comfort, safety or health of man or with the full use of enjoyment of his property." The relatively thin envelope of air surrounding the globe is considered to have a great capacity for diluting and stabilising the gaseous wastes that are discharged from our industries and other sources. However, its capacity is not unlimited and the stage has been reached in several places where the quality of the atmospheric air has been impaired. Polluted air will create adverse conditions with respect to the health and longevity of human beings and cattle and may lead to destruction of vegetation and damage to properties. In a few instances polluted air has been definitely identified as the causative agent of death or disability of men and animals. For example, deaths in Donora, Pennsylwania, U.S.A., Meusevalley, Holland and London have been attributed to toxic pollutants in the air. Any one who has visited Los Angeles, California, U.S.A. during winter would have experienced the effects of air pollution.

Several elements and compounds have been found to cause certain diseases in various manufacturing processes, but these materials may or may not reach sufficient concentrations in open atmosphere to create similar effects Considerable damage may be caused to human health, by air polluted with toxic substances. Sulphur dioxide has recently been mentioned as a possible cause for cancer, in addition to respiratory diseases. Oxides of nitrogen, released along with the automobile exhaust gas cause bronchitis and have adverse effect on lungs. Carbon monoxide which is a well known poison, is also one of the constituents of automobile exhaust gas. A variety of hydro carbons which are carcinogenic, also result from the same source due to poor combustion. The toxic and injurious gases and pollutants, entering the atmospher due to industrial emissions, activities associated with traffic, and refuse burning and their injurious effects have been shown in Table

Sufficient evidence has been reported where cattle have been poisoned by the ingestion of vegetation containing toxic concentration of substances directly traceable to air pollution. In Florida, U.S.A. fodder grass had accumulated fluorides from emissions by industries processing phosphate rock and aluminium. Cattle consuming the fodder containing toxic fluorides were directly affected by fluorosis, resulting in several fatalities.

B. B. SUNDARESAN.

Damage to vegetation in areas subjected to air pollution has also been reported widely. Such damage vary from superficial leaf injury to extensive economic losses due to destruction of fruiting or flowering bodies of entire plant. Timber trees have been damaged seriously by air borne gaseous pollutants in Pacific North West, U.S.A. Sulphur dioxide, hydrogen fluoride, ethylene, carbon monoxide, hydrogen sulphide, ammonia, and other gaesous pollutants have been implicated in damages to a variety of plants when limiting concentrations have been reached. Garden crops, citrus groves, and ornamental plants have all been injured by components of smog, and other toxic pollutants. Each species or type of plant appear to have a limiting concentration of each one of these contaminants, which must be reached before damage becomes noticeable.

Corrosive gaseous pollutants, such as sulphur dixoide, nitrogen dixoide and others, may cause structural damage to buildings and other structures, destroy painted surfaces, clothes and linen. All these will lead to considerable economic loss to community.

Ambient air quality standards and work room threshold limit values (TLV), apply to men and women in good health and capable of physical exertion. In the case of infants, invalids, aged and sick persons whose body resistance will be low, the TL values will be much less. It is this section of the population which become first victims of polluted air. In an atmosphere with more than one toxic pollutant, considerable damage maybe caused even at low concentrations on the weaker sections of the population. On days when climatic conditions lead to low air movement and very little dispersion, the damage that could be caused may reach disastrous limits. The examples cited earlier have shown that such an occurence could be expected at any time in industrial areas, subjected to large emissions from automobile exhausts.

Madras City and Neighbourhood :

In India systematic study of air quality has been made only sporadically. Singh and Prabhakararao (1) studied air pollution in Kanpur City. Zutzhi *et.al.* (5) air pollution at Trombay. Yennawar, *et.al.* (4) carried out short term air pollution surveys in Delhi, Bombay and Calcutta. A scientific assessment of air quality in Madras was considered necessary prior to embarking on suitable control measures.

A short term survey of air pollution in Madras City was carried out during 1971 with a view to have a quick check on the level of various pollutants in the city and to obtain data as a first step towards formulating a general plan of air quality studies on long term basis for the city. This was required to draw the attention of the public and the concerned authorities towards the deterioration in air quality and thus generate interest in contromeasures.

Madras is the fourth largest city in India with a population of 2.47 million and an area of 139 sq. km. There are two thermal Power Stations at Basin Bridge and Ennore, an oil refinery, a few fertiliser factories and chemical industries, in addition to a number of small and medium engineering industries. Apart from these factories, 50,000 automobiles plying on the city roads and some of these belch out smoke and pollutants due to defective engine performance and at times adulterated fuel.

Meteorological Data :

The minimum air temperature for Madras City varied from 17°C in April during the period March 1970 to March 1971. The maximum air temperature varied from 28°C in December to 43.5°C in May.

The maximum humidity varied from 96 to 98 per cent from July 1970 to January 1971 and the minimum humidity varied from 39 to 60 per cent during the year.

The wind speed for the period of study varied from 8 to 10 km/hr. during the day. During night hours the wind speeds were less. Being a coastal city, sea breeze plays an effective role in bringing fresh air from the sea. However there is a limit to which this natural process can sweep away the pollutants. Short duration inversions sometimes do occur during early mornings and late evenings at the time when the wind speeds are low. However, these inversions are invariably of a short duration and never last more than a few hours even during winter.

Sampling Stations :

For the short term air pollution survey six representative stations were selected in the city.

The sampling stations were located at heights varying from 15 to 40 feet depending upon the suitability. One to three storeyed buildings with flat open terrace were chosen for installing the equipment. Proximity to large and tall buildings liable to obstruct the air movements were avoided. Safety of the equipment involved was also considered in the choice of the site.

Sampling stations were selected considering the various factors necessary to make it truly representative. For this the city was divided into different zones depending upon the predominant nature of activities in the zone such as industrial, residential and commercial.

The six sampling stations and their special features are :

(*i*) Guindy Industrial Estate. This is in the southernmost part of the city. There are a number of small chemical and engineering industries in the estate.

(*ii*) Automobile Association Building, Mount Road : At this location the intensity of vehicular traffic is high.

(*iii*) General Hospital : It is in the heart of the city, representing both vehicular traffic and rail road transportation being near the Madras Central Railway Station.

(*iv*) Basin Bridge : It is in Central Madras. A Thermal Power Station and Loco-Shed are located in this area.

(*v*) Ennore : It is north of Madras. Numerous industries like fertilisers, rubber factory and a number of other industries are located in this area.

(*vi*) Kodungaiyur : This is just at the northwest end of the city. It is on the windward side from Manali Oil Refinery. The city sewage treatment plant is in this area.

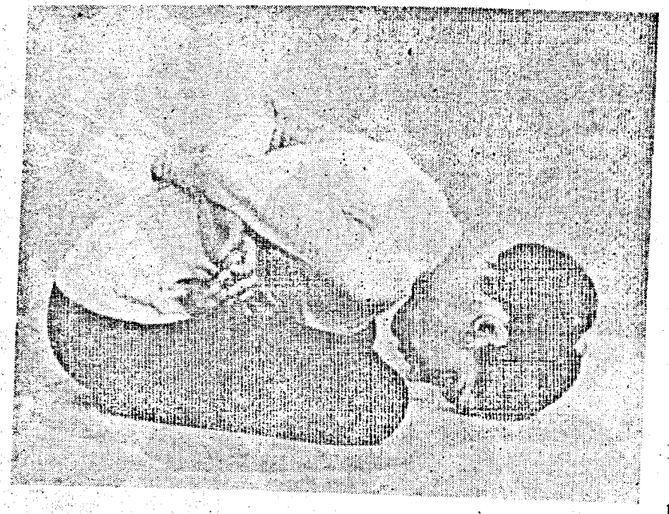
Frequency and Mode of Sampling :

Gaseous pollutants were collected in this study on six-hourly sampling basis at a rate of 500 ml/min. in order to obtain an indication of the diurnal variations in pollution levels — morning (6 hours), Mid-day (6 hours), evening (6 hours) and night (6 hours).

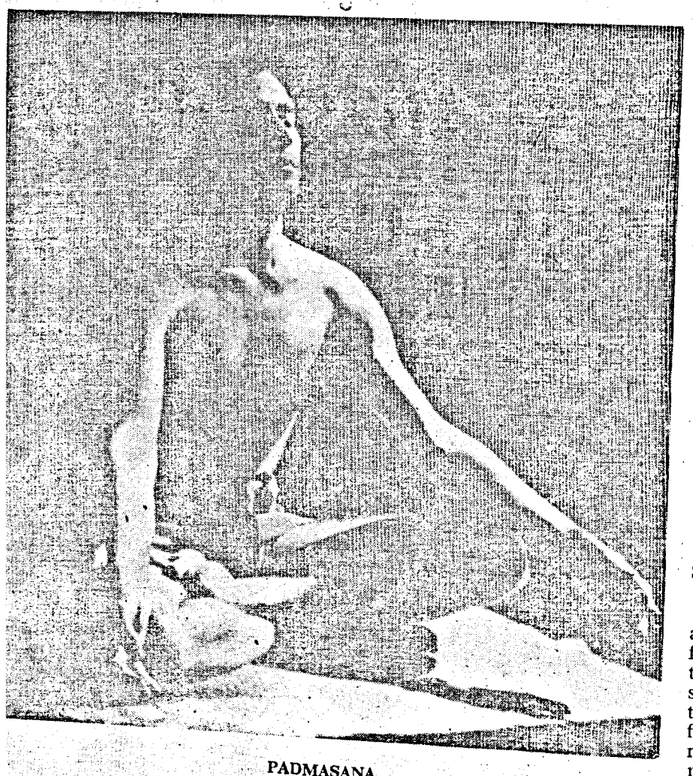
Suspended particulars in the air were collected over 24 hours period by the use of a high volume sampler at an average rate of 35 cu. ft/min. (991 lit/min./).

Settleable particles (dust) in the air such as soot, fly ash and smoke were measured by dustfall jar over a period of one month.

The amount of sulphur containing gases including sulphur dioxide in the atmosphere was measured by sulphation rate using lead peroxide candles over a period of one month. This survey was conducted for two months, March and April, 1971.



YOGAMURDA



PADMASANA

BENEFITS :

The liver, spleen, pancreas and intestines are all gently massaged. The abdomen will be reduced. It firms and slims the thighs.

Chakrasana : The Wheel :

Lie flat on your back. Flex the legs at the knees and place the heels close to the body. Bend the arms, place the palms over the shoulders, fingers pointing towards the body. Lift up the whole body until it forms an arch.

BENEFITS :

Stimulates the spine and spinal nerves. Helps to correct constipation and digestive troubles. It prevents excess weight.

Padahasthasana :

Stand straight with hands over the head. Slowly bend the head forward and down. Keep the knees stiff and try to touch the toes.

BENEFITS :

The blood rushes to the head. You derive the same benefits as in Sirasana.

Padmasana : (Lotus) :

Sit on the ground. Flex the legs at the knees, bring the right foot onto the left thigh and the left foot onto the right thigh. The hands may be placed at the sides of the knees or placed together in front, one palm on the other.

Yoga Mudra :

Sit in the Padmasana posture but with hands behind. Now bend forward till the forehead touches the ground. Exhale and inhale for a few minutes. Return to position.

BENEFITS :

The same as in Sirasasana.

Savasana :

Lie flat on the back, legs a little apart and hands just a little away from the sides of the body. Close the eyes. Take a deep breath and start relaxing. This asana is practised after the other Asanas, when finally you relax both in body and mind. After relaxing for five minutes you can start attending to your routine work.

Yoga for the Cure of Heart Diseases

Yoga experts claim that heart diseases can be cured but there is very little medical evidence to prove it.

A team of doctors headed by Dr. C. Lakshmikanthan, head of the Department of Cardiology, Institute of Cardiology, G.H. has begun a research study of of the influence of yoga on the cardio-vascular system using modern electronic gadgets.

A group of volunteers consisting of yoga experts, heart patients and healthy persons not practising asanas were used for the study of yoga asanas on the heart. Heart-wave, blood pressure, ECG by telemetry, oxygen consumption and cardiac performance were recorded.

After observing the volunteers for a few weeks, the cardiologists have come to the conclusion that the practice of certain asanas have beneficial effects on the heart, while some others have harmful effects.

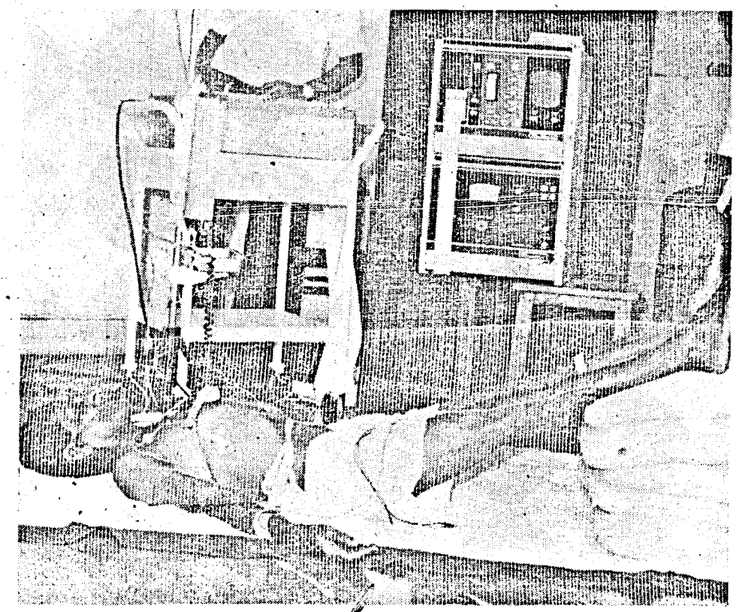
Certain asanas help to cure heart diseases like hyper-tension some help to rehabilitate patients after a mild attack.

With the help of Thiru Ramabhadran, a yoga practitioner the medical team studied the effect of several asanas including Shava sana, Veepareethakarani and Padmasana. Thiru Ramabhadran has modified the asana Veepareetha karani and naming it Ramakarni. This asana was found to be simple and easy for the heart-patients. The patient lies down with his feet raised by five or six pillows which eases blood flow. Dr. Lakshmikanthan said the studies conducted at the General Hospital Madras, were the first of their kind in India. The studies were elaborate with the help of modern electronic gadgets.

He said that the yoga experts claimed that asanas had a curative effect. This claim with reference to heart diseases were being studied now scientifically.

The asanas, however, should not be practised indiscriminately, but only under the guidance of the yoga expert and a medical specialist, he added.

Heart beat, blood preasure recorded by telemetry



While such drama artistes have very well adjusted themselves to the film screen, and have excelled in their jobs, endeavour has to be made to locate talents among people who do not have the opportunity to enter the drama stage and at the same time, if recognised and trained, would turn out to be excellent artistes. A good percentage of those who are listening to me now, might be potential film artistes, film directors, cameramen, film editors and so on and it might need only, on the part of somebody to recognise your talent and to shape you out — and for that, the film institutes are endeavouring.

The Poona Film & Television Institute and the Institute of Film Technology at Madras are two major institutions which look out for talents and which are engaged in training talented youths in the various aspects of film making. The problem of the film institutes is two fold ; the first and perhaps the more difficult, being to get at the really talented, and the other, in developing this talent by a process of training, in a climate of filmic expression.

The Institute of Film Technology at Madras used to receive a large number of applications every year for admissions, the proportion being always larger in the case of the Acting Course. The Selection Committee, comprising of eminent filmic personalities and technical members find a difficult time in assessing the quantum of talent that lie dormant in the fabric of the hundreds of candidates whom they examine ; the real talent being sometimes shrouded by an emotional surge and eagerness to get into the charm of the film world.

Students Practising dance

In the case of the Film Acting Course, after a series of preliminary tests, the candidates who seem to possess the right type of aptitude are subjected to a screen test ; which is actual filming of the candidate with make-up, doing a small talkie role. His or her personality, photogenic appearance, audition, gait, manner of walking, capacity for scenic rendition, etc., are all judged from this piece of film that is processed and viewed by the Selection Committee. If any one amongst you—girls or boys—feel confident of standing the above tests, you are welcome to approach this Institute.

Once the Selection Committee endorses your talent and you are able to join the Institute, you will be placed in an environment in which your talents will bloom into perfection.

The Institute is not merely a teaching institution, where you get only theoretical instructions and laboratory exercises ; but it is a temple of training where you are placed in an atmosphere of filmic arts and techniques, where your own aptitude and individuality will find scope of cinematic expression.

Thus, while in olden days the pioneers of the Film Industry had to take the trouble of locating talent and bringing them up in their own way, the Film Institutions are now functioning to carry out these jobs in a more organised and scientific manner. The mission of the Film Institutions will be successful if the talented ones amongst you come forward for the training.

Students of the Acting section at work

Courtesy : A.I.R.

ECONOMIC CENSUS AND SURVEYS IN TAMIL NADU

SELVI
R. PADMAVALLI, M A.,
DIRECTOR OF
STATISTICS

The term "Census" instantly brings to our mind population Census conducted regularly on a decimal basis right from 1781. Population Census envisages collection of data on the size and structure of the country's population. It enables in-depth analytical studies of the available manpower, resources and their demographic characteristics. Similarly, we have also had livestock censuses periodically on a quinquennial basis. Livestock Census aims at collection of information on the livestock wealth of the nation. Data collected through the Livestock Census have formed the basis for the formulation of ever so many dairy development programmes. In the field of agriculture also, a census is conducted on a quinquennial basis, the object of the Census being to collect data on the essential characteristics of agricultural holdings such as number and size of operational holdings, land utilisation pattern, types of tenancy etc.

In our country there is lack of adequate data on the unorganised sectors of Industry, Trade, Transport, Construction and Services. This gap has seriously handicapped the planning process particularly at the state and lower levels of estimation of State and National Income and also the identification of relatively backward districts. Therefore for the first time we are embarking on an Economic Census of unorganised non-agricultural sectors with the same significance as the population or agricultural Census. Any non-agricultural enterprising establishment with an identifiable premises employing one or more paid employees on a fairly regular basis will be covered by this Census.

Dependable statistics constitute an important infrastructure for sound planning. Efforts have been made during the past three decades by statisticians at all levels to build the edifice of the Indian Statistical system in general and statistics relating to agriculture in particular on a sound basis. The system still admits of improvement. The non-agricultural sectors of the country like manufacturing, trade, transport, construction, services etc., have not, however, been given the due attention they deserve. The availability of statistics on these sectors is far from satisfactory. It is true that, on some organised segments, data are being collected regularly through normal administrative channels. But there is an almost total lack of information on the unorganised segments. For instance, under the Annual Survey of Industries, information on the manufacturing establishments registered under the Factories Act, 1948, is collected regularly. But there is no such regular collection of reliable statistics for non-factory units such as manufacturing establishments using power and employing less than 10 persons or those not using power and employing less than 20 persons. Similarly, while data on railways and air-transport can be had from their respective administration departments, practically no data are available on road and water transport in the country. There are similar chunks of dark areas in the sectors of trade, service, construction etc., paucity of information on these unorganised segments, which constitute one of the most vital links of the chain of the Indian economy had naturally led to the neglect of their planned development. Their importance could hardly be over emphasized. They are estimated to account roughly for about one-fourth of the National Income and about one-fifth of the country's labour force. It is evident that they have an important role to play in the country's economic development.

The Department of Statistics in Tamil Nadu has, therefore, launched a State-wide Economic Census as a Central Sector Scheme sponsored by the Central Statistical Organisation. Attempts hitherto made to organise surveys of industries etc. in the unorganised sector have only been sporadic and partial. The economic census now proposed is, however, an integrated one and is expected to bridge the gap in the existing statistical system. The objective is to ascertain the structure, activity and performance of the un-organised segments of the non-agricultural sectors of the economy. The Census is intended to collect information on the distribution of establishments by location and activity and also estimate the value of inputs and outputs, investment, etc., for the un-organised segment of each major sector of the non-agricultural economy.

The work will be carried out according to a phased programme by (1) a census of all non-agricultural

Pollution Parameters :

The parameters selected for the pollution survey were :

(*i*) Sulphur dioxide
(*ii*) Nitrogen dixoide
(*iii*) Hydrogen sulphide
(*iv*) Ozone
(*v*) Sulphation rate.
(*vi*) Suspended particulate matter.
(*vii*) Settleable dust fall rate.

Date and Discussions :

Air samples were collected from each one of the six stations once a month for four months. Samples were collected for 24 hours in each station in 6 hour batches for gaseous contaminants.

Dust Fall Measurement :

Dust fall measurement was done only at three sampling points for one month periods during March and April. These samples were further analysed for total insoluble matter, volatile matter, and inorganic matter.

Sulphation Rate :

Sulphation rate was measured over a period of one month at three sampling points during March and April using lead candles.

These values serve as an index to evaluate the quantity of sulphur dioxide and other sulphur compounds present in the atmosphere.

Suspended Particulates :

Particulates in air were collected over 24 hour period using high volume sampler,at an average rate of 35 cu. ft/min (991 lit/min). Benzene soluble portion of the particulate matter was also analysed.

Gaseous Pollutants :

Sulphur dioxide, nitrogen dixoide, hydrogen sulphide and oxidants in air were collected over a period of 24 hours once in a month, at six sampling points in the city for four months. In each 24 hour sampling, samples were collected in 4 six hour periods representing morning, noon, evening and night. The volume of air drawn through the absorbing media was regulated at 500 ml/min.

Sulphur dioxide :

The sulphur dioxide concentration in the atmosphere was found to vary from 13.15 to 77.2 g/m^3 (average values). In March a maximum value of 244.4 g/m^3 was recorded at General Hospital in the morning period of the day. The pollution due to SO_2 is significant at Basin Bridge in all the four months of the study.

Nitrogen oxides :

The nitrogen oxides concentration was found to vary from 11.52 to 37.05 g/m^3 (average values). A maximum value of 86.10 g/m^3 was recorded at Basin Bridge in the month of April. The NO_2 concentration was observed to be highest in the month of April except in two of the sampling stations.

Hydrogen sulphide :

The concentration of this pollutant in the atmosphere was found to vary from 0.87 to 7.32 g/m^3 (average values). A maximum value of 23.89 g/m was recorded at AASI Building, in the month of March. During April the concentration was found to be high in the three stations Basin Bridge, Kodungaiyur and Ennore.

Oxidant Ozone :

The concentration of ozone in the city atmosphere was found to vary from 1.69 to 15.29 g/m^3 (average values). A maximum values of 55.00 g/m^3 of this pollutant was recorded in the month of March at Ennore. No standards for air quality have yet been adopted in India.

As a whole, Basin Bridge area appears to be the most polluted part of the city. Suspended particulate matter and dust fall concentrations in the city show 3 to 4 times higher values when compared to other cities of the world. This may have to be borne in mind while planning the future studies as well as air quality standards. The overall assessment of the results show that there appears to be very strong need to assess the exact status of air pollution in the city by a full-scale investigation to obtain more detailed information on long term basis. The collection of such data will be useful to keep the environment clean by proper zoning of industries and hasten the enactment of control legislation.

Summary and Conclusions :

Short term air pollution survey of Madras City during January to April, 1971 gave very useful data regarding the general air quality in the city. This survey was carried out selecting six representative sampling points in the city. Though the stations were selected with care it is possible that pockets of high pollution exist in the city. Pollution levels recorded in these studies are summer values and therefore likely to be lower than the corresponding winter values.

Particulates in the atmosphere were found to vary from 86.92 to 469.40 g/m^3. Maximum value of 733.60 g/ms^3 was recorded at Basin Bridge in the month of April. Minimum value of 32.03 g/ms^3 was recorded at Kodungaiyur in the month of April. The average suspended particulate matter during Juuary to April at Basin Bridge was 469.40 g/ms^3 which is more than the concentration of particulate matter reported in cities abroad such as London, Chicago, Los Angeles and Tokyo.

Dust fall in the atmosphere varied from 36-06 to 392.7 tones/sq. mile value of 392.7 tons/sq. miles/month (154.10 tonne/sq. km. month) was recorded at Basin Bridge in the month of April. The minimum concentration of 36-06 tons/sq. mile/month (14.15 tonne/sq. km/month)occured at General Hospital in the same month.

The sulphation rate recorded during March and April was found to vary from 0.2315 to 1.33 mg SO_3/100 sq. cm./day. The maximum value of 1.33 mg/SO_3/100 sq. cm./day was recorded at Basin Bridge in the month of April. In both the months the maximum values occured at Basin Bridge and the minimum at General Hospital.

Tapping and Training Talent in the Film Industry

By
Thiru R. SIVATHANU PILLAI,
PRINCIPAL,
Institute of Film Technology.

The Film Industry of India is a very vast one. Something like Rupees thousand-five-hundred-million is the capital investment in this industry ; about one lakh and fifty thousand persons are directly or indirectly employed in it. The annual gross collections by way of sale of tickets is about Rs. Sixteen-hundred-million. There are about 70 studios in the country producing feature films. India is the highest feature film producing country in the world. Films made in India are shown in 110 countries.

These impressive figures make one rank the Film Industry as a major industry ; but there is a vital difference between the Film Industry and any other Industry. The difference is, that, in spite of the advanced science and technology involved in it and the most sophisticated and elaborate machineries used in the making of films, the 'human element' plays a vital role in its making, —right through all stages of production and, it is the quantum of talent possessed and displayed by the 'human element' that finally shapes the output commodity of this industry. In every other industry, there is a standardisation of the output product and the quality of the output product is constant, as the design engineers, who draft the initial blue print. The talent involved is only to the extent of this standardisation ; and once this standardisation is achieved by the initial designers, it is only a matter of maintaining this standard. Fortunately or unfortunately, it is this lack of standardisation of the output product, that two products which come out of the Film Industry are not and cannot be alike, that makes the Film Industry an industry with a difference. There is original design involved in every stage of film production and in each of the productions. The significance of this 'human element' is because film is a synthesis of Arts and every Art can thrive only on human resources.

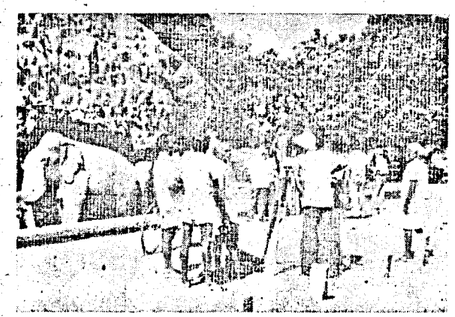
Thus, in the process of film making, talent becomes the real raw material that has to be fed into the machinery of its making. Locating this talent may be a difficult task for the film industry, since it does not exist like a mine of iron ore for a steel factory to readily draw upon. Talent is scanty and scattered and, in many cases latent like the pearl in the oyster, which the searchers have to locate with patience and even when once located and picked up, one has to do a bit of cleaning and processing to make it lustrous. Even to spot real talent, talent is required on the part of the searcher ; And that is perhaps why new faces are brought to the screen by few personalities alone in the Film Industry.

The talent of every person connected with film making, makes an impact on the final film ; but the most significant among them are, the Artistes and the Directors. It is the Directors who endeavour to locate talent for the roles to be played. Thiru K. Subrahmanyam, a pioneer in the Tamil Film Industry, had the gift to locate original talent and many artistes who later on became famous Stars were discovered by him and brought to the industry. Other Stalwarts of the film industry like Thiru A. V. Meyyappan, Thiru S. S. Vasan, Thiru H. M. Reddy have also contributed a lot in recognising original talent and introducing them to the screen. Talented new faces have been and are also being introduced by other contemporary Tamil Film Directors which gives a new dimension to the Tamil films.

The venue for identifying talents for the Film Industry has been mostly the dramatic stage. The majority of the top stars in our Industry had their entry into the films from the drama. This has been the case because, the drama stage provided these persons the opportunity to display their hidden talents, which otherwise would have remained unidentified, like the blossoms in the desert soil.

Students in the Studios shooting a film sequence

Students at out door Film Shooting programme



Economic census in non-agricultural sectors to bridge the gap

establishments in the urban and rural areas followed by (2) sample surveys of select segments. During the census basic information will be collected on location, management, type of activity, number of persons employed and the nature of goods and services produced. The sample surveys that will follow the main census will go deeper and seek from the selected establishments of the unorganised segments of the non-agricultural sectors, detailed information particularly on the value of inputs and outputs. A fairly large sample of establishments from each sector to provide estimates of reasonable accuracy at the State and District levels will be canvassed.

The detailed sample surveys proposed will be carried out in three phases, covering in each phase one or more sectors from the non-agricultural unorganised segments.

An establishment, for the purpose of the Economic Census, is defined as a unit or household which undertakes non-agricultural economic activity and employs at least one person hired on a fairly regular basis. It is estimated, on the basis of the 1971 census figures, that Tamil Nadu alone accounts for, on an average, a little over 90,000 such establishments engaged in non-agricultural economic activities.

The census will be conducted throughout Tamil Nadu both in the urban and rural area during the last quarter of 1977. The pilot census conducted in the five taluks of Chengalpattu, Kancheepuram, Tiruvallur, Sreeperumpudur and Thiruthani had revealed that there are about 13,700 units engaged in non-agricultural economic activities in these five taluks alone, with one or more hired labourer, excluding 68,698 units of own account enterprises. The aim of the pilot census was to assess the volume of work and gain the necessary operational and organisational experience in Census operations.

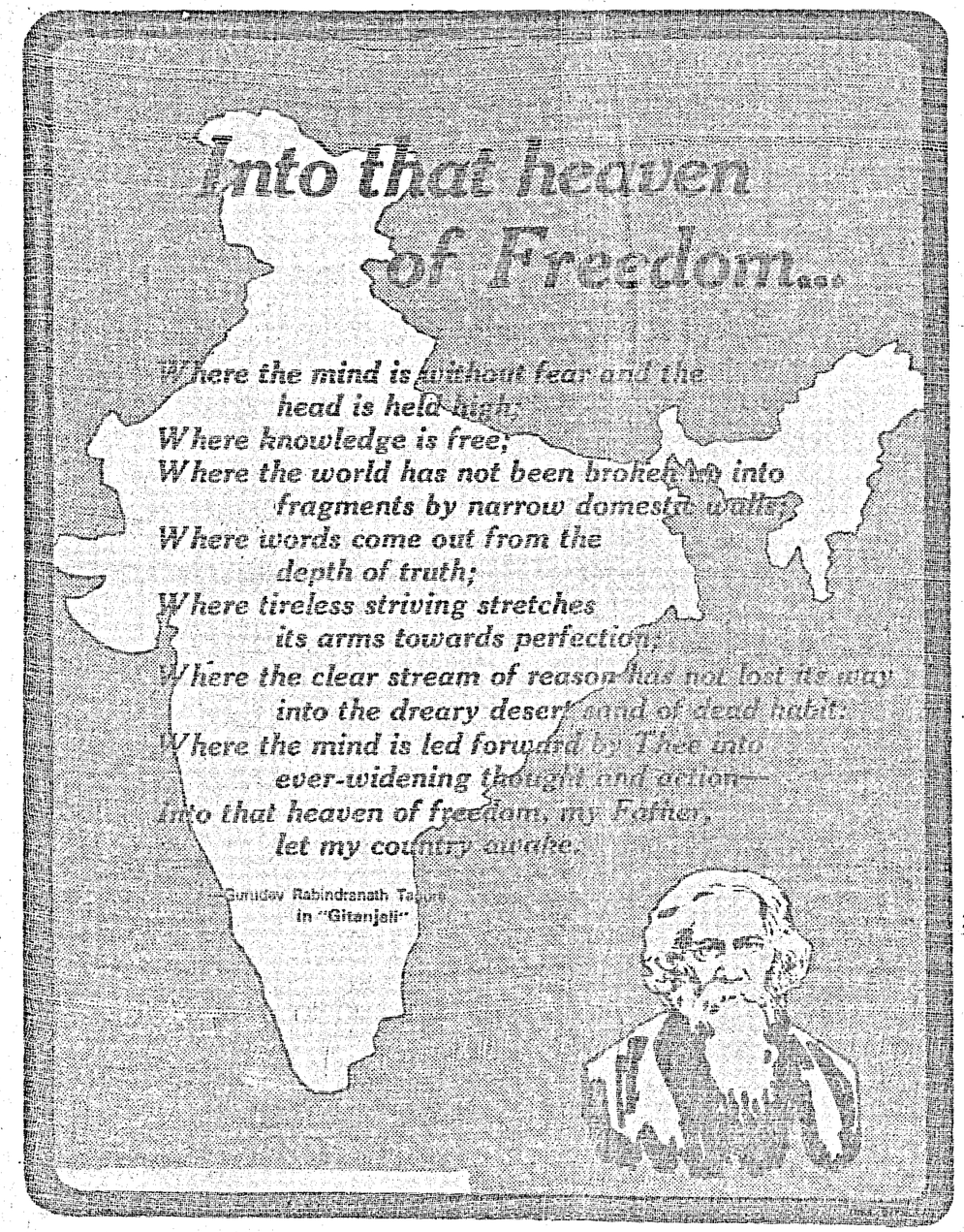
The overall responsibility for organising and guiding the census operations in Tamil Nadu vests with the Department of Statistics. The Collectors in the districts will be nominated as the District Economic Census Officers. There will be a District Level Committee in each district with the Collector as the Chairman and the Statistical Officer as the Convenor. At State level, the Secretary to Government (Forest and Fisheries) will be the Chairman and the Director of Statistics will be the Convenor.

The Success of this Big Venture Depends On The DATA

The sample surveys to be undertaken subsequent to the Main Census will, however, be entrusted to the trained statistical personnel of the Department of Statistics.

The success of this big venture, new and pioneering as it is, depends on the data which the informants come forward to give. Accurate information would ultimately help field enumeration work. As the Census involves massive operation extending over the entire rural and urban areas of Tamil Nadu, thousands of enumerators would be drafted for the purpose. Technical guidance, training and supervision would be provided by the Department of Statistics.

The services of school teachers and Village Level Workers will be availed of on a part-time basis for he establishments participating in the Census by drawing the attention of the authorities concerned to the areas of concentration of important activities and to their problems for improving the organisation. It is essential, therefore, that every respondent extends his/her whole hearted co-operation in making available the required information to the best of his/her ability in the interest of the Nation as a whole.



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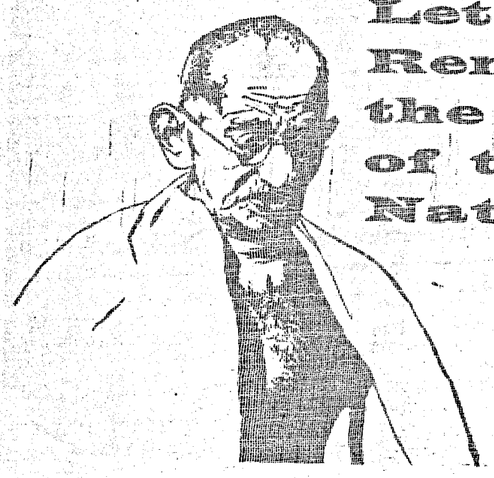
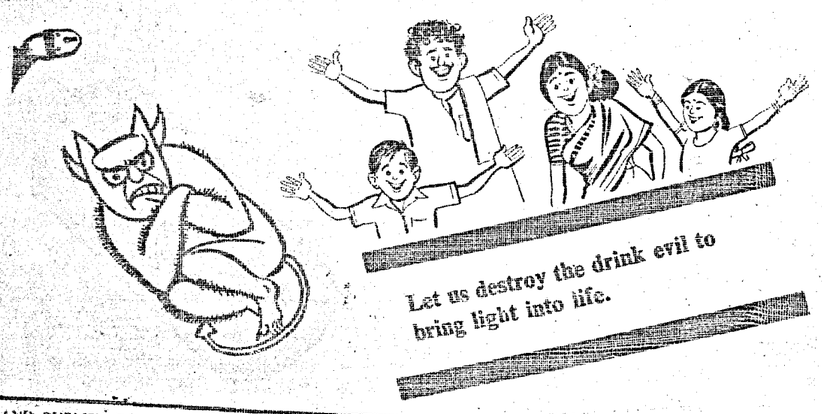


Let us Remember the Father of the Nation

"Drink is a Social evil. It reduces man to the level of a beast. It is our duty to take steps to erradicate this evil."

—MAHATMA GANDHI



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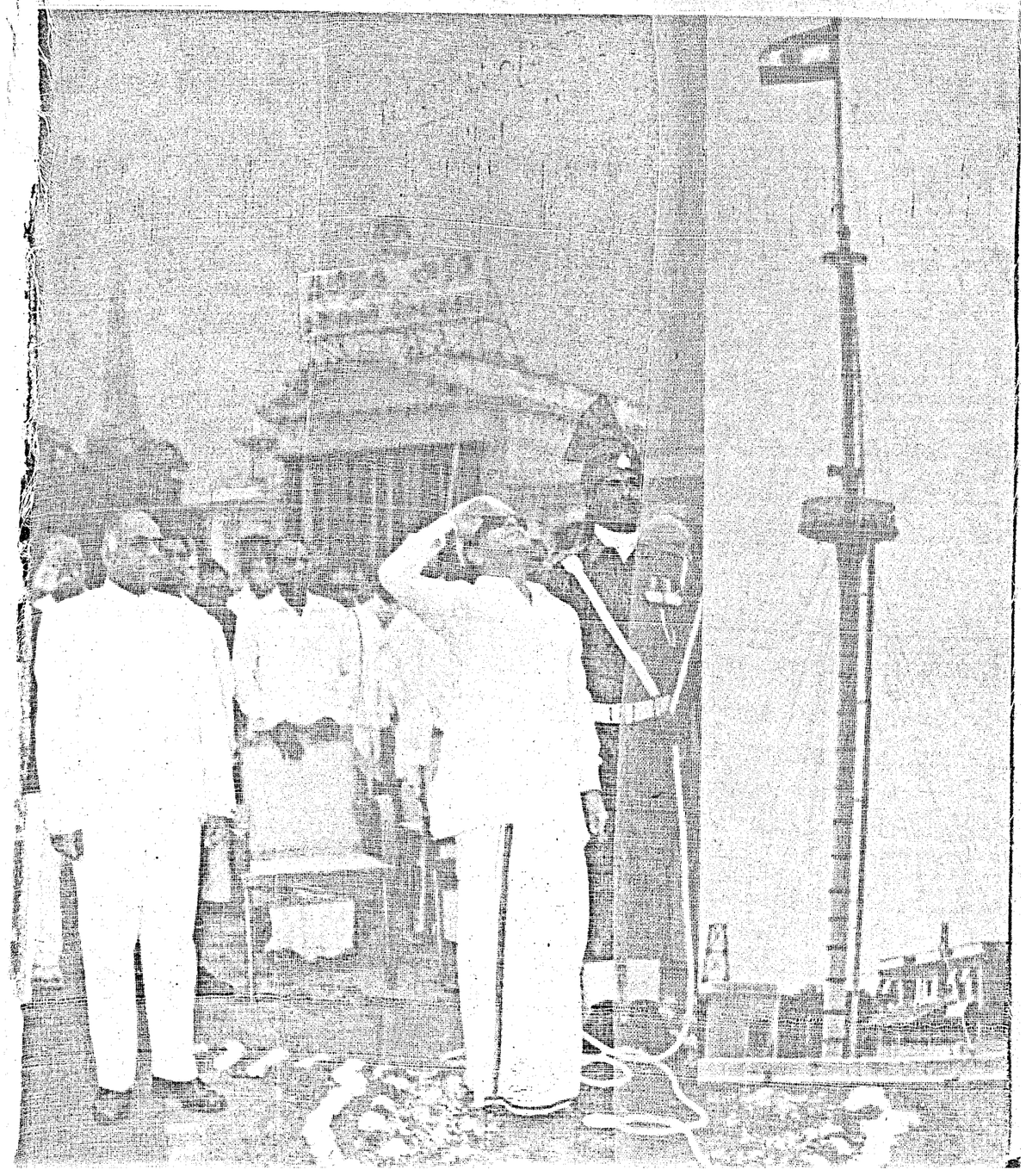

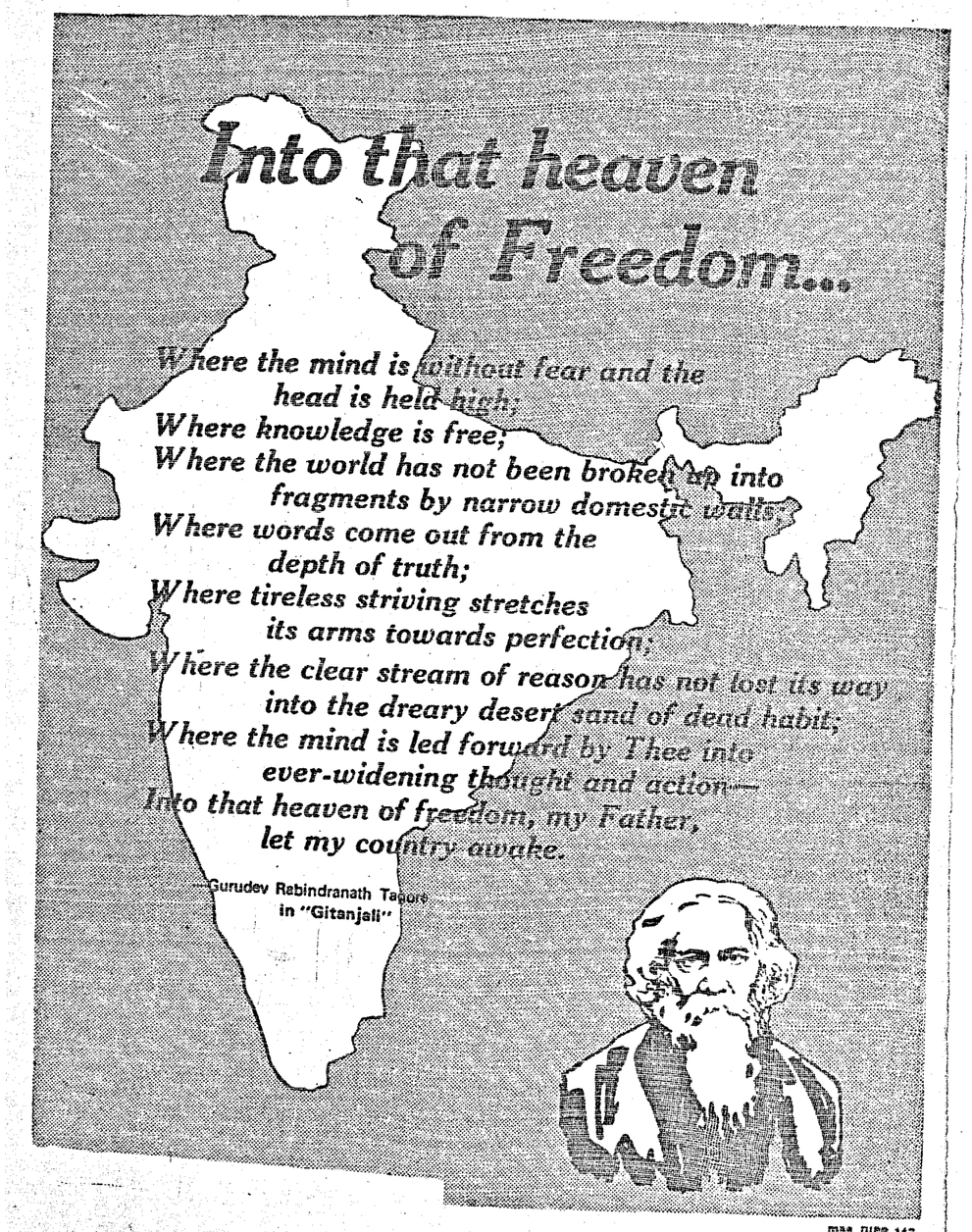

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Tamil Arasu

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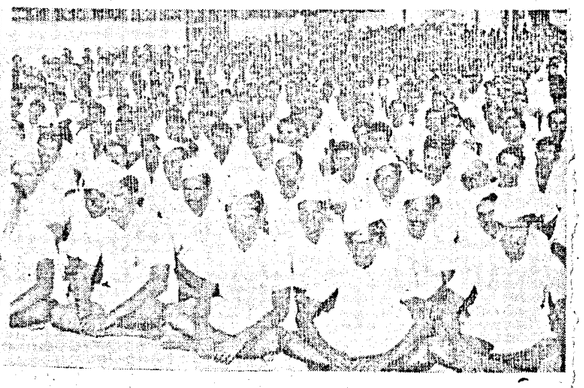
RAKSHA BANDHAN CONTRIBUTES TO NATIONAL INTEGRATION

Raksha Bandhan, the festival of tying Rakhi, symbol of sister's affection to their brothers, was celebrated for the first time inside the Central Prison in the City. About 200 Gujarati ladies and members of the Raksha Bandhan Samiti participated in the function. The ladies tied Rakhi threads to the prisoners and sweets were distributed to the inmates.

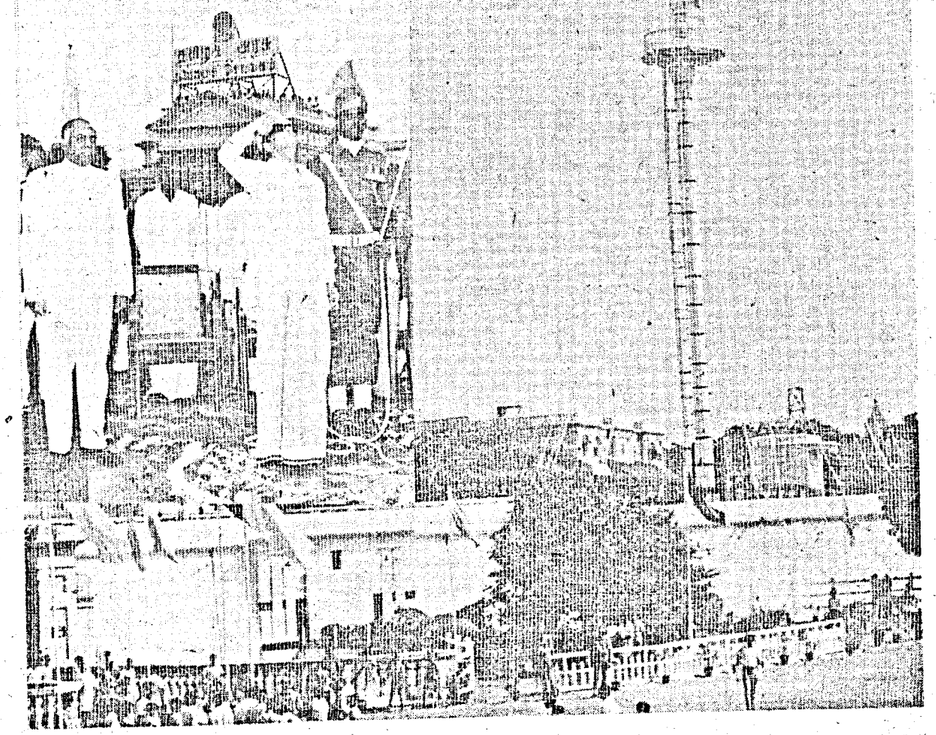
The Governor of Tamil Nadu, Thiru Prabhudas Patwari, who presided on the occasion, said, "This function contributes to national integration as the sisters of Gujarat tie the Rakhi of affection to their brothers of Tamil Nadu. Recalling how he himself was a prisoner in Baroda jail exactly a year ago and how he received the Raksha Bandhan there, the Governor said, "the holy festival serves as a sort of bridge between national integration and world fraternity. The best way to repay the debt of affection, was to see that the prisoners when released from jail, did not indulge in any act that the sister who tied the Rakhi would have to hide her face in shame in future. During their stay in prison, the inmates should read books that would ennoble their thoughts."

The Minister for Law, Thiru K. Narayanaswami Mudaliar, said "the Government is thinking of introducing reforms in jail administration, particularly in the matter of food supplied to the inmates."

Thirumati Sabita Ben Kamdar tied the 'Raksha Bandhan' to the Governor and the Minister. Thiru Kanubhai Bhavsar explained the significance of the festival. The Inspector-General of Prisons, Thiru S. Murugesan thanked the Raksha Bandhan Samithi for celebrating the festival in a way which would bring cheer to the prisoners.

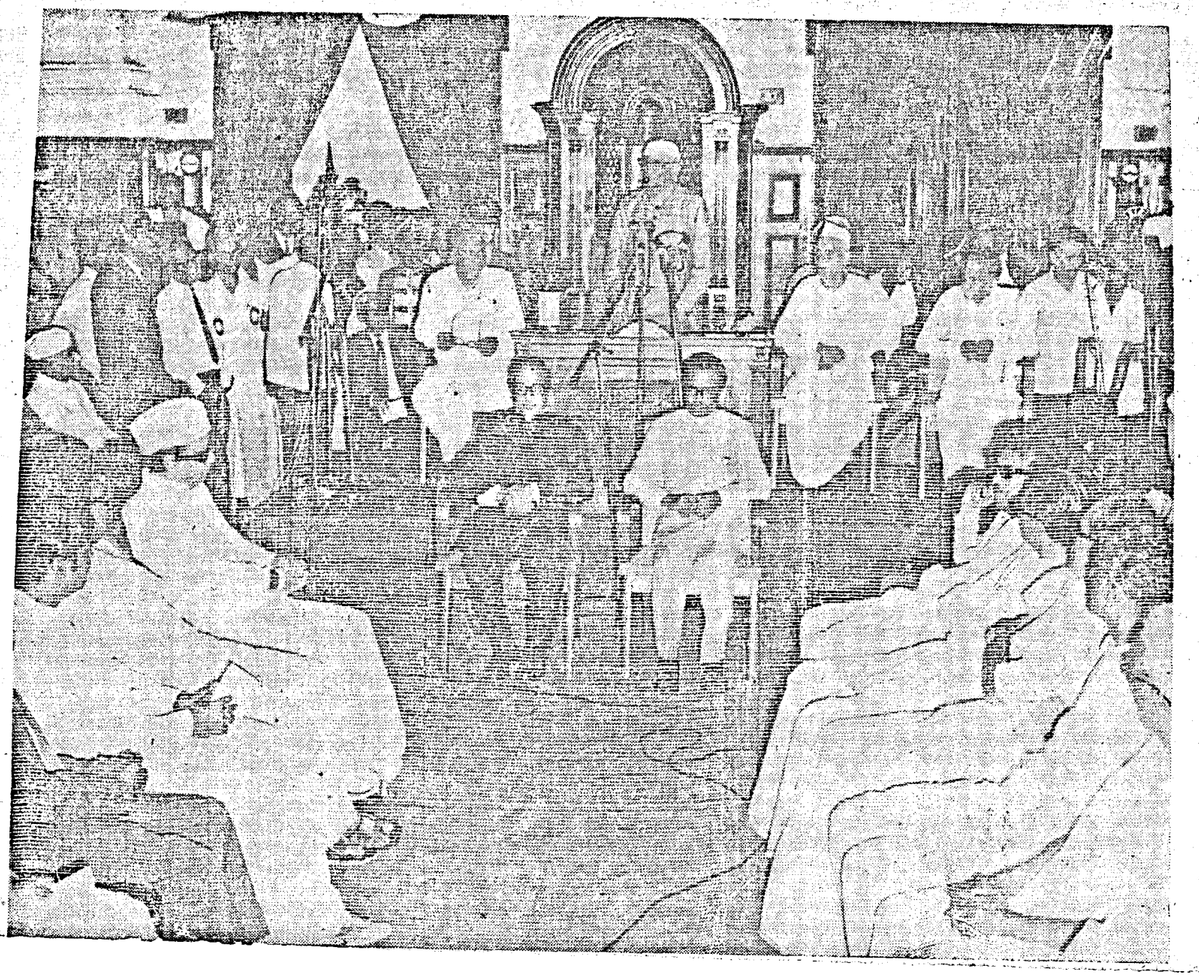


C.M. SALUTES NATIONAL FLAG



THIRU M. G. RAMACHANDRAN, *Chief Minister of Tamil Nadu, hoisted the National Flag on the ramparts of the historic Fort St. George on Independence day on* 15-8-'77

President's Tribute to Kamaraj



The President Thiru N. Sanjeeva Reddi paid tribute to the integrity and simplicity of Thiru Kamaraj and said the best way one could pay homage to him was to follow his example of cleanliness in public life. Thiru Sanjeeva Reddi, unveiled a portrait of Thiru Kamaraj at the Tamil Nadu Assembly Chamber, on 18-8-1977.

" Thiru Kamaraj led a clean life. He left no property, and money never had a lure for him. Whether as Chief Minister, PCC President or President of the AICC, he remained a humble man, a man of the masses. He lived all his public life in the same small house, took the same food and had the same servants - that he was a big man never went into his head. This was the greatest quality of Thiru Kamaraj.

If we are to honour his memory, let us observe the ethical standards he set. India will be a little better if we lead a simpler life. Let Tamil Nadu where Thiru Kamaraj was born, worked and preached, give a lead to the rest of the country in this regard " said the President.

The President said, " I am happy that this is my first public function as President for it provided me an opportunity to pay my own tribute to Thiru Kamaraj. If to-day I am Rashtirapathi I owe it to Kamaraj. He wanted it to happen in 1969 but God willed otherwise. I am sorry Kamaraj is not with us to-day."

The President said, " Thiru Kamaraj was not rich and did not have any university education and yet, he rose to the top in the political field, to help shape the destiny of not only Tamil Nadu but of the entire Country. This is the strength of our democratic way of life and let us preserve it.

Though I was junior to Thiru Kamaraj by ten years, we grew up in politics on parallel lines. When Thiru Kamaraj became TNCC President, I was President of the APCC, and when Thiru Kamaraj became Chief Minister of Tamil Nadu, I took over in Andhra Pradesh a few months later. When Thiru Kamaraj resigned the Chief Ministership, I also stepped down.

Our decisions were always governed by the larger interests of the people of our States and never by narrow linguistic considerations. Our association was so close in those days, that when the dispute arose over Tiruttani, we were able to settle it amicably. We told Thiru Jawaharlal Nehru, "you need not worry about Tiruttani, as in the case of border disputes of other States, but leave it to us."

"We met very often at Tirupathi. These meetings were tried to be put in a bad light. They called us syndicate. If we discussed anything, it was in the material interest and not to grab at anything.''

Thiru Sanjeeva Reddi referred to the selfless service of Thiru Kamaraj and said he was not after power. Citing an instance, he said, " When Jawaharlal Nehru was seriously ill, everywhere they were asking the question " After Nehru-Who." A number of leaders like Thiru V. K. Krishna Menon wanted Thiru Kamaraj to become the Prime Minister. I also suggested to Thiru Kamaraj to take over the high office as I thought it was a rare-opportunity for a South Indian. But Thiru Kamaraj declined. Can anybody reject this offer except a selfless man like Thiru Kamaraj.

Again, after Thiru Lal Bahadur Shastri's death, Thirumathi Indira Gandhi said she would not take up the Prime Ministership unless Thiru Kamaraj was for that. Such was the stature of Thiru Kamaraj, the President said.

Thiru Kamaraj was an unhappy man when he died. During the three months prior to his death we used to meet frequently and discuss the situation in the country. Once I asked Thiru Kamaraj " Shall we atleast go to Delhi and act instead of sitting in Madras. Thiru Kamaraj answered ' No '. He was then a disturbed and depressed man.

He wanted the merger of both the Congress. He wanted the merger at an All India basis and not at the State level. He loved the country and he loved the organisation. But he never wanted to be a defector, by he and his friends in Tamil Nadu alone joining the Congress.

Referring to the other portraits in the hall-of Rajaji, and Anna, Thiru Sanjeeva Reddi said " can you pick a black spot in the life of any one of them ?" I am sure the lives of these great men would inspire every one to be " cleaner " and to serve the people to the best of one's ability."

—Excerpts of the Speech of the President, Thiru Sanjeeva Reddi, at the Tamil Nadu Legislative Assembly after unveiling the portrait of Thiru K. Kamaraj on 18-8-77.

C.M's call for a Casteless and Classless Society

Most respected and beloved citizens of Tamil Nadu, the Chief Secretary, Secretaries, Officers of the Defence Services, former Chief Minister, Thiru Karunanidhi, Members of Parliament and Legislature, mothers, beloved brothers and others present here :

Let me at the outset, offer my Independence Day greetings and grateful thanks to all of you.

We are all well aware of the fact that there can be no greater evil for a country than being under colonial rule. It is my duty to tell you, that while at this moment of hoisting the flag, my mind goes back to the days of the freedom struggle. It is our duty to pay homage to the patriots who sacrificed their properties, professions and titles in their desire to achieve freedom for the country. I recall an incident while unfurling the flag. During the British rule, their troops defended the Fort St. George. The people used to wonder whether the national flag could ever be hoisted on the ramparts of the Fort. Even the brave freedom fighters were entertaining such a doubt. The troops surrounding the Fort were one fine morning aghast to find the national flag fluttering in the sky.

I was amazed to find that a young man, unmindful of the troops had hoisted the national flag thereby revealing to the world his spirit of patriotism. On this day I pay homage to all the patriots. Such feelings should continue to flourish. This is an occasion to remember the number of Independence days that have taken us forward, and those whothink of progress should work together for the establishment of an egalitarian society in which all sections of the people irrespective of the differences in caste and creed should live harmoniously ; this is the day when we must remind ourselves of our objectives and the means to fulfill them.

It is our tradition to thank those who have made sacrifices. Everyone knows that the Tamilians are not an ungrateful people. The world is watching us. The fact cannot be denied that amongst the democracies of the world it is the Indian sub-continent which has the largest electorate and has continued to be a democracy. Probably the world is a little envious of our progress during the last 30 years.

Let me make this point clear. The people are aware of their powers. The last elections gave us an opportunity to realize this. We must be proud of the fact that the recent general elections has provided us a good opportunity to show that people expect those in whom they repose their trust to carry out what the people think is correct.

Our responsibility is enormous. Let me tell you here that on the day when the farmers, labourers, down trodden, backward classes, tribals, women and destitute women live in contentment will be hailed as the day visualized by Mahatma Gandhi and Arignar Anna. This could not be achieved by any individual or any single party. It can be achieved only through the joint efforts of all, sinking their differences in ideas and ideologies and following the righteous path. This has been demonstrated to the world by the people of Tamil Nadu and the Tamil Nadu Legislature.

I make an appeal to the people of Tamil Nadu, that the Independence Day should be an occasion, when we should take a pledge to fulfill our duties to the country ; of how best

we can fulfill them. By eradicating casteism and casting away the useless beliefs in the name of religion which divides the country; and come together and work for the country's benefit.

I would like to say this on this occasion that whoever serves the nation, irrespective of differences in parties or ideologies, will be appreciated by everyone with elements of human feelings.

Till a few years ago, it was the convention for the Governor to unfurl the national flag. On this occasion it is my bounden duty to compliment Thiru Karunanidhi, the former Chief Minister, who made representations and changed this convention and securedthe rights for the Chief Ministers of the States to unfurl the National flag. If as a representative of the AIADMK and as Chief Minister I have hoisted the national flag today it is due to this. It is our duty to appreciate good deeds of anyone though we may condemn their wrong deeds.

Living in a country does not mean that everyone should live in his own palace. This is impossible of achievement. The attitude of the people should change. Let us take a vow that we will make efforts to extend the same facilities enjoyed by the people living in urban areas to those living in rural areas. We will take a vow to this effect in the names of Mahatma Gandhi and Arignar Anna.

We should recall the sufferings and grief undergone to achieve this freedom. In the early stages of the freedom struggle, it was thought that the British could understand only the language of violence. A number of persons followed the path of violence and gave up their lives. To attain independence, extremists like Vanchinathan, shot and killed the British and put an end to their lives and some even got hanged.

It must be recalled that Mahatma Gandhi avoided extremism and violence. He got independence for the country through the righteous path of

Ahimsa. He showed the world that Ahimsa could achieve many things. Arignar Anna has pointed out a number of times that the Mahatma has set an example in following the path of Ahimsa and that this should be followed by others.

Freedom does not mean freedom for everyone to do anything, they want. We realize that freedom is for the welfare of the people, to get assistance in future and to frame rules and customs towards this end. Only those who respect the freedom of others can truly appreciate freedom. Those of the privileged classes and persons who felt that others were obliged to be serfs must change their attitude. Let me tell you on this day of independence, that it is better that they give up such ideas. People have come to the conclusion that this attitude should be forcibly changed unless the priveleged classes voluntarily change their ideas.

Please remember that even after 30 years of independence, our enemies have questioned our viability. A free country is not one which consists only of forests and hills, fields and rivers and people. We have realized that we can claim this country to be our own only when the people can think and act freely. We should work constructively for the good of the nation. On the other hand we should not act as if the destruction of opposing groups or ideologies will help the growth of the nation.

Freedom will not be deemed complete unless there is a renaisance in the lives of the backward classes, scheduled classes, weavers, labourers tribals etc.

Sinking our difference of caste or creed, let us strive to honour the flag even at the risk of our lives. I appeal to you that you should take a similar vow. I want you to repeat after me thrice, the following :

C.M. : Indian Independence.

People : Long live.

C.M. : Indian Independence.

People : Long Live.

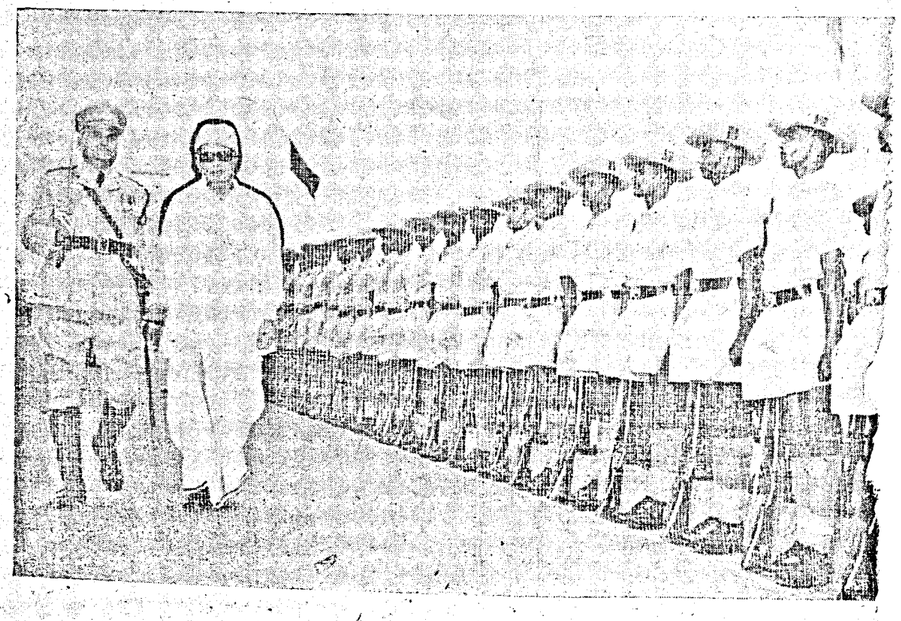
C.M. : Indian Independence.

People : Long Live.

Long live Anna's name.

Vanakkam.

Thiru M. G. R. Chief Minister of Tamil Nadu inspected a guard of honour presented by a contingent of the Tamil Nadu Police on Independence Day, 15-8-'77.



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EMPHASIS ON RURAL HEALTH

Good health of the people is the aim of all Public Health Programmes. Information regarding the incidence of diseases in a community is absolutely essential for effective implementation of these programmes. It is not adequate merely to obtain knowledge about mortality and morbidity. It is also essential to know how far people have been benefitted by the several schemes undertaken for their physical welfare. Further the rural population who form 70 per cent of our total population should receive special care. To achieve this objective, Government have undertaken several ameliorative measures over a period of time. Prevention and control of communicable diseases, provision of community health care including maternity and child health, improvement of nutritional standards of the people, provision of adequate health education, prevention of food adulteration and improvement of vital statistics, collection form essential components of this programme. The Health care services radiate throughout a net work of Primary Health Centres and sub-Centres.

PRIMARY HEALTH CENTRES

The Primary Health Centre, in Rural Family Welfare Unit constitutes an important and useful instrument of basic medical service in the rural areas. In about 130 Primary Health Centres, there are three medical officers, while in the remaining Primary Health Centres, there are two Medical Officers. The creation of the post of Third Medical Officer has been done with a view to enable the Medical Officer to cover the villages at least once a week by two Medical Officers each in a Mobile Team to provide basic medical facilities. Out of 383 Primary Health Centres 192 Primary Health Centres have been provided with dispensary buildings and staff quarters. The construction of staff quarters for another Primary Health Centre has been taken up. Construction of quarters for the remaining 190 Primary Health Centres would involve an expenditure of Rs. 4.37 crores. In view of the heavy expenditure, the construction is to be undertaken in a phased programme.

DRUGS FOR PRIMARY HEALTH CENTRES AND SUB-CENTRES

The annual provision of Rs. 10,000 already available for each Primary Health Centre for the purchase of drugs has been increased to Rs. 12,000, in order to keep adequate quantity of essential and life saving drugs so that the needs of the rural people are met in time. This additional provision of Rs. 2,000 has been provided under the Minimum Needs Programme for all Primary Health Centres and is available from 1974-75 onwards, and also will be available during 1977-78 with necessary budgetary provision. There is also a proposal to increase this provision of Rs. 12,000 to Rs. 14,000 during 1977-78.

Chief Minister

Thiru M.G.R.

A provision of Rs. 600 is already available for the sub-centres for drugs. An additional provision of Rs. 200 per sub-centre per annum was sanctioned under the Minimum Needs Programme for all the existing sub-centres. This additional provision available from 1974 onwards will also be available in 1977-78. Further, for the sub-centres functioning in the five districts where Multipurpose Health Workers Programme is taken up (South Arcot, Madurai, Kanniyakumari, Salem and Chengalpattu), a provision of Rs. 2,000 towards the purchase of drugs has been sanctioned under the Minimum Needs Programme.

HILL AREA DEVELOPMENT PROGRAMME

For the provision of medical care under the integrated development of the 'Nilgiri' district, the establishment of additional Primary Health Centres has been envisaged under this programme. An Additional Primary Health Centre has been established for Ootacamund Block at Thuneri in 1976 and another additional Primary Health Centre for Gudalur Block has been established at Nelakottai in 1977 and these two additional Primary Health Centres are functioning with full complement of staff. This is a Central Sector Scheme.

TRIBAL DEVELOPMENT PROGRAMME

Under the Tribal Sub-plan, a comprehensive health care strategy to improve the health status of the tribal groups living in the tribal pockets in Salem, North Arcot, South Arcot (Kalrayan Hills), Dharmapuri and Tiruchirappalli districts has been drawn up with an outlay of Rs. 20.26 lakhs for implementation during 1977-78 and is under consideration of Government. For detecting Venereal Disease cases among the tribals, a Laboratory has been sanctioned by Government for Primary Health Centre, Valavanthinadu in Kolli Hills Block, Salem district.

MINI HEALTH CENTRES

This is a Scheme to deliver a comprehensive health care consisting of preventive, curative and promotive health services to the villages by involving Voluntary Organisations, with financial assistance from Central Government, State Government and the Voluntary Organisation in the ratio of 1 : 1 :1.

The principle behind the scheme is that anybody who wants to look after his health can go to the Mini Primary Health Centre. The Mini Primary Health Centre will provide comprehensive health care for 1,000 families or 5,000 population (on non-sectarian basis) to all irrespective of caste, creed and community.

Pending concurrence of the Government of India for sharing one-third of the total expenditure, this Government have agreed to bear 50 per cent of the total expenditure of Rs. 18,000 per annum per each Mini Primary Health Centre. 34 such Mini Health Centres have been sanctioned by Government and these centres have started functioning from 1st June, 1977. In addition, certain other voluntary organisations have also come forward to run 20 more Primary Health Centres on the same terms and conditions applicable to first batch of 34 Mini Primary Health Centres. The additional expenditure to Government at 50 per cent of total expenditure will be Rs. 1.80 lakhs.

DISTRICT DEVELOPMENT DEMONSTRATION PROJECT

Government have sanctioned the implementation of the District Development Demonstration Project in Dindigul division of Madurai district comprising 10 blocks for the delivery of comprehensive and integrated package of health services. The Gandhigram Institute of Rural Health and Family Welfare has taken up this project.

MULTIPURPOSE HEALTH WORKERS' PROGRAMME

Government have sanctioned the implementation of the Multipurpose Health Workers' Programme in the districts of Chengalpattu, South Arcot, Madurai, Salem and Kanniyakumari. This programme is concerned with the implementation of preventive and curative health services in rural areas. One male worker and one female worker will be posted for every 5,000 population to render comprehensive health care including treatment of minor ailments. The programme will be implemented intensively after the staff return from training.

MATERNITY AND CHILD HEALTH CENTRES

The Maternity and Child Welfare services are rendered through Primary Health Centres, Panchayat Union sub-centres, Backward Area Scheme Centres in the rural areas and by Municipalities in the urban areas. The main emphasis here is skilled attention at delivery and safe-guarding the health of both mother and child thereafter. There are at present 2,831 Maternity and Child Welfare Centres run by the Panchayat Unions with the aid of grant from the Government. There are 128 Maternity Homes and 372 Maternity Centres functioning in the Municipalities in the State with Government grant.

In addition, the Government have established during Second Five-Year Plan 95 Maternity and Child Welfare Centres in remote and backward villages.

D.P.T. IMMUNISATION PROGRAMME

The scheme for the Immunisation Programme was launched in the State of Tamil Nadu during 1964 through the agency of Primary Health Centres and sub-centres so as to extend the benefit to the rural areas. The children in the age-group of 0-5 years are taken up for immunisation with triple vaccine. Each child has to be given two doses at an interval of 8 to 12 weeks.

In addition to this, under the Fifth Five-Year Plan period, Government have sanctioned the implemenation of the Special D.P.T. Programme, in 20 Primary Health Centres during the year 1974-75 with a staff of one additional Health Visitor for each of these Primary Health Centres and 13 District Public Health Nurses at the rate of one for each District so as to intensify the D.P.T. Programme in districts. During the year 1975-76, the Special D.P.T. Programme was extended to 20 Primary Health Centres with a staff of one extra Health Visitor and during 1976-77 this has been extended to 20 more Primary Health Centres. Thus the special D.P.T. Programme is being implemented in 60 Primary Health Centres now. The total number of children immunised during 1974-76 and 1976-77 are as follows :—

Year	*Number of children immunised*
1974—75..	1,98,528
1975—76..	1,86,528
1976—77..	2,48,000

CONTROL OF COMMUNICABLE DISEASES

Cholera.—Four districts (1) Tiruchirappalli, (2) Coimbatore, (3) North Arcot and (4) South Arcot in Tamil Nadu are considered endemic for Cholera. The incidence of Cholera is declining in these districts and generally throughout Tamil Nadu, as a result of the intensive Cholera control measures taken. During the year 1976, 853 cases and 47 deaths were reported due to Cholera as against 2,358 cases and 65 deaths in 1975.

There were unprecedented floods in Madras City due to heavy monsoon rains along with cyclone during 23rd November, 1976 to 26th November, 1976. Such floods are likely to be followed by mass scale outbreak of Cholera unless preventive measures are taken immediately. In the first instance, the affected people in the inundated slum areas were inoculated in the temporary camps, where they were accommodated. Necessary Health Education was also arranged in the City by the Health Education staff. Four publicity vans with loud speaker arrangements went round the city educating people about the precautions they should adopt. The radio, television and press were also utilised for health education purposes. Posters were exhibited in various parts in the City. Pamphlets were distributed in the city. The entire medical staff of Medical Education, Public Health and Corporation were utilised to undertake massive Cholera inoculation to avert any outbreak. But for these timely measures, the city would have been under the grip of Cholera.

Plague.—During the year 1976, the State was free from Plague. However, routine anti-Plague measures were instituted in the Plague endemic areas.

Small Pox.—The Small-pox Eradication Programme was launched in our State in 1963-64. As a result of sustained and effective work, our State is free from indigenous small-pox from June, 1969. The World Health Organisation has declared India free from small-pox on 23rd April, 1977. However during 1977-78 primary vaccination will continue to be provided and the surveillance activities will be continued. Suspected small-pox cases will be investigated and sufficient containment measures will be initiated.

Filaria.—This is a mosquito borne disease. About 13 million population are living in Filaria endemic areas of our State. For the purpose of controlling Filaria, the National Filaria Control Programme was launched in the State during 1957-58, with the establishment of four control units with Headquarters at Chengalpattu, Vellore, Chidambaram and Kumbakonam. These units could cover only 1.5 million population. During the Fourth Five-Year Plan, another eight new control units were established, covering a population of three million at Kancheepuram, Villupuram, Cuddalore, Thanjavur, Nagapattinam, Pudukkottai, Srirangam and Madras City. In addition one survey unit, one control unit and three filaria clinics were established in 1976. The survey unit will carry out filariasis survey in the unsurveyed areas of the State to ascertain the present extent of the problem and to delimit the endemic areas. Filaria Units conduct night clinics for screening the population for Micro-filaria and

give treatment for micro-filaria carriers.

In addition to the National Filaria Control Programme, the local bodies are also in-charge of Anti-filaria and Anti-malaria schemes. A portion of their expenditure is met by the State Government as grant. 169 Local Bodies are carrying out such schemes.

Malaria.—Our State is implementing the National Malaria Eradication Programme from 1958-59. Out of 31.45 Units established in the State 28.40 units entered into maintenance phase and the remaining 3.05 units continue in the consolidation phase. By their intensive action these units helped to effectively control the incidence of malaria over most of the State. But during the last two years there has been an increase in the incidence o Malaria. During the year 1976-77, 98,749 Malaria positive cases were recorded.

Urban Malaria Control.—Five Towns/Cities, *viz.*, Madras City, Salem, Rasipuram, Tuticorin and Elampillai were included under the Centrally Sponsored Urban Malaria Scheme since 1972. Two more towns *viz.*, Vellore and Erode, are to be taken up under this scheme during the year 1977-78. The following measures were adopted for Rural Malaria Control :—

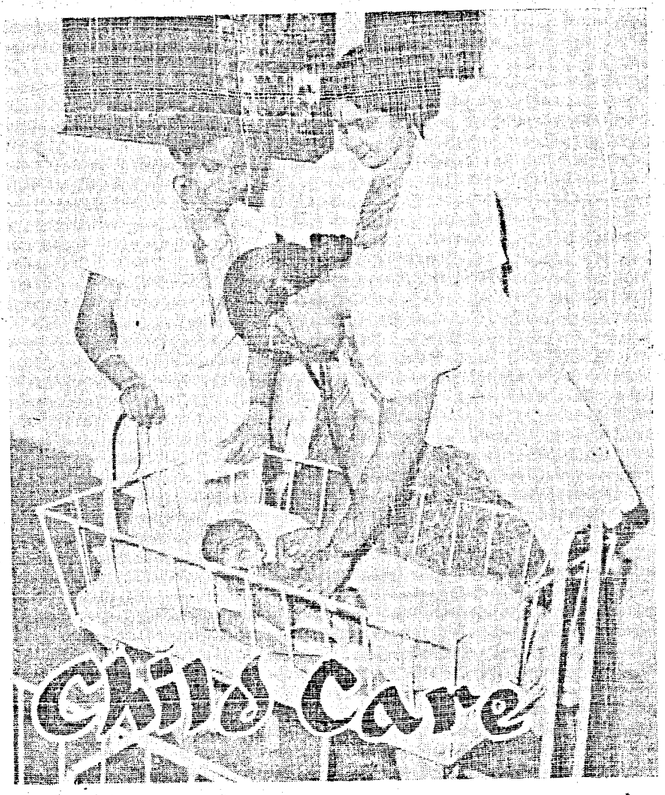
1. Two rounds of spraying with D.D.T. are given in the problem areas ;

2. Active and passive surveillance is intensified in the problem areas and the positive cases detected were given radical treatment with drugs ;

3. Larval control measures are carried out in Coastal Ramanathapuram, Dharmapuri and North Arcot areas to supplement D.D.T. spraying in an effort to reduce malaria incidence

4. An entomological team has been sanctioned for carrying out field studies regarding the problem of rural malaria.

The modified plan of operation under National Malaria Eradication Programme has been implemented in the State with effect from 1st April, 1977. The object of the modified plan is to reduce and to eliminate morbidity and mortality due to malaria through anti-malaria measures. The Government of India have been requested to sanction



Modern Bread distributed to children

additional financial assistance to implement the scheme. The incidence of Malaria is reviewed by a High Level Committee once in three months. As a result of the concerted measures, the incidence of malaria is on the decline. For the first half of 1977, *i.e.*, upto 30th June, 1977, only 34,678 cases of malaria have been reported with no deaths.

Yaws. — Yaws is a highly contagious, non-venereal treponemal disease. This disease is found to be prevalent widely among the socio-economically backward people. Six Yaws Units are functioning in the State. During 1976-77, 1,330 villages were surveyed, 330 cases were recorded and 122 cases were treated.

Guineaworm. — This disease easily spreads where people depend only on a few step wells or ponds for their needs of water. To combat this disease, the "Guineaworm Eradication Programme" has been functioning in all the districts except Kanniyakumari and the Nilgiri Districts.

Kala Azar. — The main task is to survey the endemic portion of Ramanathapuram and Tirunelveli districts for Kala Azar cases and collection of sandflies to determine the prevalence and density of vector species. The affected Kala Azar patients are directed to the nearest Government Hospitals or to the Primary Health Centres for treatment. During 1976-77, 2,119 villages were surveyed and 3,388 sandflies were collected. 20 cases were detected.

SCHOOL HEALTH

A scheme of School Health Services was started in 1965. At present the scheme is being implemented in 48 Primary Health Centres and five municipalities. In the rural areas the medical check up is done for 2,000 school children per annum, while in the urban areas the target fixed is 10,000 school children per annum. The students showing signs of ill health are treated and given diet supplements. The cases which require specialised treatment are referred to nearby hospitals for special treatment. During the year 1976-77, 1,20,480 school children were examined in all. The programme is proposed to be extended to five more Primary Health Centres during 1977-78.

PREVENTION OF FOOD ADULTERATION

At present, the Act covers all the Municipalities as well as some of the panchayat unions, panchayats and townships. Totally, 335 local bodies are being covered. The following Laboratories undertake analysis of the samples taken under the Act :—

(1) Food Analysis Laboratory of the Corporation of Madras.

(2) Food Analysis Laboratory at the King Institute, Guindy.

(3) Food Analysis Laboratory at Coimbatore.

During 1976-77, a total of 21,777 food samples were analysed, out of which 5,432 samples representing 24.9 per cent were found adulterated. The amount of fines imposed amounted to Rs. 12.61 lakhs. Towards expanding the laboratory services, four more laboratories have been sanctioned, one each at Madurai, Thanjavur, Salem and Palayamkottai. Out of them, two laboratories at Madurai and Thanjavur have been constructed and they are taking samples. The construction of the remaining two laboratories is under progress.

HEALTH EDUCATION

Health Education of the people is recognised as an important activity of the department. Without people's active support, a longlasting and worthwhile solutions to our health problems are difficult to achieve. The objectives of the Health Education Bureau is:

(1) to help people to achieve better standards of health through their own action and efforts ;

(2) to help people understand their health problems and take up the responsibility to solve them ;

(3) to enlist people's active participation and support for the health policies and programmes ; and

(4) to train health and family welfare personnel in methods and techniques of Health Education.

The study unit takes up selected problems for identifying the various aspects of health problems mainly with reference to the level of health knowledge, attitude and practices of people and then plan the methods and techniques for providing information and new ideas to people which will motivate them to action to adopt the desired New Health Practices.

During the year 1976, a study on "The Primary Health Centre Staff Role Preception" was completed. Plans are afoot to take up a study relating to the social aspects of sexually transmitted diseases. The unit participated in all the other regular activities of the Health Education Bureau.

The Field Study Demonstration Centre is to develop field practice areas whenever various health education activities can be demonstrated to trainees who are given training (pre-service and in service) in Health Education. This unit has developed the Velachery Primary Health Centre into a health education demonstration area.

The Media Unit prepares, acquires, stores and distributes, various health education aids like films, filmstrips, slides, posters, booklets, folders, etc. It also takes part in the training of Health personnel in the preparation of health education aids.

During the year 1976-77 the press attached to the Media Division brought out 117 publications. The film library of the Media Division sent 1,030 films to various Government and voluntary organisations for screening to the public educational institutions, hospitals, etc. The unit conducted 139 film shows throughout the State. The Puppetry Unit of the Media Division arranged 52 puppet shows on nutrition, cholera control, small-pox, vaccination, malaria, etc. The Mobile Exhibition Unit was deputed for organising health exhibitions in and around the City. 20 Major and minor exhibitions were conducted. Five film strips were produced on health subjects. All the staff of the Media Unit were fully engaged in conducting publicity work in the flood affected areas.

INSTITUTE OF PUBLIC HEALTH, POONAMALLEE

(*a*) **Health Unit, Poonamallee.**—In this Health Unit all Public Health Programmes were continued during the period 1976-77. The study of incidence of Anaemia in Pregnancy and V.D.R.L. tests were continued. Special attention was paid for the improvement of infant cards and child health and weight cards. During this period, the small-pox active search programmes have been carried out three times in this unit. All Public Health staff have been utilised to carry out the programme successfully. By conducting the search programmes, the public have also been benefitted. Usual training programmes were carried out for the medical and paramedical personnel.

(*b*) **Orientation Training Centre, Poonamallee**—During the year 1976-77, five training programmes were conducted consisting of 32 medical officers, 16 Health Inspectors and 18 Health Visitors. The training included field trips also. The trainees were taken to various institutions as a part of the training programme. A short term training course for Health Officers was conducted in four batches and eighteen Health Officers attended the training. Apart from the above two trainings the medical students and the students from National School of Social Work were also given training.

(*c*) **Research-cum-Action Project.**—The spade work for this year's conversion programme 1976-77 commenced in October. As an initial step the Health Inspectors were asked to survey the houses as to the suitability of sites for installation of the RCAP latrines and where the sites were found suitable, action was initiated for conversion or construction of a latrine as the case may be. The areas, selected for this programme are Alandur, Pallavaram, Chrompet, Tambaram and Trivellore. In toto in all these stations 7,727 houses were surveyed out of which 3,256 houses have dry latrines. As per this year's scheme new constructions are also permitted and hence 728 new houses were visited and deatiled health education was imparted. The construction work is under progress.

The nutrition programme at Valarpuram, which is an action research programme for 5 years, is a second field of operation in the research field. During the period ending December and the commencement of this year, continued attempts were made to use nutritive positive deviants to identify approaches for modification of dietary practices—

(*a*) Ascertaining in depth their food practices, storage, preparation and consumption and suggest improved practices within their income, based on the locally available resources ;

(*b*) Emphasize the importance of a balanced diet ;

(*c*) The diet has been introduced for those most in need, based on the socio economic conditions and state of malnutrition ;

(*d*) Experiments are under way to correlate the children nutritional data with the fertility history of the mother to indicate that the health of the young child is an index to the family.

Food habits of a sample of the population are being studied in respect to their storage, preparation and family eating pattern. 50 students belonging to the N.S.S. Unit of the S.I.E.T. College were posted here for 10 days to be trained in various public health activities and their services were fully utilised.

ADVANCEMENT OF NUTRITION

(1) The Supplementary Feeding Programme in the State is being implemented with the assistance of CARE Organisation from 1970. The object of the programme is to combat mal-nutrition among pre-school children and expectant and nursing mothers who constitute, the major segment of the vulnerable group of population. The CARE Organisation donates the required quantities of food commodities such as Corn, Soy Milk, Salad Oil and Balahar. The gift food commodities are distributed to the needy through 3,052 feeding centres. About 1,10,000 beneficiaries are covered daily under this programme. Fifty-five lakh pounds of gift food articles were received during the year 1976-77.

The programme will be continued in the coming year also.

(2) Improvement of the Nutritional status of our people is recognised as one of the most important health promotion measures. Towards this nutrition, education to mothers and children are given in maternity and Child Health Centres, Primary Health Centres and in schools. The State Nutrition Bureau evolves many cheap but nutritious recipe and popularises them through demonstration. Base line Nutrition and diet surveys were conducted in 21 Applied Nutrition Programme blocks and in Tondiarpet Housing Colony attached to Madras Port Trust. The survey covered pre-school children and pregnant and lactating mothers. The programme will be continued in 1977-78 also. Investigations into the cause of Angular stomatitis (Riboflavin defi-

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SMALL SAVINGS RECORD

TAMIL Nadu has exceeded the Small Savings target for 1976-77 by about 35 per cent. Net collections during the year came to Rs. 32.88 crores, as against the targetted Rs. 24 crores.

For the current year a target of Rs. 37·25 crores has been set. It is planned to enlist two lakh more members to the Pay Roll Savings Scheme, which now covers nine lakh employees—government servants and factory workers. **

ciency) among children and young adults were conducted at Muthupet in Thanjavur district and Porur in Chengalpattu district. Haemoglobin and Vitamin A deficiency examinations among pre-school children, Ante-natal mothers and post-natal mothers were also conducted.

Bacteriological and Bio-chemical laboratories have been established to undertake scientific research and analytical works. The laboratory has also proposed to undertake a study on the isolation and identification of vibbie parahaemolytions. An integrated child development service scheme has been put into operation in three places (1) Madras City, (2) Thalli Block of Dharmapuri district and (3) Nilakottai of Madurai district. The services include health check up, immunisation against tetanus to expectant mothers, supplementary diet and nutrition education. The staff of the Nutrition Bureau are conducting Diet and Nutrition Surveys among the Hill Tribes of Kalrayan Hills as a part of Tribal Development Scheme.

A scheme for the prevention and control of blindness among children has been implemented in one block in each district where the applied nutrition programme is not in operation.

The scheme is being implemented in co-ordination with the Director of Social Welfare and the Director, Institute of Child Health, Women and Children Hospital, Madras.

RURAL HEALTH SCHEME

The Government of India have proposed the Community Health Worker Programme for the delivery of health services for rural population. They are expected to render treatment for minor ailments, preventive services, health education and first aid. They form a link between the community and the Health Service Organisation. There will be 30,000 Community Health Workers for Tamil Nadu at the rate of one per 1,000 population.

The Tamil Nadu Government have proposed an alternative scheme in view of the high education level of the people and the presence of well-developed net work of roads to strengthening of 2 mobile teams for the delivery of health services for the rural areas in each block by the professionally qualified doctors.

HEALTH EDUCATION PROJECT (UNICEF AIDED), TIRUNELVELI DISTRICT

The project intends to involve the people in the Health Education to achieve better results. This new project, intends to transmit health education to the masses through Village Health Volunteers selected from among the villagers themselves and these persons will be duly motivated and trained and provided with the necessary communication support. With this the people will become health conscious and the existing health services will be fully utilised.

The objectives of the project are as follows :—

(1) To give communication support to all the Health Services in the District.

(2) To organise the communication support in such a way that it meets the special health needs and problems of the District.

(3) To create an awareness among villagers about how to protect and improve their health by their own efforts without relying on help from outside agency.

(4) To disseminate information about the various health services available in the district.

(5) To develop a programme which can serve as a model for adoption in other Districts.

A Block Level Health Education Committee is formed with the Block Development Officer as Chairman and the Medical Officer, Primary Health Centre as Secretary. Similarly a District Level Health Education Committee is formed with the Collector as Chairman and the District Health Officer as Secretary and the various district officers as members.

The Committee meets once in three months and various ongoing health programmes are discussed, the Educational opportunities identified and suggestions of the various departmental heads are obtained in the implementation of the programme.

The Health Education Project (Aided by UNICEF) is at present confined to Malaria Eradication, Water Supply and environmental Sanitation and Immunisation of the children.

Nanguneri Block (Tirunelveli district) has been selected for pilot studies and on the experience gained, it will be extended to other blocks. Already 28 Health Volunteers, one for each main village in the block have been selected. The peripheral Health workers of the Health Department and the Panchayat Union have made the choice in the selection of volunteers in such a way that these volunteers are acceptable to the people in the village.

Visual Aids .—It is planned to produce visual aids with the help of the health workers and village volunteers for use of the field staff when they talk to the villagers.

Monitoring and Evaluation.—It is proposed to monitor and evaluate the programme using an independent evaluation agency. The evaluation will be done in the following aspects :—

(1) Assessment of the viability of the Village Health Worker with respect of acceptance of the community as well as their sustained interest in the scheme.

(2) Assessment of effectiveness of the communication support strategy employed.

(3) Assessment of effectiveness of the training given to volunteers.

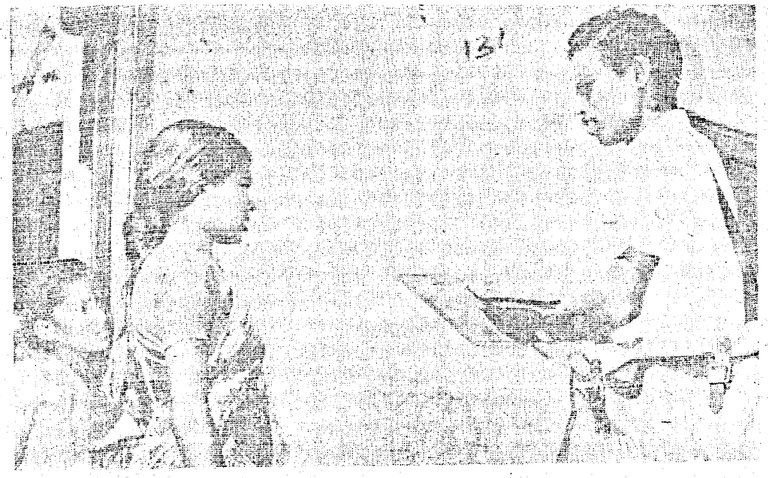
(4) Feed back for course corrections and improvements.

(5) Improvement of the existing reporting system.

(6) Replicability of the projects, including a careful assessment of the special conditions if any, obtaining in these pilot projects.

(7) Overall impact of the projects on the awareness, attitude and practices related to the project objectives.

It is now proposed to train village health workers in the treatment of minor ailments to recognise nutrition deficiencies in mothers and children, to follow up cases of anaemia, T.B., leprosy, malaria and distribution of drugs, to identify communicable diseases and prompt notification to health centre.



Village Health volunteer educating the people in cleanliness

ENVIRONMENTAL HYGIENE

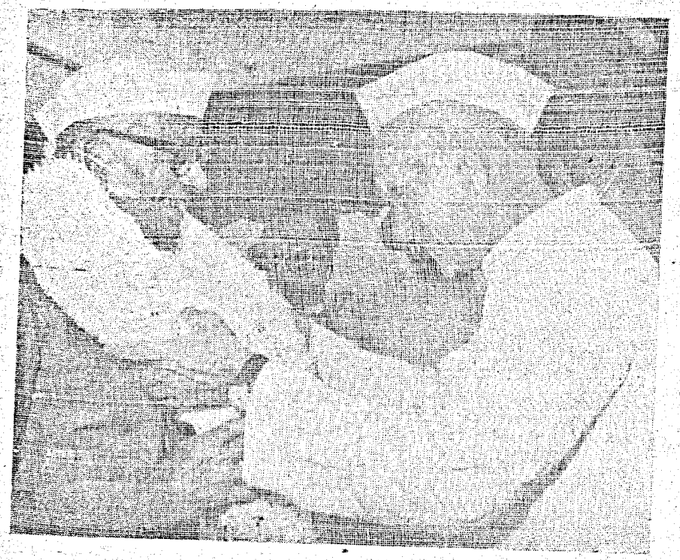
Pollution of water, air and land due to rapid industrialisation and consequent urbanisation has caused great concern. Being aware of the seriousness of the problem, Government of Tamil Nadu formed the Department of Environmental Hygiene during 1972 to undertake a systematic study of problems of pollution of water, air and land due to industrial wastes, use of pesticides and chemicals, human negligence, etc.

The Department investigates problems of pollution in the State referred to by Government and others and suggests action to be taken to abate such pollution. The Department keeps record of industries in the State to assess the pollution lead, by collecting particulars such as raw materials used, process, products manufactured, quantity of water used and wastes produced and anti-pollutional measures adopted, if any. This Department inspects some of the industries, which are potential sources of pollution, study the anti-pollutional measures provided and render necessary advice in pollution control. A sub-committee on city sanitation, with the Special Officer (Environmental Hygiene) as the convener considered the problems of insanitary conditions prevailing in the slums, stray cattle nuisance, indiscriminate felling of trees, noise pollution, etc., in Madras City and a report has been submitted to Government to improve the environment of the city.

Prompted by the growing menace of the problems of water pollution, Government of India have passed the Water (Prevention and Control Pollution) Act, 1974 and formed the Central Board for Prevention and Control of Water Pollution. Many States have given consent to this Act and formed the State Boards for Prevention and Control of Water Pollution. Our State is yet to give consent to this Act. A State Bill for Prevention and Control of Water Pollution has also been prepared and is with the State Government. A decision is to be taken by the Legislature whether to give consent to the Central Act or enact a separate State Bill and then the State Board for Prevention and Control of Water Pollution is to be constituted.

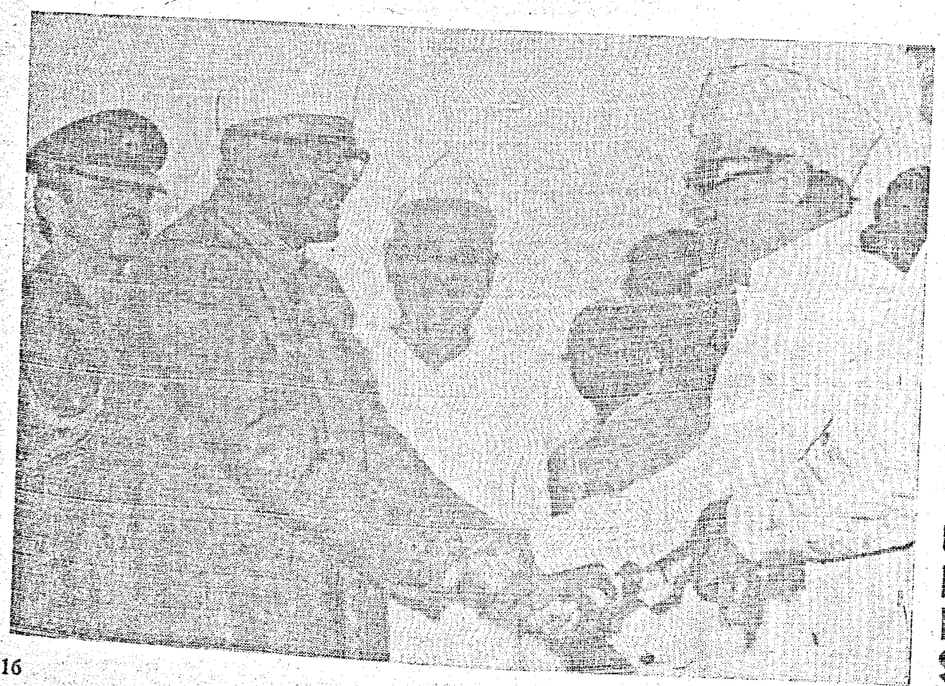
Government have formed during 1976 the Tamil Nadu Environmental Board, an advisory apex body with His Excellency the Governor as the Chairman, to advice the Government in making policies for the environment that fit in with the programmes of development in the State. The Board held four meetings during 1976-77. The Board has approved the guidelines to be followed in issue of clearance to new industries with reference to the protection of the environment. The Special Officer, Environmental Hygiene Department is the Member-Secretary of the Board and the Department of Environmental Hygiene is the servicing Department for the Board. They have also formed sub-committees on (1) Water resources, (2) Housing, Town Planning and Transportation, (3) Health and Publicity, and (4) Industries.

(*Public Health Demand for the year* 1977-78. *was presented by Thiru M.G.R. Chief Minister of Tamil Nadu in the Assembly on* 13*th August*, 1977.)

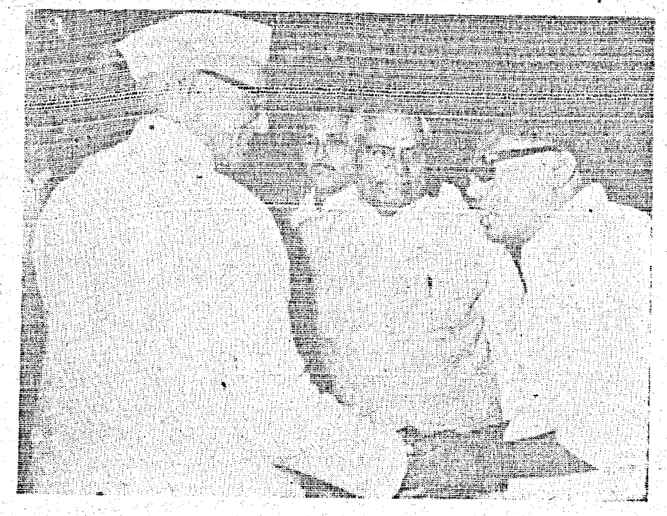


The President of India, Thiru N. Sanjeeva Reddi was received at the airport by the Governor Thiru Prabhudas B Patwari. The Governor is garlanding the President.

The President Thiru N. Sanjeeva Reddi is being greeted warmly by Thiru M. G. Ramachandran, Chief Minister of Tamil Nadu on his arrival at the Meenambakkam airport on 18-8-'77

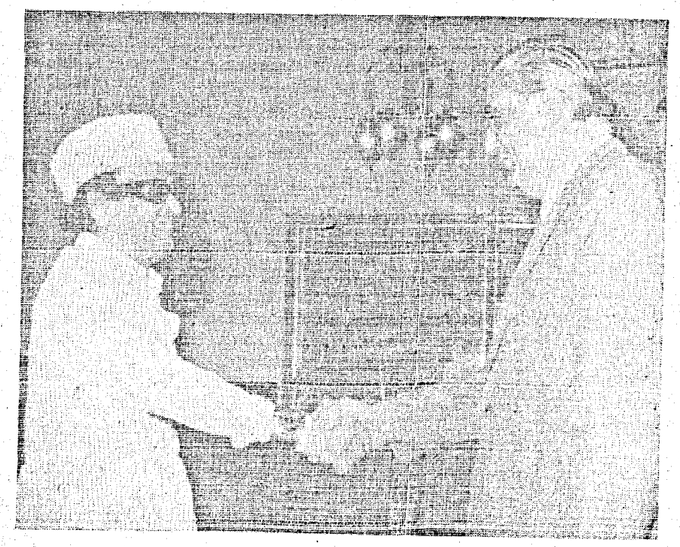


NEWS IN PICTURES



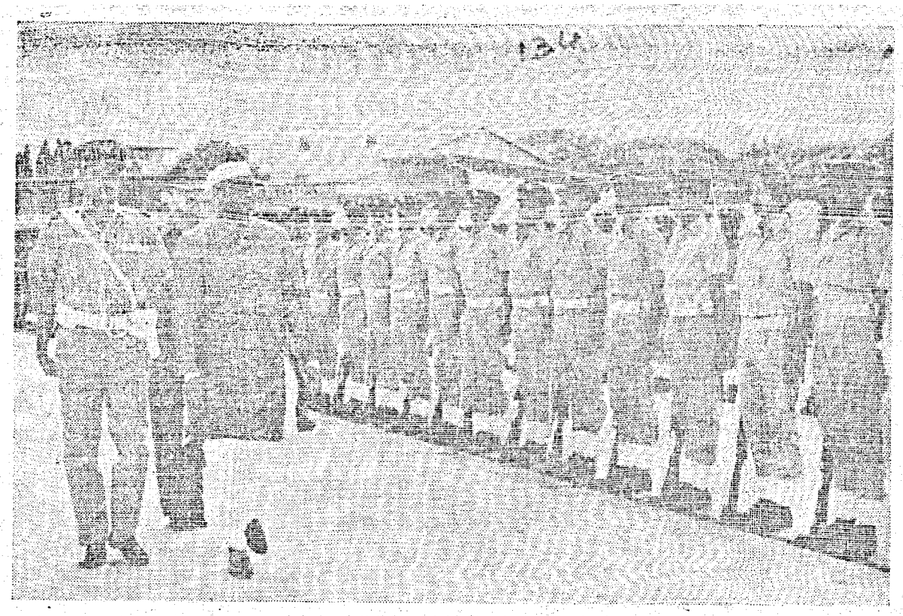
Thiru R. M. Veerappan, *Minister for Information and Tourism greets the* Prime Minister Thiru Morarji Desai *at the State Tourism Ministers' Conference at New Delhi on 31st August* 1977.

Thiru Kurt Loefflar, *Minister of State for Culture, German Democratic Republic, called on the Chief Minister* Thiru M. G. Ramachandran *at his Chambers in the Secretariat on* 31-8-1977



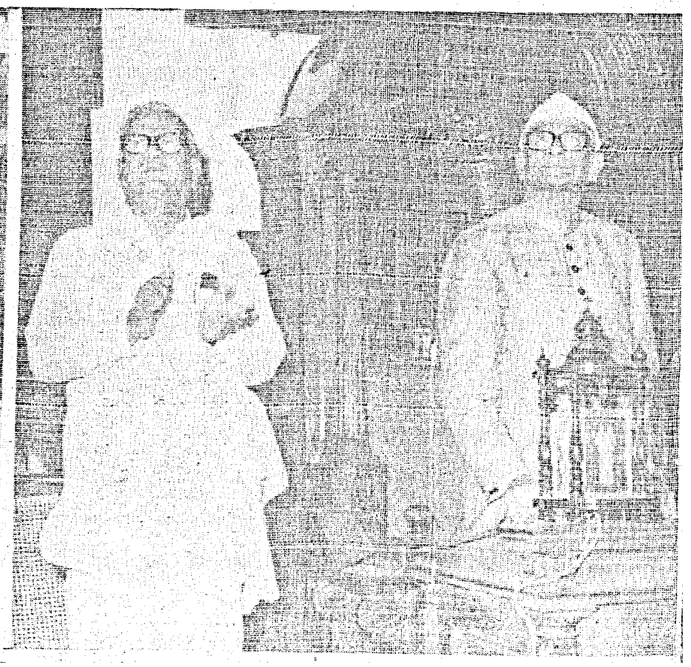
The Consul General of France at Pondicherry **Thiru Rocricciol** *called on the Chief Minister* **Thiru M. G. R.** *at the Secretariat on* 3-9-1977.

The American Consul General at Madras **Thiru Charles W. Mccaskil** *called on the Chief Minister* **Thiru M. G. R.** *at the Secretariat on* 3-9-1977.



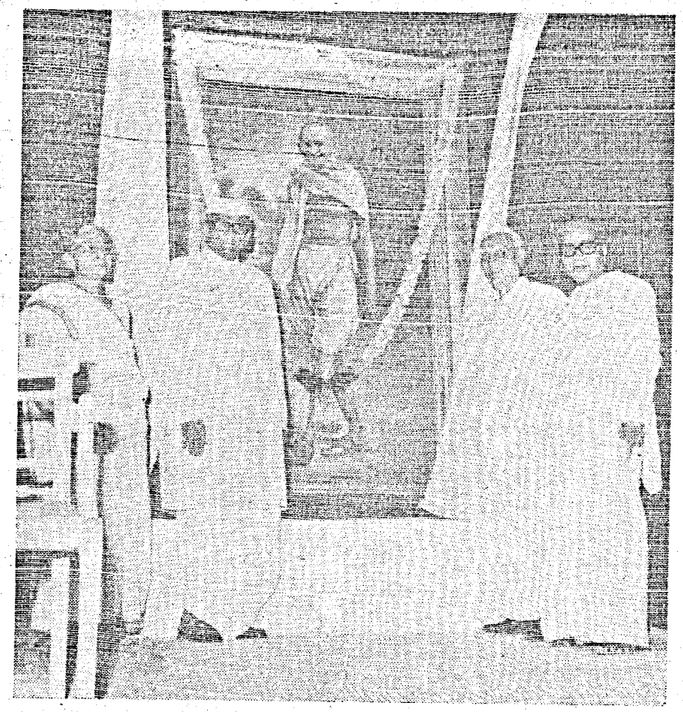
The President Thiru Sanjeeva Reddi inspecting a guard of honour at the airport.

The President Thiru N. Sanceiva Reddi is unveiling a life size portrait of Thiru K. Kamaraj the former Chief Minister of Tamil Nadu on 18-8-'77



The President Thiru N. Sanjeeva Reddi is being presented with the Welcome Address by Thiru Munu Adhi, speaker of the Tamil Nadu Legislative Assembly on 18-8-'77

The President Thiru N. Sanjeeva Reddi is seen planting a sapling at the Raj Bhavan, Guindy.



The President Thiru N. Sanjeeva Reddi, unveiled a life-size portrait of Mahatma Gandhi at the Raj Bhavan, Guindy. Thirumathi Patwari, the Governor Thiru Prabhudas B. Patwari and Thiru P. Ramachandran Union Minister for Energy are also seen in the picture.

Thiru M. G. Ramachandran, Chief Minister of Tamil Nadu received a three member delegation of Parliamentarians from Japan led by Thiru Yoshio-Sakeera-Uchi, M. P. at his chambers, at the Secretariat.

CANCER-CURING POTENTIAL OF NUT

The recent revelation that the marking nut "*Thenkottai Maram*" used generally by washermen has cancer-curing potential has bestirred to activity, reported the World Health Organisation and the Indian Council of Medical Research to explore its efficacy as a drug acceptable by modern standards.

The identification of this anti-cancer material which grows abundantly in the sub-Himalayan tracts and in the forests along the western coast has a great significance to the pharmaceutical industry.

For people in India, particularly those interested in the research on Ayurvedic medicine, the discovery is not anything new, "Semi-carpus anacardium" as it is known in biological term. The marking nut is identified as the product of the biba tree found in the forests in the north. Books on indigenous medicine recommend this as a general tonic and food as the fruit of this tree is both sweet and edible. The seeds are found to contain a small amount of K 40 and the thin outer gritty pericarp is reported to contain anti-cancer material. The pericarp has black corrosive juice which is used as marking ink by washermen and the seeds are eaten like cashew nuts and are known as "*Godhambia*". The oil extract from the nut is used by the Ayurvedic practitioners for treatment of rheumatism and also in treating leprosy modules.

The accidental discovery, however, of some radio-active elements in "semicarpus anacardium" prompted doctors of St. George Hospital, Bombay and of the Cancer Research Institute, Bombay, to probe further into the application of the medicine prepared from the nut in the treatment of cancer with fairly satisfatory results. But further research on this most valuable material has not been undertaken by any research institution in the country so far. Foreign institutions which got samples of this medicine experimented on it to steal a march over U.S. One such institute the National Institute of Health, Bethesoa, Maryland, United States, came out with a finding in July, 1976 that the drug did act well against certain types of tumours and cancerous growth.

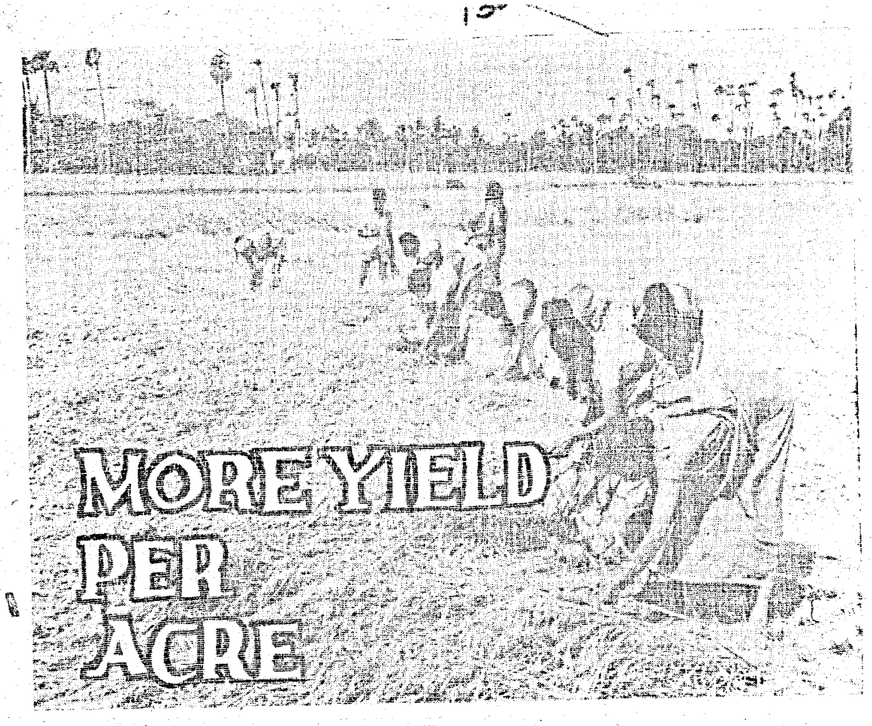
Efficacy of Drug :

The recent conference of radiologists in the southern region held in Coimbatore discussed the efficacy of "Anacarcin" (a drug prepared from the marking nut) in the treatment of cancer. A number of radiologists while narrating their experiences confirmed that the drug did provide relief in patients effected by 'carcinoma' in the stomach, liver, lung, colon and ovary. The doctors said they used the drug mainly in three forms as jam, oil and injections.

The Kottayam Medical College, used this drug only in very advanced malignancies and hence the assessment of the efficacy of the drug could not be proper. However, there were indications that more active and controlled studies in this line were called for particularly in view of the act that both ayurveda and homeopathy recommended this treatment backed by long years of experience.

The Valavadi Narayanaswamy Cancer Institute, Coimbatore used this drug in the form of jam. It was administered in 150 cases of different types of cancers along with usual methods of treatment and all the patients expressed a sense of well-being. The patients put on weight and showed good signs of recovery. 35 patients with the advanced stage of cancer in the gullet unable to swallow their own saliva were treated with "Anacarcin" jam along with the standard radiation treatment and chemotherapy. The observation of patients undergoing treatment with "Anacarcin", showed that besides experiencing a sense of wellbeing the blood counts of the patients were kept up, their disease was controlled to some extent and all of them got relief for a varying period of time.

Courtesy: "THE HINDU"



During the year 1976-77 the normal cropping pattern in some parts of the State was completely thrown out of gear by the unprecedented failure of the southwest monsoon in the catchment areas of the river valley systems. The erratic monsoon conditions besides adversely affecting the paddy cultivation in the river valleys delayed sowing of the dryland crops in many districts. Due to the failure of the monsoon in the catchment areas the first crop of paddy which normally produces high yields could not be raised in about 7.00 lakh acres The Cauvery irrigation system was thrown open for cultivation, only on 24th July 1976 after a delay of nearly 40 days.

Because of poor storage and meagre inflow positions, water could not be released for the Grand Anaicut Canal area in Thanjavur District. Turn System for irrigation was introduced in Cauvery basin from the very beginning and farmers were advised not to go in for Thaladi crop of paddy. The southern districts of Tirunelveli, Ramanathapuram and parts of other Districts also suffered under the grip of drought till the north west monsoon gave a certain amount of relief. The receipt of widespread rains during the northwest monsoon, however, improved the overall crop prospect.

THIRU P. KOLANDAIVELU

Minister for Agriculture

Achievement of 1976-77

The year was one of Challenge to the Farmer, and the department of Agriculture. Production programmes and cropping systems had to be modified from time to time to suit the changing seasonal conditions. Some of the noteworthy achievements of this year of challenge are :

Alternate Cropping Strategy.—Contingency plans were formulated and the farmers were enthused to adopt alternate cropping programmes in the different river valley systems. The formulation of alternate cropping strategy, the intensive publicity given by the field staff and the wide adoption of new crop patterns by the farmers served in a large measure to reduce crop losses arising out of the failure of the southwest monsoon. In the river valley systems affected, the traditional rice crop was substituted by light duty crops such as millets, pulse, etc., in large areas. For the first time in recent broadcasting of paddy was advocated in the Grand Anaicut Canal area and about 2.10 lakh acres which would otherwise have remained barren, were cultivated with dry paddy.

Break through in millet production.—Despite the adverse seasonal conditions during the year 1976-77 it was possible to register a substantial increase of more than one lakh tonnes in millet production, due to large scale introduction of high yielding varieties, double cropping practices, and Improved agronomy in the dry lands.

Rabi Summer Programme.—Utilising the good rains received during the latter half of the North-

east monsoon period a special summer programme was launched during this summer to mitigate the crop losses sustained during the earlier part of the year. As a result 2.80 lakhs hectares of paddy, 2 lakh hectares of millets and 2.46 lakh hectares of groundnut and 3.91 lakh hectares of pulses were raised in the summer.

Drought Relief and Minor Irrigation Works.—Several Soil Conservation and Minor Irrigation schemes were taken up to relieve and mitigate the problems caused by the drought of last year in State. Soil conservation measures were undertaken in 4,32,110 hectares, and 258 percolation ponds were constructed. To tap underground water and use it productively 8,927 tube wells and filterpoints were sunk. In Rajapalayam Taluk of Ramanathapuram District 2,572 acres cast with sand by heavy winds were reclaimed within 45 days by the department. Dryland farmers in the drought prone area of the southern districts were supplied with 1,000 locally made mechanical seed drills. The seed drills were useful for the farmers for swiftly completing dryland sowings in large extents to take maximum advantage of the available moisture.

International Development Association Programme.—Under International Development Association Programme, 1,509 tractors were supplied to the farmers on long-term loan to step up food production through effective farm mechanisation.

Association of Teachers in Plant Protection Measures.—Training in identification of pests and diseases in plants was imparted to 11,700 village school teachers in 1976-77 for the first time. The training was designed to impart knowledge of plant protection to teachers who enjoy good social standing among farmers so that they could serve as a liaison between the extension workers and the farmers in pest warning and for pest control work.

Reorganisation.—Steps were taken to streamline the Agricultural Extension set up and to make each district a self contained unit with a leader supported by a team of subject matter specialists. Through suitable redeployment of personnel a separate office of Deputy Director of Agriculture was established in each of the districts of Slaem, North Arcot, South Arcot and Ramanathapuram to attend exclusively to the Programme.

Research Activities.—During 1976-77, 21 high yielding strains of paddy and millets were identified and released for large scale cultivation. Crop response studies for formulating optimum fertilizer recommendations were undertaken on a large scale. Studies on the utility of blue green algae, Azolla, zinc sulphate for paddy were also conducted. The Agro-climatic condition of Kanyakumari district is slightly different from the other parts of the State. To tackle the soil acidity problems afflicting this area and to evolve varieties and crop patterns suitable to the peculiar agro-climatic conditions of the district, a research centre was established at Tirupathisaram. As a result of all these activities and hard work of our farmers, our estimate of achievement during 1976-77 are as follows, inspite of adverse seasonal conditions—

Paddy	..	53.000 lakh Tonnes
Millets	..	18.00 lakh Tonnes
Pulses	..	2.90 lakh Tonnes
Oilseeds	..	13.43 lakh Tonnes
Sugarcane (Gur)	..	13.50 lakh Tonnes
Cotton (Bales)	..	3.60 lakh Bales

The crop production goals programmed for the year 1977-78 are :

Rice	..	62.00 lakh Tonnes
Millets	..	19.00 lakh Tonnes
Pulses	..	3.00 lakh Tonnes
Oilseeds	..	14.90 lakh Tonnes
Sugarcane (Gur)	..	14.00 lakh Tonnes
Cotton	..	4.00 lakh Bales

The details of strategy proposed to be adopted for achieving the production levels programmed are :

Paddy

It is programmed to cover 2.200 lakh hectares under high yielding varieties with accent on large scale use of IR derivatives for increased yields. Special efforts will be taken to extend the area under varieties like ADT 31, TKM 8 and to popularise use of high yielding varieties in the main Samba season and also in semi dry tracts of Chingleput, Ramanathapuram, Pudukkottai and Kanyakumari Districts. The newly released variety Co. 40 eminently suited for Samba in the Cauvery delta will be taken up for extensive multiplication in Thanjavur District. NLR 9672 a fine grained variety of Andhra Pradesh would be tried in Samba season to confirm its suitability for large scale cultivation during this season. Agriculture Department has taken all steps to distribute 9,500 Tonnes of certified seeds of improved varieties to farmers during the year to support the programme.

Millets

The Department has programmed to distribute the following quantities of millet seeds to popularise high yielding varieties to cover 1.2 lakh hectares of Cholam, 1.8 lakh hectares of Cumbu, 1.4 lakh hectares of Ragi, and 0.70 lakh hectares of Maize. Varieties like IS 3541, K. Tall, CSH. 1, CSH. 3, KM. 1, KM 2, are becoming very popular among our farmers in the dry tracts. Steps will be taken to achieve a large coverage in the dry lands. Agronomic measures designed to get the maximum return from the high yielding varieties will also be popularised. The Department of Agriculture will distribute the following quantities of seeds to farmers for millet production.

Cumbu	..	150 Tonnes
Cholam	..	400 Tonnes
Ragi	..	175 Tonnes
Maize	..	315 Tonnes
		1,040 Tonnes

Pulses

The area under pulses will be stepped up from 9.70 lakhs to 10.40 lakhs hectares by bringing additional areas in rice fallows and also under mixed cropping, growing of pulses as a mixed crop in Groundnut, cotton, etc., will be intensified. In addition to prophylactic plant protection measures, use of phosphatic fertilizers and Rhizobiaculture will be taken up for increasing production of pulses. The Department aims to distribute 1,600 tonnes of good quality pulses, seeds to the farmers.

Oilseeds

Special steps will be taken to step up the production and productivity of oilseeds like Groundnut, Gingelly, Coconut and Sunflower. Groundnut will be a crop which will receive intensive attention both by way of area extension during irrigated season and adoption of improved agronomical practices during rainfed season. It is proposed to increase the area under groundnut by about 15,000 hectares and achieve a coverage of 11.00 lakh hectares. In addition to popularising the use of fertilizers for rainfed groundnut, use of micro-nutrients, a new finding of the Department and gypsum would be taken up to cover one lakh acres each. 1,08,000 bags of groundnut seeds will be distributed by the Department.

An additional area of 25,000 hectares will be brought under Sunflower and a total coverage of 1.75 lakh hectares will be attempted. 900 tonnes of Sunflower seeds will be distributed in select pockets to support agro-based industries.

Cotton

Our efforts are directed towards increasing the area under irrigated and rainfed cotton by 7,000 hectares and 2,00,000 hectares respectively. The variety "Varalaxmi" would be extended to cover an area of 1,20,00 hectares. Distribution of improved seeds will be intensified and 1,750 tonnes of seeds will be made available through the Panchayat Union Depots. One more Intensive Cotton Development Programme unit will be established in Ramanathapuram District with the assistance of Government of India. A scheme designed to produce 25 tonnes of Varalaxmi seeds in our State is proposed to be undertaken during the current year.

Sugarcane

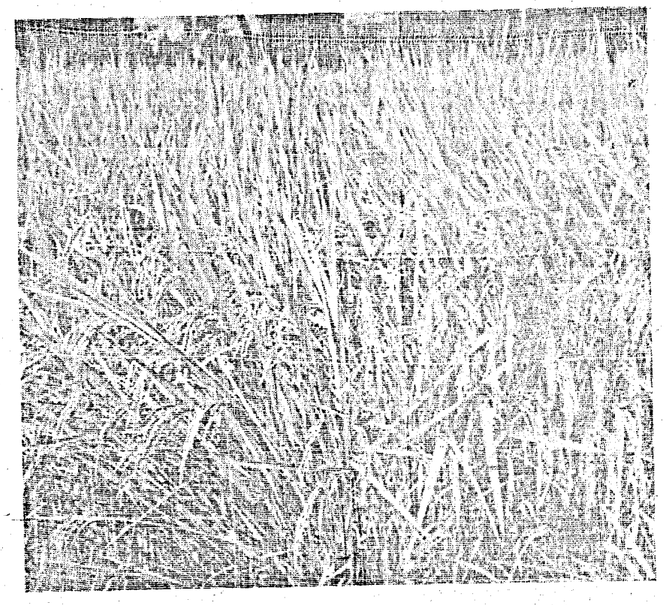
(*i*) The programme is to step up the area by bringing an additional extent of 9,000 hectares in the factory zones of Thanjavur, Perambalur and Palacode. The use of high yielding varieties will be popularised and seed materials to cover 24,000 hectares will be distributed.

(*ii*) *Sugarcane Road Development Scheme.*—The object of the Sugarcane Road Development Scheme is to form new roads and to improve the existing roads in sugar factory areas for easy transportation of cane to sugar factories.

For 1977-78, a sum of Rs. 105 lakhs has been provided, *viz.*, Rs. 85 lakhs for improvement and formation of new roads, Rs. 15 lakhs for maintenance of old roads already formed under Sugarcane Road Development Scheme in sugar factory areas and Rs. 5 lakhs for the formation of link roads in sugar factory areas under Centrally, Sponsored Scheme.

Input Activities

Seeds and Seedlings.—To make available good quality seeds and seedlings, the Department has established 49 State Seed Farms for production of paddy, millets and pulses seeds. Groundnut production is taken up in four zonal farms, Coconut seedlings in 24 nurseries and fruit plants and vegetables in 19 Model Orchards and other farms. All these will be run as model farms on commercial lines. About 12 lakhs of Tall coconut seedlings and 25,000 TXD seedlings and 7 lakhs fruit seedlings will be produced in these farms and distributed during the current year. 48 M.T. of vegetable seeds will be distributed. Besides the Government farms, 5 Seed Centres with a processing capacity of 8,000 tonnes have also been established. The endeavour of the Department will be to produce better quality certified seeds and make them available in time to the farmers. Training for the farmers interested in Hybrid seed production will be provided in "Anna Pannai" located at Kudumianmalai in Pudukkottai District. To ensure availability of large quantities of certified seeds the certifica-



A new variety of Paddy

Vegetables

It is proposed to intensify the vegetable production programme and achieve a production level of 6.88 lakhs tonnes of vegetables from a total area of 50,000 hectares. Vegetable cultivation in the Kitchen gardens in the City area and also in the major towns of the State will be intensified.

tion wing of the Department will be adequately strengthened.

Fertilizers.—Any programme for stepping up production through varietal changes should take into account the need for increased and balanced use of fertilizers. Keeping this in view, the promotional activities have been streamlined to achieve a consumption level of 2.75 lakhs tonnes of Nitrogen, 0.70 lakh tonnes of Phosphorus and 0.70 lakh tonnes of Potash during 1977-78. Necessary arrangements for securing the required quantity of fertilizers for the State have already been completed and the fertilizers will be made available in time through the network of 12,000 private and co-operative retail outlets. Simultaneously intensive propaganda will be launched to popularise effective balanced use of fertilizers, quality control of fertilizers will be effectively enforced by the special staff meant for this and by the three laboratories set up for quality control.

Demonstrations on multiplication and use of blue green algae, a useful natural source for Nitrogen, will also be undertaken on a large scale in order to enable the farmers to produce this locally.

Plant Protection.—Adequate stocks of Plant Protection chemicals are available and plant protection equipments are kept ready for use at short notice. During the current year 1,000 new power sprayers will be purchased and made available to the farmers at a nominal rental basis. About 60,000 hectares of Paddy and Groundnut will be treated with ground spraying against endemic pests and diseases like Stem-borer, and Red Hairy Caterpillar. To check Brown plant Hopper, 20,000 hectares will be sprayed with chemicals at nominal cost. Pest survillance system will be streamlined and timely pest warning bulletin will continue to be issued through All India Radio. The services of teachers trained in identification of pests and diseases in plants will be utilised to keep people informed of pests and diseases likely to occur in an area in advance.

Horticulture

Model Orchard-cum-Nurseries.—With the objective to cater to the needs of the fruit growers and the general public in respect of their requirements of quality and pedigree planting materials of horticultural crops and to establish visual demonstration centres for scnetific cultivation, nine Orchard-cum-Nurseries are functioning in this State in the places mentioned below :—

Attur ..	..Chingleput Dist.
Kodapattu	..North Arcot Dist.
Marungulam	..Thanjavur Dist.
Kodaikanal	..Madurai Dist.
Poovanni	..Ramanathapuram Dist
Courtallam	..Tirunelveli Dist
Periakulam	..Madurai Dist.
Thimma-puram..	..Dharmapuri Dist.
Coonoor..	..The Nilgiris Dist.

One more Orchard-cum-Nursery will be established in South Arcot District.

Apart from model Orchard-cum-Nurseries, a Scheme for the production and expansion of area under 'Kew' variety of pineapple in the district of Madurai, Kanyakumari and Tirunelveli and another scheme for the cultivation of pineapple in North Arcot district are under implementation from the year 1974-75. *A Tropical Fruit Research Institute* has been established at Anna Pannai, Kudumianmalai, Pudukkottai district during the year 1974-75 and it is undertaking intensive researches on various tropical fruits in Tamil Nadu.

Scheme for Development to Horticulture in Hill Area .—The Scheme for the development of horticulture in hill area envisage development of horticulture in the districts of North Arcot, Salem, Tiruchirappalli and Madurai to promote the well being of residents of the hill areas and to ameliorate the condition of the tribal people. Under the scheme, 50 per cent subsidy is allowed on all inputs supplied in the horticulture.

Research activities :

It is proposed to continue investigations on identification of suitable high yielding crop strains with an accent on the specific needs of the dry and semi-dry belts of the State. 31 cultures of Paddy are under various stages of study and this includes three promising paddy varieties for semi-dry cultivation and 4 promising varieties for saline and alkaline lands. The result of the research is likely to be of immense use for the farmers of Kanyakumari, Ramanathapuram, Pudukkottai and Chingleput. Fertilizer recommendation based on the data from the soil test-crop response studies would be formulated for specific areas. The needs of rainfed areas would be given special attention for with experimental studies on dry farming practices and water harvesting techniques are programmed.

Special Programmes—— Hill Area Development Programme.—Programme designed to meet the special needs of the Nilgiris District in the sphere of soil conservation, seed production, improvement of small tea and coffee gardens, etc., will be continued during the year and a total financial provision of Rs. 84.80 lakhs has been made for these activities. In this programme the needs of tribals and Todas have also been taken into account.

Integrated Dry Land Development Projects.—The activities of the Dry Land Development Projects in Operation in Pudukkottai and Kovilpatti will be stepped up. A provision of Rs. 14.16 lakhs has been earmarked for these two pilot projects.

Control of Bunchy Top on Banana.—Severe incidence of bunchy top disease has been noticed in Lower Palnis where hill banana cultivation covers large areas. The State Government has formulated appropriate control measures to check the spread of the disease and rehabilitate banana cultivation in affected areas. Systematic spraying would be intensified to check the incidence of disease and adoption of agronomic practices such as balanced fertiliser use would be recommended to rejuvenate the affected gardens. The entire area of 36,000 acres affected by Bunchy Top disease is proposed to be covered during the current year.

Indo-German Nilgiris Development Project

1. The Indo-German Nilgiris Development Project was inaugurated on 8th January, 1967 with the main objective of achieving a rapid rise in the level of agricultural production in the Nilgiris District.

2. (*a*) The introduction of high yielding varieties of Potatoes vegetables, cereals, fodder, etc.

(*b*) To induce the adoption of package of improved practices by farmers for individual crops through intensive propaganda efforts.

(*c*) The adoption of suitable rotation to diversify the cropping pattern, mainly to break the practice of mono-cropping with potato.

(*d*) strengthening and supporting the marketing facilities to enable the farmers to obtain fair prices.

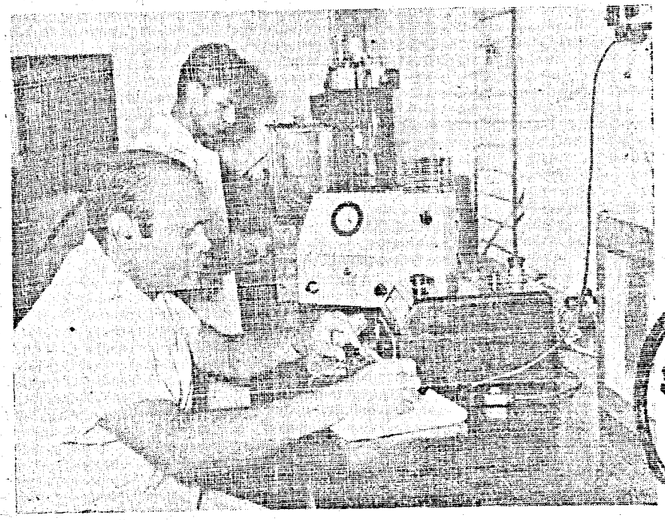
The project is now in its 11th year of its activities.

The crash programme for the control of Golden Nematode was launched in December, 1970. The nematicide was given free of cost for the first three applications and from the fourth application onwards a tapering subsidy of 75 per cent, 50 per cent and 25 per cent over the cost of the nematicide was given to the farmers for the fourth, fifth and sixth applications respectively. This mass scale Nematode control programme ended on 30th June, 1976. Temik, a new nematicide is supplied at 50 per cent subsidy for treating the newly infested areas. Under the above subsidy scheme a quantity of 3.6 tonnes of Temik was supplied to cover an area of 450 acres benefiting 246 farmers.

The Small Farmers Loans Fund constituted under the Project is giving credit facilities to small and poor farmers, to take up vegetable cultivation. During the year 1976-77 credit facilities were extended to 235 farmers to the tune of Rs. 3.80 lakhs.

Potato seed multiplication in farmers holding was done during 1976-77 in an area of 75 hectares in nematode free areas by distributing certified seeds. It has been proposed to introduce new high yielding Blight Resistant Potato varieties during 1977-78.

The Vegetable Development Scheme, a pioneer scheme of the Project plays an important role in the distribution of improved varieties of Vegetable seeds, bringing more area under Vegetable and educating the farmers on the improved methods of cultivation, by conducting demonstrations and adaptive research trials. Under seed distribution programme about 16 tonnes of the High yielding varieties of Vegetable seeds have been distributed to cover an area of about 1,644 hectares during the year 1976-77.



Soil testing conducted in a laboratory

An Association called the Nilgiris Vegetable Growers Association was registered under the Societies Registration Act, 1860, to procure and market the hill vegetables, produced by the farmers of the Nilgiris district. The Association is marketing the vegetables in different marketing centres like Tiruchi, Madras, Mysore, Bombay, Calcutta and Delhi. The Association has a total membership of 1,565 and it distributes seeds to its members as an incentive. It is expected that the Association will increase its turnover during the current year to about Rs. 50 lakhs.

A full fledged Soil Testing Laboratory was established in Ooty. Soil samples collected from individual holdings was taken up to prepare soil fertility map for the District. The soil testing laboratory had analysed 9,200 soil samples and 464 plant samples during 1976-77. During 1977-78, 1,200 M.T. of disease free Potato seeds will be distributed. 19 M.T. of high yielding vegetable seeds will be distributed. Nematode Control will be taken up in 100 hectares. An additional area of 20 hectares under fruits, 120 hectares under Tapioca, 800 hectares under high yeilding varieties of Ginger and 40 hectares under spices will be covered.

Training Programme

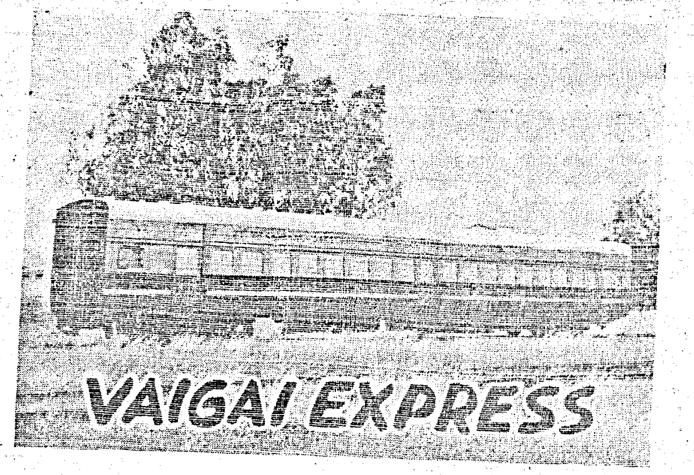
Nine Farmers' Training Centres have already been established in the State for providing training to farm leaders. During the current year two more farmers training centres will be established in Kanyakumari and Dharmapuri Districts.

There are 15 agricultural schools, which are providing training to about 390 youths annually. This activity will be continued.

(1) Marketing and Quality Control

With a view to maximise the income of the farmers through better marketing system the marketing wing of the Department will bestow special attention to popularise Kapas grading and grading of agricultural produce like oil, ghee, etc. Two more Agmark laboratories, 10 commercial grading centres and 15 Regulated Market Yards will be established during 1977-78. Efforts will be taken to grade an additional quantity of 1,29,000 quaintls of cotton kapas in these grading centres. The proposal to establish a separate Directorate of Marketing in this State for the purpose of increasing in agricultural marketing activity is under consideration.

—*Agricultural Demands for the year* **1977—78,** *presented by* **THIRU P. KOLANDAIVELU,** *Minister for Agricultural, in the Tamil Nadu Legislative Assembly on 10th August,* 1977.



The temple city's prestigious train named after the Vaigai river flowing in the city of Madurai has many firsts. It is the first among the "Classless" super fast trains, first super fast inter-City day express on the Southern Railways metre gauge system of the Indian Railways, the first train to cross the speed barrier of 75 Kms. per hour on the Southern Railway metre gauge, first fully reserved train on the Southern Railway metre gauge system and the first train to have upholstered second class seats.

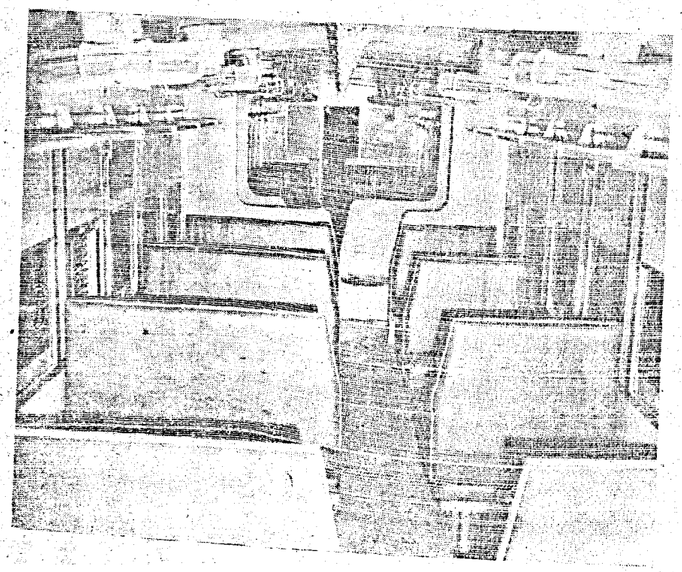
This metre gauge train which runs nearly as fast as the Brindavan Express on the broad gauge will complete its run between Madras and Madurai in about 7.5 hours. This train will stop only in two stations en route *viz.*, Tiruchirapalli and Dindigul.

ICF-built Coaches for Super Fast Trains :

In the recent years, several super-fast trains have been introduced over the Indian Railways marking the significant role of the Railways in serving the travelling public. The different types of coaches needed for these super-fast trains, starting with the Rajdhani Express, have been built at the Integral Coach Factory. These coaches have been suitably furnished to provide maximum comfort to the travelling public.

The Vaigai Express has been introduced from the 15th August, 1977. In keeping with the trend of introducing more and more superfast trains, ICF has undertaken the manufacture, in a record time,

Interior view of the coach



of coaches for the Vaigai Express. The formation is fully vestibuled and the proposed Vaigai Express is expected to run at a speed of approximately 100 kmph. These coaches will provide greater passenger comfort, marking the beginning of a new pattern in second-class travel.

A significant and major breakthrough in travel comforts for second class passengers has been achieved by the provision of upholstered seats. All the seats have been provided with comfortable cushions and these coaches are provided with fluorescent lights, in place of conventional incandescent lamps, for better illumination and the flooring of the coaches has been surface-treated for better appearance and longer life. Power generation is by means of an indigenously-developed, flat-belt-driven brushless alternator of 3 KW capacity. The Vaigai Express rake will consist of six II Class Chair Cars, one Pantry-cum-II Class Chair Car and two II Class Chair-Car-cum-Luggage and Brake Vans.

SECOND CLASS CHAIR CAR

The II Class Chair Car can accommodate 80 passengers and is vestibuled for easy movement of passengers and catering and ticket-checking staff. At one end of the coach is provided a container for drinking water. Two Indian-style and one European Style laboratories are provided, besides longitudinal racks for keeping light luggage, coat hooks in all the bays and ash-trays in the entrance doorways. Porcelain wash basins and better fittings have been provided in the toilets. The flooring of the coaches has been surface-treated for better appearance and longer life.

PANTRY CUM-SECOND CLASS CHAIR CAR

One half of the Pantry Car will contain the pantry portion consisting of the serving counter with show-cases on either side, drinking water facilities etc. The pantry area is equipped with cooking ranges containing hot plates to enable snacks being prepared and served hot. The other half of the coach is provided with second-class accommodation for 40 passengers. One washing room and one lavatory are also provided as also fluorescent lighting.

SECOND-CLASS CHAIR CAR -CUM-LUGGAGE & BRAKE VAN

The SLR Coach for the Vaigai Express is specially designed for carrying light luggage by passengers during their day journeys. For heavier accompanying luggage, the SLR coach contains a luggage compartment with an adjacent passage for movement of passengers and luggage. Provision also exists for a small store-room adjacent to the luggage room for carrying necessary provisions to cater for the extra requirements for the Pantry Car. One bay is provided to accommodate about eight Pantry staff. The other half of the coach contains second class accommodation for 40 passengers. The passenger section of SLR is provided with fluorescent lamps. Two Indian-style lavatories are provided at the other end of the coach.

The Temple City's Prestigious Express has many firsts

NAME BOARDS IN TAMIL

THE Government of Tamil Nadu has announced that, with effect from September '77 the name-boards of shops, establishments and hotels in the State should be in Tamil and wherever other languages are also used the version in such other languages should be below the Tamil version.

MEXICAN TRAWLERS FOR TAMIL NADU

TAMIL Nadu Fisheries Development Corporation will shortly acquire two Mexican trawlers of 23 meters size, at a cost of Rs. 80 lakhs. These trawlers are expected to reach Tamil Nadu in October and will be utilised for deep sea fishing.

Is it right for anybody to walk far to get a glass of water?

How far should she walk to get a glass of water? One Kilometer? Two Kilometres? And how many times a day? Sometimes in weathers that are totally incredible!

Is something being done about it?

Yes. The Government of Tamil Nadu will divert the proceeds from the sale of raffle tickets for rural water supply systems. Bringing drinking water to 4000 villages, all over the State.

This will happen, and will continue to happen, until such time nobody—least of all a mother-to-be—walks far to get a glass of water!

More prizes for more people!

2 first prizes of Rs. 50,000 each
3 second prizes of Rs. 10,000 each
5 third prizes of Rs. 5,000 each
and other prizes including additional consolation prizes in each series.

Totally 2655 prizes amounting to Rs. 3,90,000 in each of the three series!

Date of Draw: 22-9-77
Cost of ticket: Re. 1 only

Issued by the Director of Tamil Nadu Raffle Madras 600 002

Buy a Tamil Nadu Raffle ticket— you'll make someone live better!

JAPANESE CLASSICAL & FOLK DANCES

Charm and grace and fluid movements were the main characteristics of the dances of the Sakakibara Dance Academy, Tokyo. An exquisite programme of classical and folk dances were presnted by the artistes. The programme was sponsored by the Indo-Nippon Cultural Exchange and Kala Mandir of Madras.

The dancers in pleasing and colourful costumes were full of oriental charm and grace. The dancers move only their hands and fingers which was very expressive. Foot movements are not very vigorous as in Bharata Natyam. The tempo in classical numbers is rather slow. The folk dances are executed faster and danced with great vivacity.

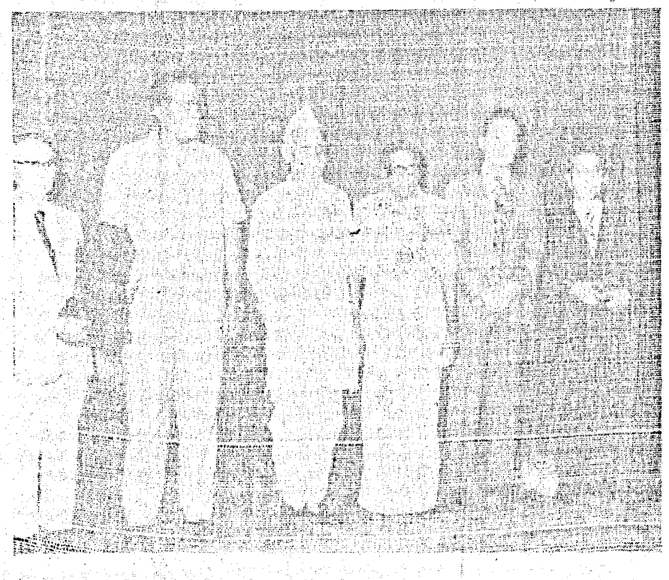
The programme opened with the number "Sakura"—cherry blossoms, the symbol of Japan. The delicate movements of the dancers were as delicate and tender as the cherry blossoms.

"Reinjishi" was a typical classical piece, refering to a Japanese proverb. A lion kicks its three day old cub down the cliff to see if it has the strength to come up. The piece reminded one of Kathakali movements.

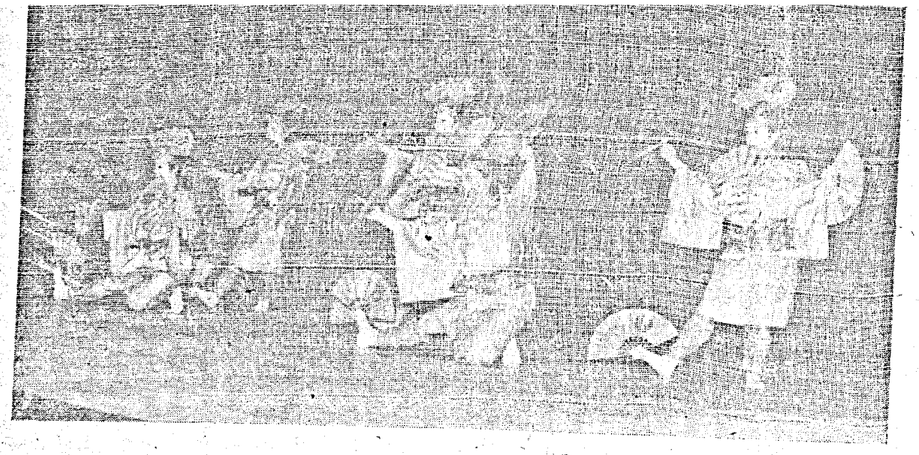
The dancers used long pieces of white cloth in "Sarashi", weaving various patterns in the air with remarkable skill.

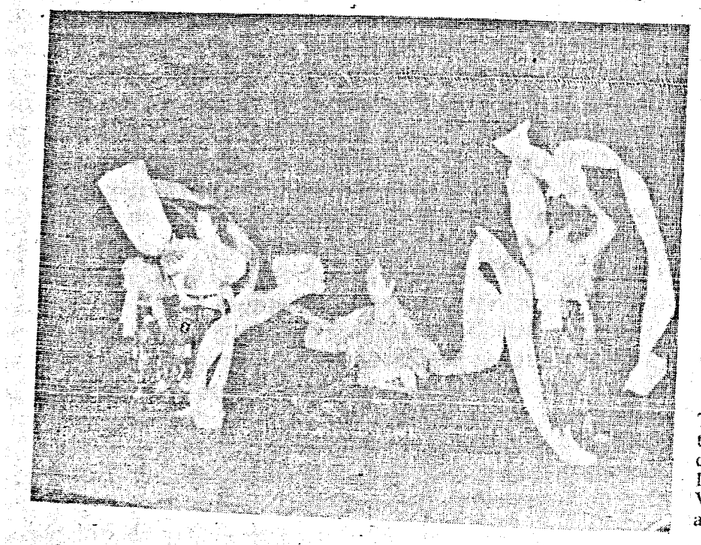
The folk dances consisting the second part had a more popular appeal, because of the faster movements and vigorous tempo.

Particularly the items, "Iyo Mangai" where the dancers use fans with great ease and skill to bring out various emotions and "Arita Dado" in which umbrellas were used with great dexterity. The women dancers used colourful sticks reminding one of Kolattam.



The Governor of Tamil Nadu, Thiru Prabhudas Patwari, the Minister for Information and Tourism Thiru R.M. Veerappan felicitated Professor Sakakibara of the Sakakibara Dance Academy Tokyo.

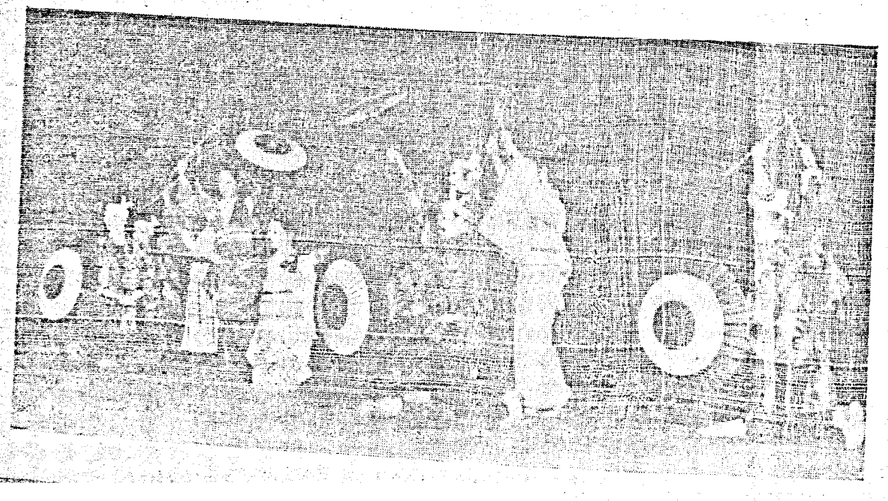




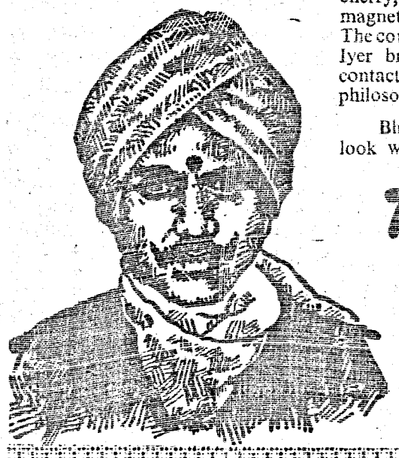
A touching-dance-drama was the highlight of the pieces. It projects the tenderness of maternal love. A mother crane almost gives up its life in the struggle of protecting its young from the deadly claws of a fierce eagle. Deeply moved by the strong maternal affection, the eagle stops its attack and flies away.

A heavenly crane comes down to earth and restores the mother crane by giving her the water of immortality. A happy ending in keeping with the tradition of the orient.

The choreography was superb. The illusions of the movements of the cranes was produced with telling effect. The Governor Thiru Prabhu Das Patwari and Thiru R. M. Veerappan, Minister for Information and Tourism felicitated the artistes.



THE POET PATRIOT



The name Subramanya Bharathi brings to one's mind, a person breathing the fire of patriotism which his poems reflect. Bharathi's poems influenced and inspired a number of people to plunge headlong into the struggle for freedom. Great stawarts like V. O. Chidambaram Pillai, V. V. S. Iyer, Vanchi, Kumaran and a host of others in Tamil Nadu, played a key role in the struggle for political emancipation.

The freedom-fighters valiantly marched to the martial music of Bharathi. They underwent untold sacrifices and sufferings. Many gave up their professions, forgot their homes and were swept deep in the current of national upsurge. They were undaunted by the blows of lathis or shower of bullets or hardships of prison life.

Every nation has produced poets. But few have reached such heights as Bharati. Bharathi was a great poet of extraordinary talents. His poems not only infuse patriotism but also brim with Bhakthi. His poems have captured the spirit of multi-faceted India and all that India stands for. This is his unique distinction.

Subbiah was born with a gifted tongue. His poetic genius was recognised early in life and the title "Bharathi" conferred on him. An orphan at the age of 15, he was brought up by his uncle at Banares. He became proficient in Sanskrit and Hindi. At the young age of 22 he was appointed as the Assistant Editor of "Swadesamitran" He was under the aegis of he stalwart G. Subramania Iyer, the founder of the paper and doyen of editors. This was the period when he was deeply immersed in political activity and poetic creativity. His songs brimming with the fire of patriotism were so popular, that V. Krishnaswami Iyer, dubbed a "moderate" by the political extremists, but a great admirer of Bharathi, printed 10,000 copies at his own cost and distributed them gratis.

The British Indian Government were disturbed by the growing popularity of the Bharathi songs and kept a close watch on him. Bharathi sought refuge in Pondicherry. Pondicherry was the haven of patriots who rebelled against the foreign yoke. During his stay in Pondicherry, Bharathi came under the magnetic spell of Sri Aurobindo. The company of this rebel and V.V.S. Iyer brought Bharathi into deeper contact with Indian culture and philosophy.

Bharathi's catholicity of outlook was remarkable. He sung in praise of gods and godesses not only belonging to the Hindu faith, but of prophets and founders of all other religions. He was outspoken in condemning the caste system and felt bitter that this evil brought about fragmentation of the people of the country. He affirmed :

Religion and caste shall not divide us ;
Once born in Bharat,
Be they of the priestly class or any other
All are children of the Mother.

In his vision of the future India, he said :

" We are of the same caste and race,
We are children of Bharat, all ;
We are equal in law and stature,
And every one is Bharat's King"

Subramanya Bharati showed us the way for national integration. His vision of India is superb.

" A bridge to link Lanka let us make;
Fill up Sethu and lay there a road;
Excess of water flowing in Bengal—
Let it cultivate the land in Central Bharat
Let us dig and bring out ores and gold from mines,
For sale in distant lands and bring what we want
With wheat from the gangetic region;
Let us exchange betel leveas from the Cauvery
Ivory-ware from Kerala shall we give;
As presents to poets of leonine Mahrattas
A device let us make for people in Kanchi ;
To hear Pandits performances in Kasi
To the brave Rajput heroes, let us give
Gifts of gold from Karnatak."

Bharathi's poems are essentially lyrical in character. But his poetic genius could be seen in ' Kuyil Pattu where his narrative power is of a high order. It is unquestionably the most enjoyable of his creations. Bharathi has eulogised women in his poems. He has championed women's emancipation. He says that woman is man's equal. She is no weak creature and is actually the Sakthi, the source of man's strength. Portraying the modern woman (*Pudumai Penn*) he has said that she should take an active role in the building of modern India.

His "*Panchali Sabatham*" a masterpiece is an elequent and moving, concise version of the Mahabharatham. This poem, a symbol of Mother Bharat's plight under alien rule is comparable to the ordeal of Draupadhi in the court of the Kauravas. In her resentment

and in a blaze of fury she turns on her unmanly, tormentors and pronounces the ominous vow that brings the down fall of the Kauvaras —a ultimate prediction of the eviction of the British and the liberation of India.

His Kannan Pattu are highly versatile and full of spiritual fervour. Like the Alwars of old he too has characterised himself as the beloved of Krishna and the songs poured forth Bhakthi. His vision of Krishna as a child, a teacher, a servant and so forth was a marvellous piece of poetry depicting original thinking on his part.

BHARATHI DAY

Elaborate arrangements are being made by the Tamil Nadu Government this year, to hold in a most fitting manner Poet Bharathi's celebrations on 11th September, 1977 and the Birth Day Celebrations of Perariner Anna on two days, the 15th and 16th September, 1977, in Madras City.

Symposia of Poets, seminars, debates, music performances, dramas, villupattu, etc., will from part of these celebrations.

The Governor of Tamil Nadu, the Chief Minister, Ministers, Scholars, Poets and eminent Artistes will participate in these celebrations.

Departing from the old poets and pandits in the matter of usage of language and the sytle, Bharathi created poetic pieces in simple, forcible, straightforward Tamil which could be understood by the learned and the layman alike.

There is not a home in Tamil Nadu where some line or other of Bharati is not quoted by someone almost daily. His is a great name that the Tamils honour unanimously.

MOTHER INDIA....

Thou are dearer than our life breath
Glorious Mother, that gave us birth:
Thine is the rich garden of Nature
Thine is the pure divine culture
Land of plenty !
Land of beauty !
Land of bounty !
Our life is a sacrifice
For Thy sacred service.

II

Thy heart is love; Thy head is light:
Thy word is truth; Thy act is right:
Mercy beams in Thy Magic eyes!
New life shines in Thy sun-rise!
Thy women are flames of Chastity!
Thy men heroes of dignity!
We hear in Thy new history,
The hymns and hails of victory!
Earth and Heaven sing Thy glory,
With faith and strength let us carry
Thy flag, free from imprints gory.....

III

We are Thy freedom fighters bold:
We serve Thy will through heat and cold.
O! Mercy hold to our parched lips,
Freedom nectar in golden cups.

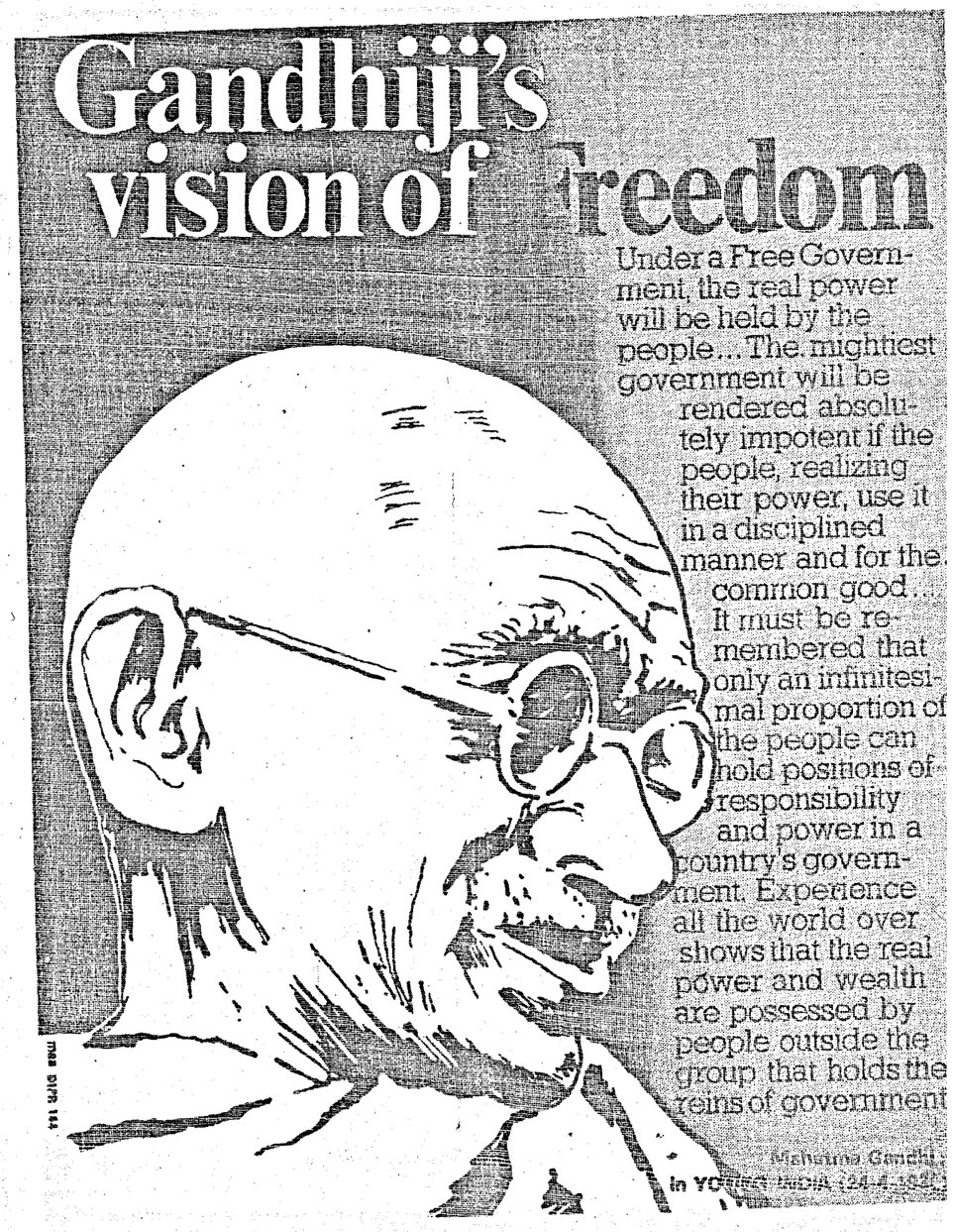
IV

Thy gentle grace is our stronghold
Mother of super-mankind bold.
Give us strength to hold Thy banner
Aloft and guard Thy great honour.

V

O giant lioness astir,
Thou art with us! no more is fear!
We salute thee O tender ruth,
Lead our life from Truth to Truth.....

By
YOGI SHUDDHANANDA BHARATHI



Regd. No. M. 8676-A

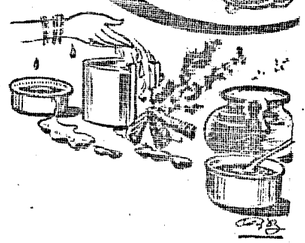
Prevent Fire Accidents

Do not allow children near fire

Avoid smoking in bed

Use lamps with chimneys

Put out burning cigarette butts



Extinguish fire after cooking

Indifference
is the cause for
fire accidents

PREVENTION OF FIRE ACCIDENTS IS THE DUTY OF ALL

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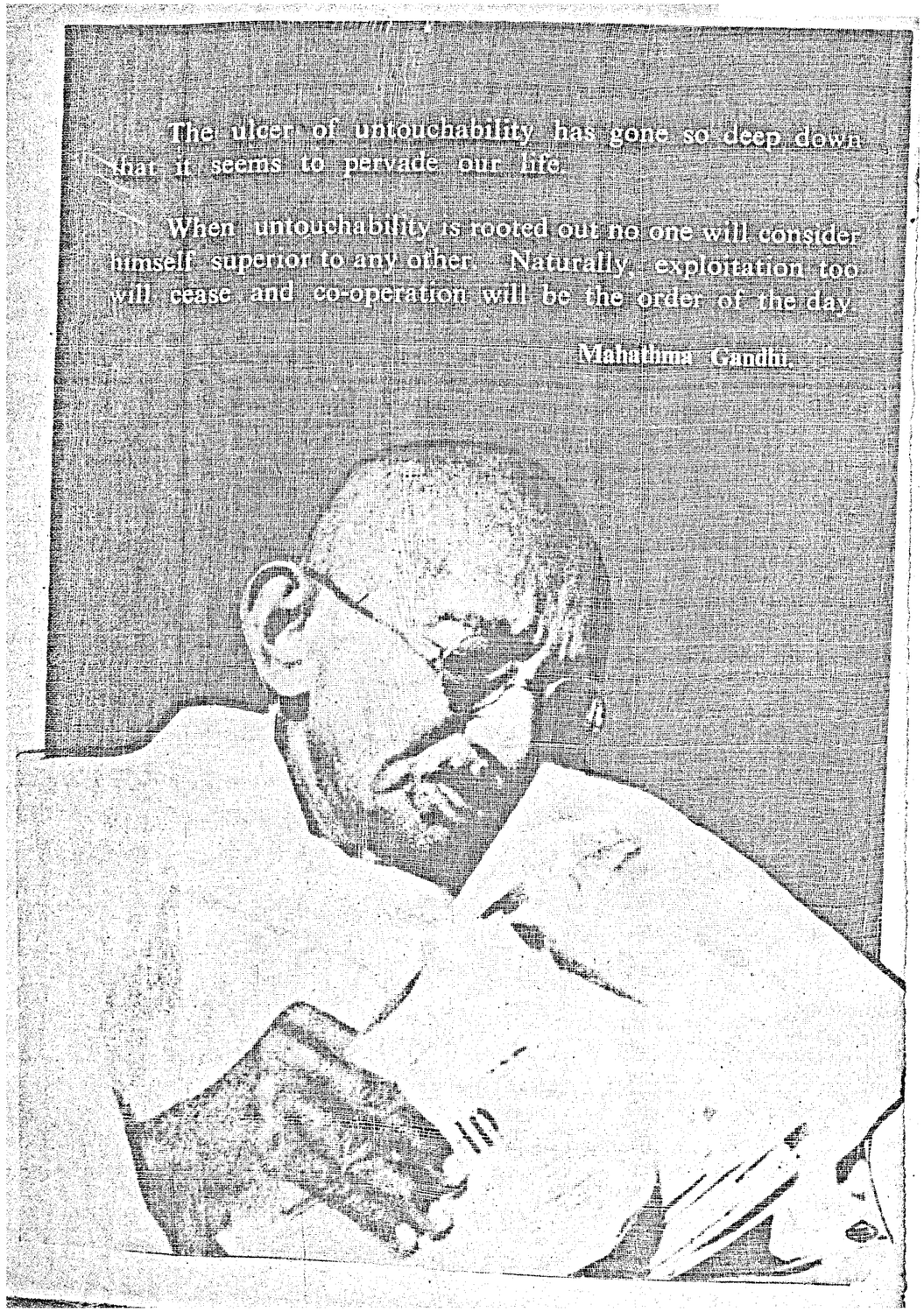

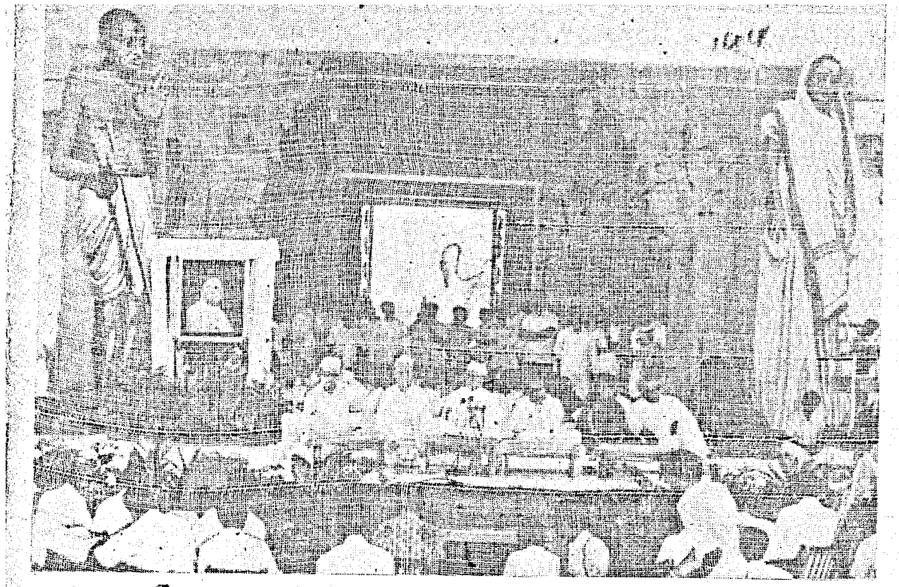

PRIME MINISTER IN TAMIL NADU

The Prime Minister Thiru Morarji Desai unveiled a portrait of Sardar Vallabhai Patel at Gandhi Mantapam, Guindy on 22—9—'77.

The Prime Minister opened the techaical section in the "Little Flower" convent at Teynampet on 21—9—'77. The Governor and the Chief Minister Thiru M.G.R. are also seen in the picture.

Tamil Arasu

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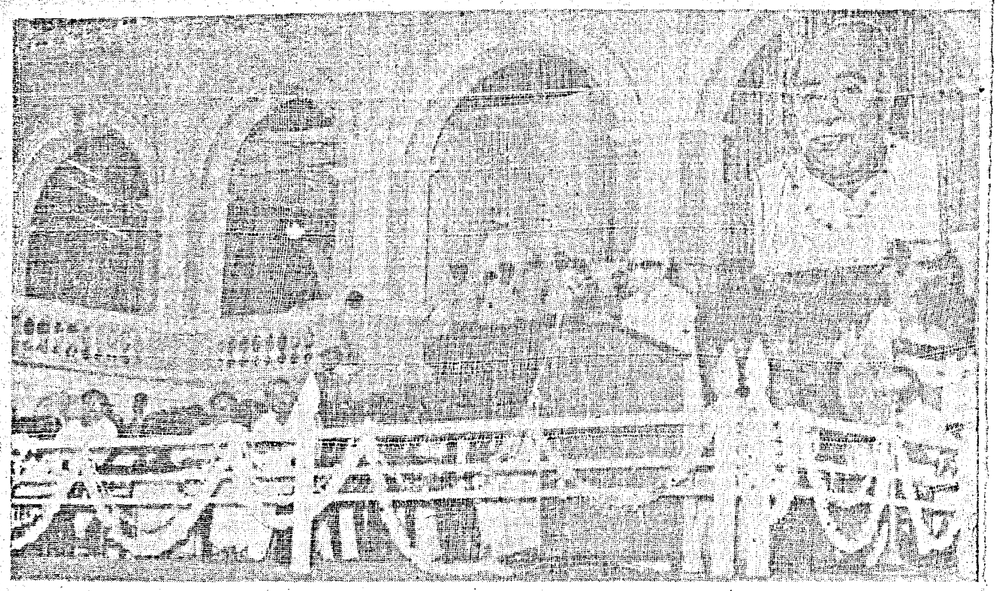


The Chief Minister, Thiru M.G.R., speaking at the valedictory function of Anna's birthday celebrations at Rajaji Hall on 16—9—77

that his party would suspend all agitations and co-operate with the Government in its war efforts against China.

He emerged as a national figure —as a leader of All India Stature when he entered the Rajya Sabha. His "maiden speech" in the Rajya Sabha, a masterly oratorical performance attracted national, and even international attention. The Press in India hailed it as a "marvellous performance." His speeches in the Rajya Sabha from 1962 to 1966 made Members hear him with attention and respect. His speeches were full of sobriety and responsibility. He was meticulously careful to avoid any collision with the Centre. In fact he fostered national unity, smoothened the relationship between the Centre and State, while at the same time protecting the rights of the State.

It was a tribute to his scholarship that he was invited to go to U.S.A. as an invitee of the Yale University's Chubb Fellowship Programme. He was the first non-American to receive this honour. Anna, during his visits abroad, was a true ambassador of goodwill. On no occasion had he differed with the foreign policy of the nation while he was abroad. He projected the spirit that lay in the nation's unity and integrity.

Anna always preached and practised the doctrine of duty and discipline.

Like Abraham Lincoln he believed that the best way to win was to make a friend out of the enemy.

Perhaps the key to Anna's greatness lay in his own integrity. Anna never tried to pretend to be what he was not. Nor did he ever have to hide what he was. Duty-Decorum-Discipline (Kadamai Kanniyam-Kattuppadu) is the proverbial motto advocated by him.

He had always been a genuine friend of the working classes. "Tap the rich and pat the poor" underlines his economic policy.

In the legislature, he became a model parliamentarian who could frankly admit that the opposition also may have good points to say. He said "The Jasmine in the garden of the opponent also has fragrance" (Matran Thottathu Malligaikkum Manamundu).

Each and every word of Anna was the outcome of the long and ripe experience and the subtle wisdom of culture.

Anna was not only a politician and statesman, an organiser and administrator, a scholar and humanist but a literary craftsman of a very high order. Anna himself had once significantly quoted a very beautiful sentence from his favourite author Somerset Maugham; "Beauty as life is nothing but this, each should act in conformity with his nature and his business."

Anna is no more with us. Yet, he lives in the hearts of the people. Let our people uphold the principles of Duty, Decorum and Discipline enunciated by him and pledge themselves to follow his path in the service of the humanity that was dear and near to his heart. Let us work to our best for the uplift of the poor and the down trodden. Let us work for the unity of the Motherland to our utmost irrespective of religion, caste, community, region or language.

The best way to honour him is to remove ill-will and bitterness from public life, adopt a spirit of compromise and follow a policy of give and take in settling all public problems. We can well say that he who injures another in word or deed is not a true follower of Anna. In short Anna believed in non-violence as a creed. He believed strongly in integrity and character. His public life was transparent. May we profit by imbibing these noble qualities.

There still existed a big information gap about India abroad and this should be bridged adequately to attract more foreign tourists to this country, said Thiru M.G.Ramachandran, Chief Minister.

Thiru M. G. Ramachandran told travel writers from Europe, the U.S. and West Asia who were on a 15 day tour. "Destination South India", "language need not be a barrier for understanding the richness and heritage of Tamil Nadu and other southern States." He inaugurated a seminar on "Destination South India" organised by the Tamil Nadu Government, Department of Tourism.

Presiding over the seminar, Thiru R. M. Veerappan, Minister for Information and Tourism, urged the Government of India and Air India to arrange for more international flights to touch Madras to boost the tourist trade of Tamil Nadu. He pointed out that Tamil Nadu and the South had been long neglected in tourism promotion and only of late attention was being paid to this region. South India being the gateway for tourists from the East, Far East and Australia, efforts should be made to get more international flights to come to Madras and to attract tourists coming to Sri Lanka also here.

Miss Vatsala Pai, Deputy Director-General, Department of Tourism, Government of India, referred to the steady increase in tourist traffic to the South and said that the object of "Destination South India" programme was to accelerate this trend and to disperse some of the traffic on the high density routes in the noth to this area.

As part of its efforts to boost tourism the Department of Tourism had invited about 60 eminent writers from the main tourism generating markets for a two-week familiarisation tour of South India. After spending four days in Madras and Mahabalipuram they followed three different itineraries to cover as many points of tourist interest as possible in two weeks.

The travel writers witnessed an audio-visual presentation on South India arranged by the Tourism Department of the Government of India.

"Language no barrier to understand cultural heritage of Dravidam" —*says M.G.R.*

In his inagural address Thiru M.G.R. said :

"I understand that all of you have assembled to give your valuable suggestions at this seminar on "Destination South India." Holding a responsible position, I would also like to make a few suggestions.

When we say "Destination South" I am sure you will be aware of the meaning inherent in the title "Destination Dravidam". You might have also learnt about the four linguistic States of South India and the four languages spoken there and their history.

I would like to point out that Tamil is the mother of the other three regional languages of this region. These languages, it is said, have evolved through usage of Prakrit and Sanskrit languages. You may not be aware of this. You may wonder why we should discuss the language issue with the tourists. But I am sure you will not raise the question. It is better for everyone to know something about a country's language while visiting another country. It is even better to know about those who speak that language. The owners of a language also have a history of their own. Such a historical background provides the tourist a feast for the eyes, food for thought and relaxation for the mind. When I had been to Nairobi, they asked me, "Is it a fact that the people in your country earn their livelihood by snake charming alone ?" I am pointing out this to show how important it is to know the history of a country. The history of a

TRIBUTES TO ANNA

The Governor of Tamil Nadu, Thiru Prabhudas Patwari inaugurated a two-day celebrations organised by the State Government in connection with the birth anniversary of the former Chief Minister Arignar Anna on 15-9-1977 at Kalaivanar Arangam. Earlier, Thiru M. G. Ramachandran, Chief Minister, and his colleagues garlanded Anna's statue on Anna Salai.

Welcoming the gathering, Thiru R. M. Veerappan, Minister for Information and Tourism, said some leaders rose above politics and attained national stature and it was the duty of the Government — which ever party was in power, to pay homage to them and honour their memory.

A poets meet and a Pattimandram were part of the programme.

Winding up the two-day celebrations organised by the State Government to mark the birth anniversary of the late Arignar Anna at the Rajaji Hall campus the Chief Minister said the object behind the celebrations was to show to the people the many facets in the life of Arignar Anna and this festival would become an annual feature. The Government was anxious to implement the ideals of Arignar Anna and was against cheap publicity.

The Chief Minister gave away prizes to winners in various competitions held to mark the celebrations.

The Governor in his tributes to Anna said :

"Anna to me is a leader of the entire humanity, a selfless dedicated and devoted man of integrity.

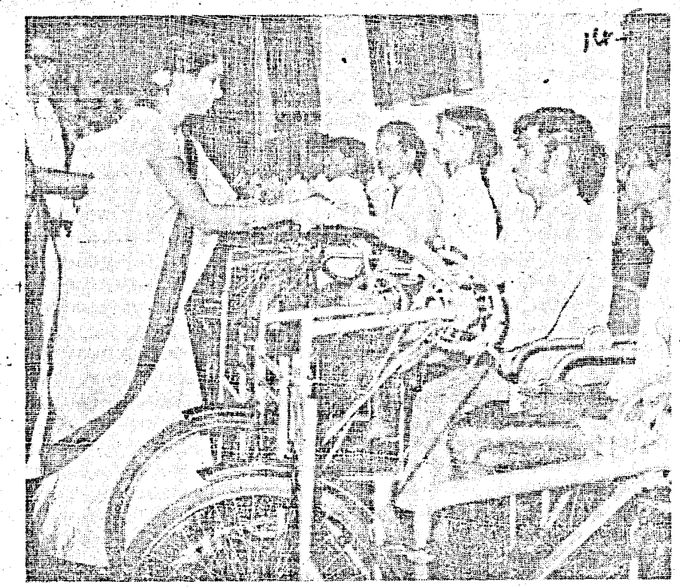
Great men do not die. They are immortal. Anna was by any test, the darling of the masses. Anna was a many-sided personality. He was a powerful speaker, a journalist, a dramatist, an actor, a social reformer, a politician, a statesman and above all a man of the masses. Humane in his approach, scholarly in his attitude and kind to all, rightly has he been affectionately called as "Perarignar Anna". Anna, was very simple and humble. His wants were very limited.

Anna had a great mastery over Tamil. He had a distinct style of his own in his speech. His writings had depth of vision. His plays were thought provoking. His literary criticism was classical. His interpretations were strikingly fresh and original. His inimitable style has become the half-mark of modern Tamil. Anna gave a new dimension to the renaissance of modern Tamil in all its spheres.

Anna started his public life as a social reformer. To Anna, political democracy was futile without social emancipation. He realised how caste system had crippled the initiative and progress of the country. He was aware of the fact that orthodoxy and superstition retarded human progress. He therefore fought relentlessly for eradication of social evils.

As a reformist and progressive economic thinker Anna was quite impatient for change but that never drove him to adopt extraconstitutional methods to achieve his goal. He believed and strove for an equitable social order — casteless and classless. He employed all his talents and efforts only towards that end. He strived hard till he breathed his last to establish a new society based on the three cardinal principles of democracy, rationalism and socialism.

If ever a leader in this part of the country could be described as truly charismatic, it was Anna whose speeches had cast a spell on the millions of people who flocked to hear him and accepted him as their guide, philosopher and Elder Brother-"Anna". Thought-provoking approach, rationality in thinking, cogency of expression, fluency of words, appropriateness of illustrations are some of the special features of the good oratory of Anna.



Selvi P. T. Saraswathy, Minister for Social Welfare, distributes three wheelers to physically handicapped on Anna's birthday

Anna was wedded to prohibition. He remained a Gandhian and stood firm like a rock against all pressures brought by many powerful publicmen to give up prohibition. He declared in no uncertain terms that his Government under no circumstances will think of giving up Prohibition. Although he knew that prohibition would bring to the State Exchequer a sizeable loss, he had decided to forego the dirty income which would add to the misery of poor households headed by men addicted to this evil. He said, "We have reared a new generation (free from the sight and smell of alcohol) and if in this new generation, even there are some who break the Prohibition Law, we can only take it as the perennial interest which some people have in breaking laws. Just because laws are being broken, it does not warrant any civilised Government to do away with the law itself. Rather, we should find out the ways of plugging the loopholes, of taking into our service. missionary-spirited people to do Prohibition propaganda and see to it that Prohibition is made a very full success."

Even as a student leader, Anna was keenly sensitive to the political and social injustice around him. I think there is a Tamil proverb to the effect that the future of the crop is revealed by the sprouting of the seed. (Vilayum Payir Mulayilay Theriyum). He was very popular as a student.

The giving up of the demand for the separation of Dravida Nadu from the rest of India was indeed a great act of his statesmanship and wisdom. It was in the year 1962 that the entire country was shocked by the invasion of the Chinese across the Himalayan borders. The shock was more intense and severe to Anna. He decided that we should all be one in India.

In fact, at that time he was serving his sentence in Vellore Jail for his part in agitating against the rising prices. Without any hesitation whatsoever he came out with a bold statement advising his followers : "In our anger against the Congress regime, we should not commit the mistake of slackening our efforts against the foreign invader. We of the D.M.K. consider it our sacred duty to rush to the help of the Indian Government in its efforts to protect and safeguard the sovereignty of our soil." External danger like the Chinese invasion made Anna to emphasise that Indians should march as one man and should live as one family.

So, Anna, on his release from the Vellore Jail in 1963 declared

The Chief Minister, Thiru M.G.R., presenting the 1st prize to Thiru Balasubramani Venkataraman, in a poet's competition held during Anna's birthday celebrations

The Chief Minister Thiru M.G.R. addressing after inagurating the Seminar Destination South India at the Taj Coromandal on 14—9—77

nation is the sum total of its valour, love, art, literature and language.

The communication gap between the people of one country and another is on the increase. This should be reduced. My colleague Thiru R. M. Veerappan, Minister for Tourism in his Presidential Speech referred to the foreign exchange obtained through tourism. Befitting his position he had made those remarks. As Chief Minister, I endorse his views. I would like to stress another aspect. It is not only a matter of earning foreign exchange. It is more than that.

Nations should respect each other. The historians should record the events of their country in such a manner that the common people should be able to understand how the people of the past lived and what kind of people they were and so on. As far as Tamil Nadu is concerned its history will reveal how the Tamilians have progressed united by language and nature and became heirs to a rich past. We should develop the art, culture, discipline and dignity which are an integral part of this past history.

The temples of Tamil Nadu are not merely walls with some figures here and there in niches. Each sculpture will unfold a story; they will speak of love, valour, pathos, grief and of the cultural remnaissance of those days. Surely the sculptors who produced these masterpieces cannot be ordinary artisans. The sculptures you will see in Tamil Nadu, will reveal this truth to you.

Such a refined product can be turned out only by the chisel of master craftsmen who are dedicated men and not by the whip cord of a king. In essence the art of sculpture in Tamil Nadu reflects the spirit of the people.

As there are different gods and different religions we do have different facets of Mother Nature. For instance Ooty is there for those who would like to feel the cool climate. For a lesser cool climate there is Coonoor and Yercaud. To enjoy warm weather and natural beauty on the plains, we have Courtallam.

You might have heard about Mamallapuram. The place came to be called as Mamallapuram after the title "Mamallan or "Mahamallan" of the Pallava King who created these monuments. "Mamallan" means a great wrestler. The monuments at Mamallapuram which you will see were created by the King "Mamallan" and his father.

It may sound amusing if I tell you that one should also know music to chisel sculpture. Our sculptors who knew music were able to bring out the musical notes in the pillars sculptred out of stone. The basic notes in Carnatic music are "Sa, Ri, Ga, Ma, Pa, Tha, Ni" You can hear these notes by tapping the stone musical pillars of the Madurai Temple which are exactly similar to the sound on a musical instrument. Such sculptural pieces were chiselled throughout the past for thousands of years.

The artistic passion of the people in turn enriches the civilisation. You can see how the sculptures of different times had given shape to the civilisation of the Tamils. One of the Apostles of Jesus Christ had come to Madras several centuries ago and propagated his ideals. The Tamilians of those days were endowed with the insight to receive his ideals.

The sculptors of the past had no desire to publicise themselves and hence did not engrave their names on their works. We cherish their memory with respect and regard.

Such a glorious architecture of Tamil Nadu and its scenicsplendours are not entirely known to foreigners. I therefore request you to understand us and our culture so that you can make them known to the world. You have the opportunity to do so. I am confident you will do that.

I have seen many places of interest when I visited Soviet Russia, America and Nairobi and Egypt. I would like to say, when compared to their art architecture and civilisation, the art architecture and civilisation of Tamil Nadu is more progressive.

Our thought and action should be directed towards this end so that the rich mosaic of Indian's ancient history and of Tamil Nadu is made projected to the world."

Prevent Scrub Cattle Grazing Illegally

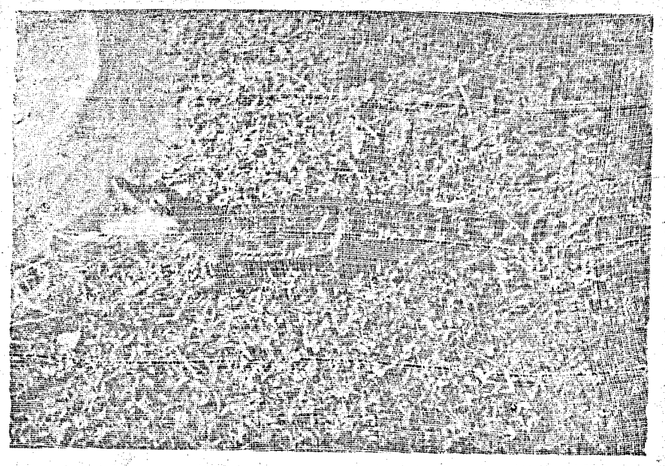
THIRU G. THIRUMAL, I.A.S.,
Secretary to Government
Forest & Fisheries

Domestic livestock enjoy unrestricted grazing in Government Forest areas on payment of no fee or a nominal fee. In villages where no Government forest is situated close by, private owners of grazing lands charge as much as Rs. 30/- to Rs. 40/- per head of cattle while the grazing fee in Government forest is as low as Re. 1/- per head of cattle. We are not practicing any scientific pastural management in the forests, although now and then some attempts made to restrict and regulate the grazing proved a failure mainly due to the ignorance and non co-operation of the villagers, so much so, the cattle of the area entirely depend on the forest for grazing. Even cattle of distant places migrate during certain seasons resulting in further increase in the pressure on forest land. Although the Indian Forest Policy of 1952 lays down guidelines for management of grazing in forest areas and this subject was discussed repeatedly in the Central Board of Forestry and although the Estimates Committee of the Lok Sabha expressed grave concern over the indifference in implementing the Forest Policy, much has to be done to control the grazing and putting it on scientific basis. Grazing is a major problem in all National Parks and Sanctuaries as it is injurious to a Park and Sanctuary. Much more so, in areas where the rainfall is scanty. The demand for grazing is greater in a low rainfall region. Thus grazing of domestic cattle is in direct competition with the wild animals. The Cow herds cause a lot of disturbances which threaten the existence of our wildlife. In Masinagudi of Mudumalai, the Lower slopes of Anamali Sanctuary and greater portion of Kalakad and Mundanthurai Sanctuaries as well as Point Calimere, thousands of cattle from the nearby places pose a big hazard to the Deer and Antelope population there. It is noteworthy here that our famous Mudumalai Sanctuary where we used to boast of seeing herds of 50 to 70 gaur (bison) at a time, became completely depleted of this majestic animal in 1969 due to rinder pest, a disease spread by the domestic cattle resorting to grazing. It will take atleast 2 decades of zealous protection to get back its original glory. This is why cattle entering the sanctuary are first inoculated against such diseases.

It is argued that grazing has been a part of Indian wildlife and it has been in the forest for hundreds of years. Once a few cattle are allowed, it is not known how many really resort to grazing legally and illegally. But at times of famine or drought, large number of cattle are moved to sanctuaries and the greatest sufferers in this are the wild animals. The Chittal and Sambhar are sacrificed for the sake of generally unproductive scrub cattle. Once this Sanctuary is disturbed, it takes years for it to recover. So the Wildlife Organisation rightly considers the Sanctuaries as State Farms and in their interest has to resist the pressure for grazing and to prohibit or regulate it.

The total forest area of Tamil Nadu is 20,910 Sq. Km. and the cattle population including the buffaloes, cow, sheep and goats is 23 million. This shows the *average* pressure of grazing is 1,000 per sq. Km. In practice, it will be four times this figure because it is the outer slopes which bear the brunt more being nearer to the villages where the cattle go and the grazing pressure is not uniformly distributed all over the forest. The area of the 8 sanctuaries of the Tamil Nadu State is about 2,980 sq. Km. *i.e.*, 1/10th of the forest area. By closing this 1/10th of the forest area for grazing and keeping out this scrub cattle from the nearby villages, the economy of the villagers may not be totally upset. On the other hand, they will be constrained to learn by this to maintain a few high quality cattle, which in the long run will be more remunerative than possessing numerous scrub cattle. The ban on grazing inside the Sanctuaries will not only help to recover the wildlife population but also to rehabilitate the degraded forests which are prevented from establishing due to the heavy and continuous pressure of grazing.

SHEDDING TEARS FOR THE CROCODILE



The great concern for the dwindling numbers of the valuable reptile had made many really shed tears for the crocodile. The enormous value for its belly skin and the rarity of the real crocodile leather had caused the trader, who was indirectly responsible for its reduction in number to the extent it had reached the extinction point in many parts of the globe, now take greater interest in its rehabilitation so that not only the animal may be saved from extinction but also that he may not be thrown out of trade. It is not been realised by many that many of the species could be saved from extinction if realistic and expeditious steps are taken to breed them in captivity, with an eye on eventual harvesting of the excess numbers, once the optimum number is achieved for rehabilitation of the species in the wild. One way of saving a species from extinction is by making it an economically valuable commodity and enthuse people to take to captive breeding in an organized manner.

The crocodile with which Tamil Nadu Forest Department is now concerned is crocodile palustric (mugger ; mudalai). It lays about 30 eggs in a cluster. It takes ten to twelve weeks for hatching. The newly hatched siblings are vulnerable to predation and survival to maturity is less than one percent. Under artificial conditions 30 to 50% can easily be achieved in the hatching stage (that had been over 90% in some case). Initial growth is about 50 cm. in a year. By breeding at a greater rate than in the wild and taking necessary steps to release the young progeny at a stage when they would fend for themselves in their natural habitat, not only can the crocodile be saved from extinction but it can be made a continual past of the eco-system by providing an alternative to the cupidity of man for its leather by organised harvesting of the excess in the breeding centres, instead of wanton destruction of the species in the wild.

Crocodile is a large reptile with bony scutes and horny scales. Some have longevity as much as 100 years. It takes three years to reach a metre in length under artificial conditions. The Tamil Nadu Forest Department will be able to release by the end of seventies one hundred yearlings in the wild if its present programme is continued. Two years ago it was estimated that hardly 300 crocodiles were in the wild in Tamil Nadu. Today inspite of small beginnings the Tamil Nadu Forest Department has over 300 hatchlings in the course of two years of organised egg collection and artificial hatching of the eggs. The eggs were collected in and around Hogenakkal, Sathanur Amaravathi, Kilikudu, Elathur, Vakramari. A record collection of 408 eggs were made during 1977 season.

The crocodile lays its eggs in a duster and covers them with a layer of earth. A duster contains about 30 eggs. In nature the percentage of survival of the hatchlings is very low. Added to that there is evidence of cannibalism. Hence the factors for the survival of the species are inimical even in its formative stage than in its adult stage when it had been cruelly hunted for its leather. Harvesting of the species under controlled conditions after sufficient number had been reared for rehabilitating the species in the wild is an assured way for the continual existence of the crocodile. Those who shed tears on even culling of the crocodiles in the course of its rearing, let alone harvesting of the excess, are only paying lip service to the cause nature conservation. Their tears for the crocodile are crocodile tears. Crocodile tears in our phraseology had come to mean hypocritical grief, from the old story that crocodiles which have large lachrymal glands, shed tears over the hard necessity of killing animals for food. Whether or not the belief that the crocodile wept while devouring or to allure its victims, let us not shed crocidle tears, when an organised attempt is made for the multiplication of a dwindling species.

by

T, JAYADEV, I.F.S.,

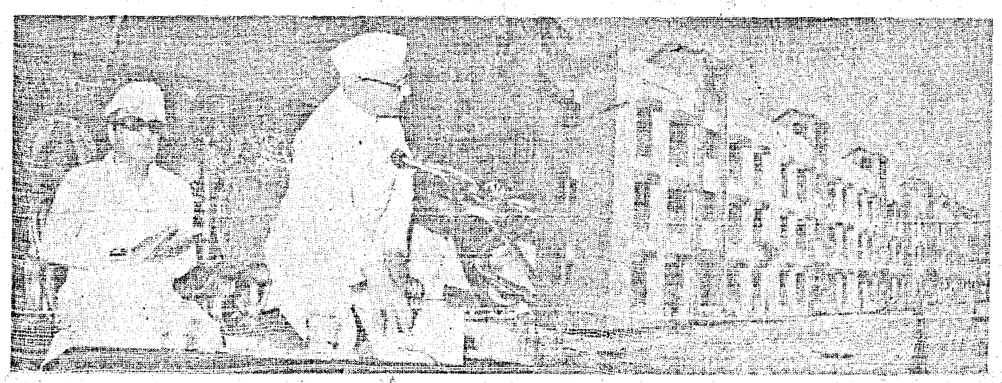
Chief Conservator of Forests,

Madras

The Chief Minister Thiru **M. G. R.** *presenting the Chief Minister's* **Police Medal** *to the meritorius personnel of Police and fire service at the Rajarathnam Stadium on* **15-9-'77.**

PICTURES

The Prime Minister Thiru **Morarji Desai** *opened the Policeman's Colony at Raja Annamalaipuram on* **21-9-'77.** *The Chief Minister Thiru* **M. G. R.** *presided over the function*



literature, such as praising the country, praising her natural beauties, praising her great heroes and heroines, praising her great achievements, expressing unmitigated love for the motherland, expressing joy in her present and hope in her future. Are these unworthy of any nation ? These have been proscribed. I have got copies here and I can make a present of them to the Hon. the Home Member or the Law Member. I will make a present of them to the Council Library and if the police want them they can go and search there and take them. I shall read from the first book of songs in order to convince the House that there was no need for the Government to confiscate this literature :

Vande Maataram enhom
Maanila-t-thaayai vanaguvadenhom (*Vande*)
Jaathi mathangalai-p-parom—Uyar
Janmam iddesattil eythinarayinum
Vediyar aaiyinum onre—Anri
Veru Kulathavar aayinum onre
Eena paraiyarkalenrum—Avar
Emmudan vazhndhu ingiruppavar anro?
Cheenathaar aay viduvaaro? pira
Desathaarpor-p-pola theengizhaippaaro (*Vande*)

"We will worship our Mother, we will not mind to which caste or which religion, our fellow citizen belong ; if they are born in this country, all of them are our brothers. Even if they are called Paraiyas (Harijans), are they foreigners ?

Onru pattal undu vazhvu — Nammil
Otrumai indril anaivarkkum thazhvu
Nanri therinthidal vendum—Intha
Gnanam vandaal pin namakethu vendum? (*Vande*)

"I commend these lines to the particular attention of the Hon. the Law Member and the Chief Minister and the Home Minister. If we are united we can live ; if we are not united we are all equally humiliated—Treasury Bench and the Opposition alike (Laughter) Then I appeal to the Tamilians. Have you heard any more inspiring lines than these ? I have not.

Chenthamizh naadenum
pothinile—Inba
Thhen vanthu paayuthen
kaathinile — Engal
Thanthaiyar naadendra
pechinile—Oru
Sakthi pirakkuthu moochinile —
(*Chenthamizh*).

"I do not know, Sir, if there is any Tamilian in this House or outside whose heart will not melt at these songs. I ask them to remember this, that these songs are now declared forfeited to His Majesty by the action of a Government which are to a certain extent kept in those treasury benches by us. The music of it is so great that even a halting reader of those songs like myself can make an appeal to the members here.

"I have listened to Hon. the Law Member shouting here yesterday ; he has not even read these songs, but still he has forfeited the book. I can understand if the Government has chosen one of those songs or two and said that those songs should be forfeited. They have not done anything of the kind. These two volumes consist of some of the most moving songs on our religion and letters, apart from pure patriotism.

What they sang : "I shall finish by referring to similar songs in English literature which Englishmen sing in their country, which they sing even in our own country in private dinner parties and other places. They sing of the glories of England" "Britain shall rule the waves. Britain shall never be slave but Indians shall always be slaves." That is the burden of their songs, if they are to be judged by the results of the actions. Lord Tennyson sang :

At her girdle clash
The golden keys of the East and West !
Her mailed hand keeps the keys of such
Teeming destinies

William Blake wrote—

Their mighty wings stretch from east to West
Their nest is in the sea, but they shall roam
Like eagles for the prey.

Then England's message in Parker's words :

Then Courage, all brave mariners
And never be dismayed
Then be bold-work for gold
When the stormy winds do blow.

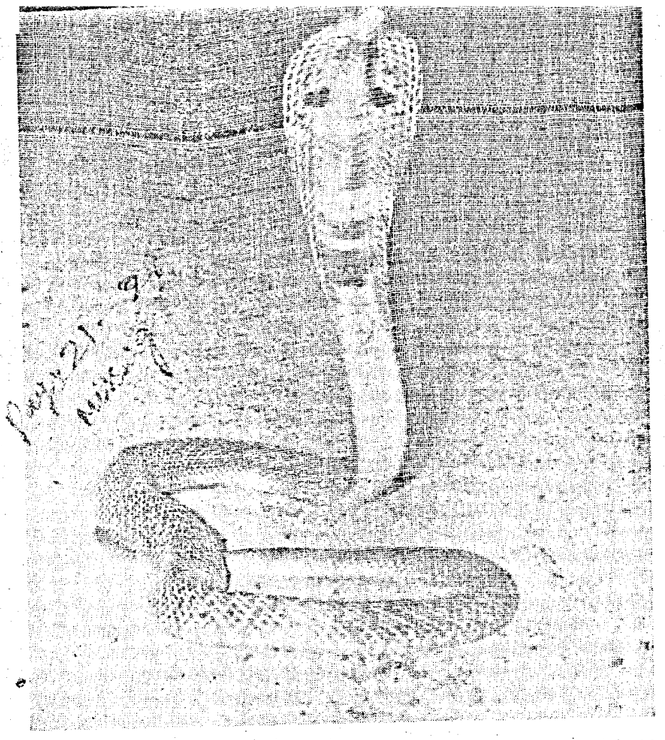
Lord Tennyson says :

The fleet of England is her all in all
Her fleet is in your hands
And in her fleet her fate.

"I want to point out three capital differences between the English nationalistic literature and ours. English nationalistic literature boasst of its own strength and speaks of the confusion and destruction of their enemies. "God save the King, send him victorious, happy and glorious and confound his enemies." That is the Englishman's song. The Englishman's psychology is that God has to deal with only two categories, England and her subjects on the one hand and her enemies on the other. That is, God must give up all His other work and constantly save England and confound her enemies. Humanity has come under these two categories, England and her subjects on the one hand or England and her enemies on the other. Whereas the message of Subrahmania Bharati is the message of all races, of poets, philosophers and seers of all nations.

"Let India be free and happy and the other nations of the world be free and happy. Is it for preaching this message of peace on earth and goodwill to all men that the Madras Government which does not understand the ABC of patriotism or nationalism have ventured to lay its profane hand on this sacred literature? We are constantly told that we are a nation of many races and creeds. Bharati was a Brahmin by birth, and I appeal to non-Brahmins in the South — several of them were his friends and I do not want to name them — to say whether throughout his literature, there is a single trace of caste or communal bias or superiority or inferiority. He talks only of Indians as a whole, he knows no distinction of class or creed, race or religion. He is the most cosmopolitan that I know of among modern authors. Is it for preaching this harmony among men that his books are sought to be forfeited by this Government ? It seems to me that this action of the Government cannot be justified on any basis whatever, either of duty or of reason.

Courtesy : YUVA BHARATI



move off towards the new site. Thus, there are two space and time systems operating, the lesser one comprising the activities of the animal within twenty four hours inside its territory such as search for food, and the greater space and time system which includes seasonal activities of a wide range at greater intervals.

The enemy prey relationship is an important factor in the life of a wild animal. Man is the universal enemy of nearly all animals in the free state. In the presence of an enemy the animal shows a characteristic escape reaction, specific for sex, age, enemy, and the surroundings. It does not, on the approach of the enemy simply run or fly away, but exhibits various behaviour mechanisms such as crouching, hiding, freezing and all the while watching. Only when the enemy approaches within a definite distance, the prey animal takes to flight. This distance is known as the flight distance which varies from species to species, and even for animals of the same species according to the environment. In the mosaic of overlapping territories several species living in freedom are piterconnected, besides the enemy-nery relationship. There is a biological competition for food, moving space and choice of resting and sleeping places. Even among groups of the same species there is a social hierarchy in which there is a leader — in some cases a female and in others a male. A definite behaviour-ceremonial has been observed to be present in regard to the intercourse of each grade with its fellows. An infringement of this ceremonial attracts a painful rebuke or fighting. If the leader of the group happens to be a male, other males of socially inferior status rarely have a chance to mate with the females in the group. The social inferiors have to go without sexual gratification. A fight for the leadership and the possession of the harem decides once again on whom the mantle falls.

Thus, it is emphasised, that the popular conception of golden freedom among animals in nature is purely a product of the human imagination, and certainly not a biological fact.

Many animals are born in captivity and they know nothing of the so called freedom. But a captured wild animal suffers a little in the transition phase from freedom to captivity. The sudden severance of the various stimuli to which it has been used to, causes some anguish to the new captive. The main urge in nature being the compulsion to escape from an enemy, especially from man, the animal is unable to put its flight distance between itself and man and so it remains in a state of excitement. Since in practice, it is impossible to fit the size of the cage, to the flight distance of the animal, the only solution will be to reduce the flight distance to nil to bring the animal to a state of rest. In other words, this is achieved by taming. In this process the wild animal ceases to consider man as its enemy and the urge to flee from him gets dissipated.

It is known for a fact that the great majority of the animals in captivity are far healthier and better fed than those in the wild and also have an average longer life. It is doubtful whether lack of space is a very serious consideration when providing suitable accommodation for animals. Species which do range over wide territories such as elephants, the larger ungulates and birds of prey are among the easiest to keep in menageries and generally live to a ripe old age.

The desirability of maintaining zoos cannot be gain said. No one can deny the great pleasure given to a large section of the population, by the opportunity of seeing the living animals. Theoretically, of course, the best way of seeing animals would be to see them in their natural surroundings. But, how many have the time, means and inclination to do so ? And how many can see the wild animals in different parts of the globe in their natural surroundings.

Several species of animals exist today due to facts learnt about them in zoological gardens.

Examples are the American Bison, and the Koala. Some species of animals now extinct in freedom continue to live in captivity as for example the European Bison, the wild horse, the Pere David deer and the Barbery lion. In regard to many species of animals, birds and reptiles that are threatened with extinction, the only hope of their survival will be their maintenance and breeding in captivity. An animal stands to gain through the spread of the knowledge of animals and of love of animals due to Zoological Gardens.

Their's is an endless quest for water

Shocking isn't it, that when most people have just to turn on a tap, these children have to walk miles to get a little drinking water.
And that too from sources like rivers and water holes, invariably bogged down with garbage and waste; breeding grounds for obnoxious bacteria.
Is something being done about it?

Yes. The Government of Tamil Nadu will divert the proceeds from the sale of raffle tickets for building water supply systems. Bringing drinking water to 4,000 villages, all over the State.

This scheme is already in effect and will continue in full strength, until such time nobody—least of all children like these—walks far to get a pot of water.

More prizes for more people!

2 first prizes of Rs. 50,000 each
3 second prizes of Rs. 10,000 each
5 third prizes of Rs. 5,000 each
and other prizes including additional consolation prizes in each series.

Totally 2,655 prizes amounting to Rs. 3,90,000 in each series.

There are 3 series (AI, AJ, AK) for this draw.

Date of Draw: 19-10-77
Cost of ticket: Re. 1 only

DIPR/4026/77

Buy a Tamil Nadu Raffle ticket—you'll make someone live better.

Issued by the Director of Tamil Nadu Raffle, Madras 600 002

In Defence of Bharati's Songs

S. SATYAMURTI

I am not exagerating the feeling of any Member of this House who is a Tamilian, or who knows Tamil, or who is a patriot, or who is not afraid of patriotism, when I say that one wants no arguments to support this vote of censure on the action of the Madras Government in having acquiesced in or directed the City Police to seize what will remain, in spite of the Madras Government's activities, so long as the Tamil language lasts or a single Tamilian exists, as the most priceless and patriotic songs in that great language.

"Sir, late Subrahmania Bharati was a man on whose tongue the Goddess Saraswati can honestly be believed to have danced the dance of patriotism. If he had been born in any free country, why in any country of the world except India, that man would have been made the Poet Laureate of the country, would have been given honours and titles by a Government which knows how to respond to the feelings of the people, and would have lived and died among the most honoured of the nation. But Sir, being the slave country that we are, he had to live as an exile in Pondicherry, enjoying the hospitality of the French Government and die a broken wreck, because he found no use for himself under the auspices of this Government. But Sir, martyrs and patriots before him have gone to the same fate. Subramania Bharati lived and died a patriot. I want to repeat, Mr. President, that so long as the Tamil language lasts, you may confiscate all the copies which exist-even as our sacred Vedas were handed down from generation to generation, for aeons, without a single piece of writing, by the memory of our ancient Hindu ancestors, even as Macaulay was able to repeat every line of Milton's 'Paradise Lost,' I have no doubt that, so long as a single Tamilian lives, these songs will reamin the priceless heritage of the Tamil race: I can inform this House, Mr. President, after this ill advised action of the Government, we are starting a propaganda for getting by heart every song of Subramania Bharati, and although the Hon. the Law Member and the Hon. the Home Member may between them confiscate every printed word of those patriotic songs, human ingenuity has not yet invented any machinery which is able to 'confiscate' thoughts and memories. Thoughts and memories will flourish, and wherever the Hon. the Law Member or the Home Member goes they will hear only these songs sung, and they will have to apply cotton wool to their ears if they want to save themselves from being polluted by hearing these brave and patriotic songs.

"Sir, the origin of this action is not even complimentary to this Government. This Government is here governing the bulk of the Tamilians in whose language these poems are written. These poems are a quarter of a century old. For nearly twenty five years, these songs have been sung throughout the Province, and I appeal to my Hon. friend the Chief Minister who, I know, is a very good student of Tamil whether he has not heard and enjoyed these songs, whether he has not heard and felt his pulse beat quicker, and his blood run warmer in his veins, when these magnificent, soul-stirring songs were sung. I am sorry my two other friends who crossed the floor are not here. If they were here, they dare not contradict me when I say that some of the election methods by which they came to this very Council, which gave them the opportunity to cross the floor and become Ministers, where these patriotic songs sung by boys and girls in public meetings. Sir, do you know that in this Tamil country, if you want to get up a magnificent meeting, if you want to sustain the interest of the audience, the most usual method is to get these songs sung? I wish I had the voice to sing a few of these songs here, which will melt even the stony hearts of the Hon. the Law Member and the Home Member. I will read some of them, and even a prosaic reading of these songs will melt the hearts of these people.

"Then, Sir, what are these songs? I am not going to dwell on their seditious nature, under your ruling. I merely want to tell the House these are songs with the like of which one is familiar in English

---

Shri S. Satyamurti (1887-1943), popularly known as the 'Fire brand of South India' qualified himself at an early age for legal profession, but opted for a political career. In 1919 and 1926 he went to England and delivered speeches advocating the cause of India's freedom.

About half a century back, when he delivered his maiden speech in the Madras Legislative Council, spearheading his emergence as an able Parlimentarian, it was quite appropriate that he championed the cause of school children who were being denied the inspiration of Subrahmania Bharati's songs.

Five years later, in the same House, Shri Satyamurti returned to the theme when the police seized the copies of Bharati's songs. Reproduced here are some excerpts from the fiery speech of the renowned orator who moved an adjournment motion regarding the seizure of copies of Bharati's songs by the poilce.

Arrested in 1942 for participating in the Quit India Movement, Shri Satyamurti died while under detention. Let us remember this great champion of freedom also, when we pay our homage to the great national poet, Subrahmania Bharati.

K. R. Srinivasa Iyengar has said : "Gandhi had neither the time nor the inclination to cultivate the so-called art of writing . . .No straining after emphasis, no colour, no irradiating brilliance. Yet they are Gandhi's words, and their very bareness constitute their strength. This may be compared to Edward Thompson's statement : "Perhaps his unsurpassed command of English idiom comes partly from this perfect control over his mind. The hardest thing in our language for a foreigner is in our prepositions. I have never met an Indian who had mastered them as Gandhi has.'

With the start of Satyagraha in India, with vast masses of men and women involved in a deadly struggle, Gandhi wrote in "Young India" "I long for freedom from the English yoke. I would pay any price for it. I would accept chaos in exchange for it. For, the English peace is the peace of the grave. Anything would be better than this living death of a whole people. This satanic rule has well-nigh ruined this fair land materially, morally and spiritually."

"My ambition is much higher than independence. Through the deliverance of India, I seek to deliver the so called weaker races of the earth from the crushing heels of western expectation in which England is the greatest partner. India's coming to her own will mean every nation doing like-wise.

In an article in Navajivan before he took it over, he outlined his diffidence and limitations in an article titled "Our Aim" At the same time, he stated that a newspaper would be the best instrument by means of which he could place his doctrine of Satyagraha before the people of India.

"For me, Satyagraha is not a mere copy book maxim x it is my very life. To me nothing but truth has any interest. I am convinced that the country can never benefit by untruth. The more we strive to realize an ideal, the farther it recedes. To pursue it the more vigorously is the only object worthy of endeavour. We may stumble and fall, but shall rise again; it should be enough if we did not run away from the battle."

The great satyagraha movement that Gandhi was to launch in India was not far ahead. There was no room in his philosophy for violence in any form. He wrote in Young India "No country has ever risen without being purified through the fire of suffering. The mother suffers so that her child may live. The condition of wheat-growing is that the seed grain should perish. Life comes out of death. Will India rise out of her slavery without fulfilling this eternal law of purification through suffering" . . . .Progress is to be measured by the amount of suffering undergone by the sufferer. The purer the suffering, the greater is the progress."

Many of Gandhi's writings are deeply concerned with the ageless querry, "What is Satya ?" and has provoked numerous answers. Gandhi's answer is that truth is what the voice within tells you ; however, since that voice differs according to the evolution of individual minds, "What may be truth for one may be untruth for another." The key-point is disciplined conscience. Lack of it brings about untruth. "Everyone should realize his limitations before he speaks of his inner voice."

Satyagraha . . . excludes every form of violence, direct or indirect, veiled or unveiled, and whether in thought word or deed. It is a breach of Satyagraha to wish ill to an opponent. The right of Satyagraha is for the strong in spirit, not the doubter or the timid. Satyagraha teaches us the art of living as well as dying. Birth and death are inevitable among mortals. What distinguishes man from the truth is his conscious striving to realise the spirit within."

The Harijan, a weekly was devoted mainly to the welfare of "the man of God." It was a challenge to the orthodox Hindus. "The abuses that they are hurling" at me are wonderfully refreshing, Gandhi wrote. "The more I ignore the abuses, the fierce they are becoming . But it is the death-dance of the moth round a lamp. . ."

The country was ablaze with the "Quit India" call. Gandhi wrote an article in Harijan, "To every Briton," in which he made a passionate appeal to the British to retire from their Asian and African possessions. In the first week of August, 1942, he told the delegates to the Congress Working Committee.

"Here is a mantra, a short one that I give you. You may imprint it on your hearts and let every breath of yours give expression to it. The mantra is "Do or Die." We shall either free India or die in the attempt ; we shall not live to see the perpetuation of our slavery. Every true Congress man or woman will join the struggle with an inflexible determination not to remain alive to see the country in bondage and slavery. Let that be your pledge."

A correspondent complained that the English edition shall be stopped ; it was getting more importance than the Indian language editions. Gandhi replied : "I cannot stop the English edition . . My relations with the west are increasing every day . . .I cannot cast out the English language from my small store of knowledge. I do not wish to forget that language, nor do I wish all Indians to give up or forget it... Its international position cannot be disputed.

He went on writing for the Harijan upto almost the last day of his life, January 30th, 1948. Rajkumari Amrit Kaur who had been associated with the Harijan for many years wrote :

"To those of us who had the privilege of working with Gandhiji every week when Harijan was being edited by him, it seems strange to be writing for its columns without submitting the same to the searching gaze of the prince of journalists. The care and thought he bestowed on whatever he himself wrote, the eagle eye with which he vetted every word of what even a man like Mahadev Desai wrote : "his insistance on right expression, on adherence to truth where facts were concerned, on the necessity of not using one word more than necessary, his appreciation of a good literary style, his ruthless weeding out of much of wholesale discarding of what one thought was good, all these are never to be forgotten lessons. But the remembrance of them makes one pause and wonder whether any one of our poor efforts can ever come up to the high standard of journalism which was Gandhiji's incomparable contribution to public life."

Courtesy : **N. B. T.**

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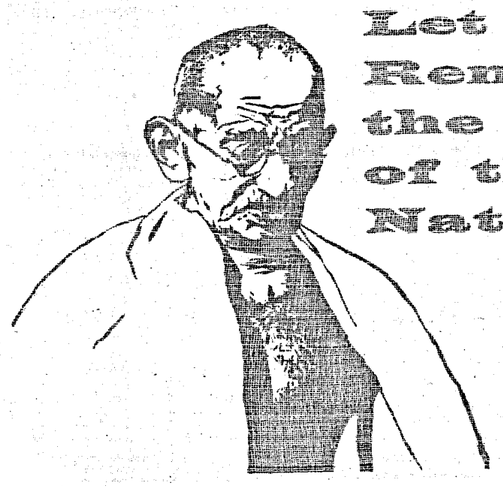
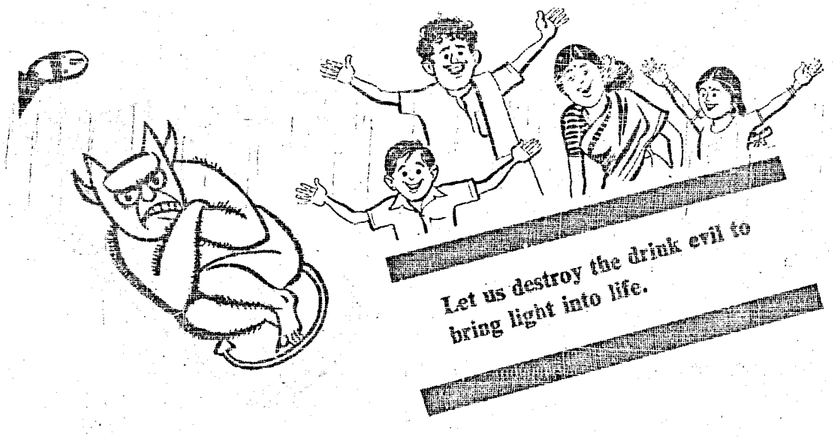


Let us Remember the Father of the Nation

"Drink is a Social evil. It reduces man to the level of a beast. It is our duty to take steps to erradicate this evil."

—MAHATMA GANDHI



GANDHI

The Writer

No one has used the stuff of words on a massive scale has been as passionately purposive as Gandhi. No one has used words with such intense-longing to be down to earth on the one hand and, paradoxically, to reach for the stars with the other.

He has plainly stated his objective "I write as the spirit moves me at the time of writing. I write to propagate my ideas. The reader can have no idea of the restraint I have to exercise . . . in the choise of topics and my vocabulary. It is a training for me. It enables me to peep into myself and to make discoveries of my weaknesses. Often my variety dictates a smart expression or my anger a harsh adjective. It is a terrible ordeal but a fine exercise to remove these weeds."

A writer could be illimitably more than the words he spins out. And the words could be a vast deal more meaningful than their stark face value. A writer is his thought, his dream, his dedication. Provided, of course, that he gives all these an outer habitation in terms of language. That is a compulsion he lives for. Without that he could be an idealist, a man of wisdom, a seer, but certainly not a writer.

Gandhi set down in clear-cut lucid prose in his mother tongue Gujarathi, in Hindi and in English. It was inevitable that he wrote for more in English than in Indian languages— every shade, every nuance of his thought. He laid bare each passing phase of his inner development and the mainsprings of motivations behind every significant deed. He grew within himself all the time, year after year ; decade after decade, and naturally there had to be contradictions in what he said. The unabashed self-stripping, the uninhibited revelation of inner frailties and soul storms, the deadly struggle to reach out towards truth at any cost — all these mark not only the pages of the brilliant Autobiography he wrote (aptly calling it, "The story of My Experiments with Truth"), but also a large area of his enormous literary output.

Gandhi's English wordage alone exceeds two million. Most of his work appeared in Young India, the weekly journal he founded in 1919, filling it mainly with the product of his own pen ; and besides this was his Gujarati weekly Navajivan. Gandhi founded the Harijan in 1933, and this was also a weekly. Harijan was issued in English and several regional languages.

As far back as 1908, Gandhi wrote Hind Swaraj, or Indian Home Rule. Neglected when first published, it attracted the highest acclaim thirty years later. For instance John Middleton Murry, reviewing a reprint of the book stated: "The greatest Christian in the modern world is Gandhi : and Hind Swaraj is (I believe) the greatest book that has been written in modern times."

The "Indian Opinion" was meant to voice the feelings of the Indians in South Africa and to improve their lot. "Indian Opinion" was a mirror of part of Gandhi's life. "Week after week, I poured out my soul in its colouns. and expounded the principles and practice of Satyagraha as I understood it." During the ten year span 1904-1914, there was hardly any issue of the journal which failed to carry a contribution from his pen, except when he was in prison. The best compliment that Gandhi paid to it was when he declared that Satyagraha would probably have been impossible without "Indian Oopinion."

By
Bhabani Bhattacharya

"Is this monstrous injustice to be really done ?" he asked, in regard to the anti-Indian regulations which were steadily growing in number. "Even at the eleventh hour . . . we cannot abandon hope that the better nature, the truer self, of our white brothers will yet assert itself." He kept on repeating this hope in numerous editorials until atlast exasperated, he stated: "Perhaps in the Transvai, people are living in the Middle Ages."

The editorials and the columns of letters apart, it carried several features of popular interest, biographical sketches of eminent men and women in many parts of the world were used.

The self-descipline he tried to improve on his countrymen in South Africa-he never spared hard words in regard to their drawbacks — was a prelude to the reorientation of the paper in later years as a mouth piece of the passive resisters and a weapon in the Satyagraha struggle. Meanwhile, he kept his readers informed about happenings in India and gave his support to every progressive movement. He wrote in strong protest against the partition of Bengal and encouraged the boycott of foreign goods. He supported the adoption of "The Heroic Song of Bengal, "Bande Mataram, as India's national anthem ; calling it a "passionate prayer."

Gandhi's letters, thousands—written to people of all kinds, the great and the humble, old and young and even children ; selectively issued in several collections, they are a mirror of several facets of their writer's personality.

The English weeklies Gandhi founded and edited in India had a somewhat limited circulation. Yet, let it be recorded that at one time the sale of Young India went upto 40,000 copies a big figure in those days in Indian journalism. Navajivan was no less popular.

Young India and Harijan commanded indirectly a varied, eager and truly massive readership all over the country. It is astounding that the flow of Gandhi's contributions to his periodicals never slackened through the long years ; he kept up the quantity as well as the qualitative standard even in the crucial periods when the country was ablaze with a national conflagration, and the obligation to direct countless masses of people engaged in a "Do or Die" struggle imposed on the Supreme Leader the heaviest strain and stress. Writing in Young India, he stated "I have taken up journalism not for its own sake but mainly as an aid to what I have conceived to be my mission in life. My mission is to teach by example and precept under severe restraint the use of the matchless weapon of Satyagraha."

The fruition of those historic decades in India was the outcome of seeds sown far beyond the seas in the settlement named Phoeneix.

Gandhi the writer grew up surprisingly fast in the years preceding his imprisonment in 1922. His spectacular evolution in the realm of ideas in that period is understandable. It is not easy, however, to explain the superb literary power his pen achieved. He was too busy to read books that could help. To cultivate a capacity for self expression by a variety of time consuming processes was beyond his purview. And he was certainly not a born writer.

The Indian opinion had helped him mould a business-like prose style ; simple, straight forward, orderly, precise ; well-reasoned, lucid, adequately condensed and above all else, single-minded, persuasive. But Young India, which maintained and strengthened all these elements, added to them something new, something that made Gandhi's writing power-packed. This happened with amazing speed. His economy in words was his reflection of his fast growing inner restraint ; he could use pithy sentences that contained the very essence of what he wanted to say. The most significant development, however, was that he now wrote impassioned passages that could set the reader's blood afire. Anger was beyond his range of emotions ; yet, sometimes the words he used could spring into action as a chastising whipcord.

The view of an American admirer, J. H. Holmes, may be quoted in this context :

"Gandhi's literary achievement is the more remarkable in view of the fact that he was never a literary man — seldom if ever, in his writings did he rise to heights of eloquence and beauty — Gandhi's interests were never aesthetic, but rather pragmatic. He had no desire, no ambition, no time, to be an artist. So he wrote with disciplined simplicity, seeking only to make himself understood. The result was the one most important quality of literary art — namely — clarity. Gandhi mastered his medium. He wrought a style which was perfect" for his purpose of communication.

The style that Gandhi evolved in both Gujarati and English was all his own. Indian writing in those days was marked by pomposity. Pomposity was reckoned a literary grace. Gandhi's writing was a sharp departure from "ornateness and artistry," the current literary ingredients, and whatever art there was in it was "artless." He simply expressed what he felt deep down in his heart, and the words took good care of themselves.

The net result of literary assimilation amid the new-found abundance of leisure could not fail to give added strength to the familiar elements in his way of self expression and, at the same time, contributed unfamiliar ones. Critics have seen something biblical in his English. That is true only of what he wrote in a particular frame of mind. Comparisons with Ruskin and Thoreau are likewise, apt in a limited sense. His pen faithfully followed his changing moods. But one thing is certain ; he was never at a loss for the right word. His mastery of simple, direct, lucid English and the invariably high standard of his massive productivity strongly influenced the writing of the time. Many journalists tried to emulate the Gandhian style. Indian writing was already getting purged of the ample decorativeness of the old Macardayan diction, long in vogue. Gandhi hastened this process.

ERADICATE UNTOUCHABILITY

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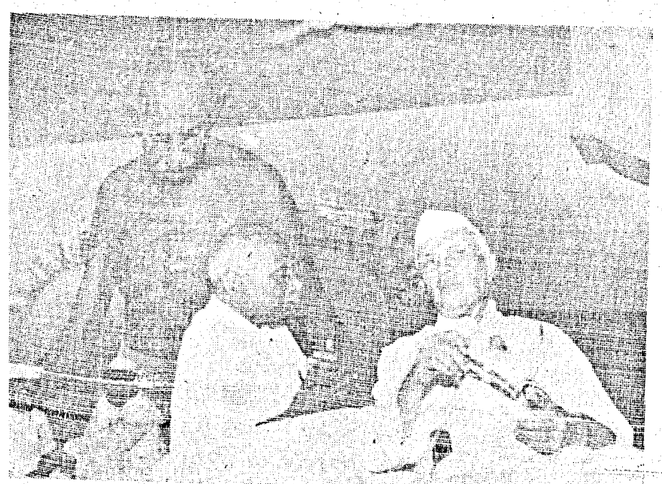

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Tamil Arasu

Vol: VIII NOVEMBER 1977 No. 5

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Tamil Arasu

NOVEMBER 1977 30 P.

The two Houses of Parliament, the Lok Sabha and the Rajya Sabha which came into existence in 1952 after the first general elections, complete 25 years.

On this occasion, the Exhibition Division of the Directorate of Advertising & Visual Publicity, the Ministry of Information & Broadcasting in collaboration with the Lok Sabha Secretariat organised an exhibition entitled "Parliament Through the Years". The exhibition was held for 10 days at Kalaivanar Arangam, with the active help and cooperation of the State Department of Information & Public Relations, Government of Tamilnadu.

It was inaugurated by Thiru R.M. Veerappan, Minister for Information & Tourism, Government of Tamilnadu, on 18-10-1977.

The exhibition through suitable visuals, photographs, charts and rare exhibits depicts the history of the constitutional reforms during the pre-independence period 1857-1947, the evolution of Constitution of India which brought into existence the Lok Sabha and the Rajya Sabha and functioning and achievements of these Houses during the last 25 years.

The finality of a Constitution for India was the outcome of a sustained struggle waged by the people for the liberation of their country. To serve as a background, glimpses of such events of freedom movement have been included in the Exhibition which relate to the 1857 mutiny, agitation against Rowlatt Act, Martial Law, Jallianwala Bagh Massacre, Salt Satyagraha and Quit India Movement, 1942.

Right from 1861 when for the first time, non-official members were nominated to Governor General Council, fight for self governing rights also continued inside the chamber. This resulted in introduction of various constitutional measures taken by the British Government in the form of Council Acts. The exhibition displays the portraits of illuminaries who were members of the Central Legislature and played an active role.

A section of the exhibition is devoted to Constitution making which highlights the views expressed by the eminent leaders actively associated with this great task. The portraits of such leaders have also been displayed in this section. Important pages from the Constitution Book such as signatures of the members of the Constituent Assembly and fundamental rights beautifully mounted are an added attraction of this section.

Photographs of the important functionaries of the Government and Parliament under the Constitution such as Presidents Vice Presidents, Prime Ministers, Speakers and Deputy Speakers of Lok Sabha, Vice Chairmen of the Rajya Sabha and leaders of both the Houses find a place in a separate section of the exhibition.

Functions of Parliament and its various committees and their achievements during the last 25 years have also been highlighted through photographs and charts. Visits of Indian Parliamentary delegations abroad and Foreign Parliamentary delegations to India have also been exhibited.

Other notable features of this exhibition are scenes of Lok Sabha elections held so far particularly the sixth general elections which brought a peaceful political change through the ballot.

The exhibition ends with the glimpses of people engaged in building up a new India, economically viable and free from exploitation.

PROGRESS OF EDUCATION

The outlay under "Education" in 1977-78 is Rs. 160 Crores, which represents 24 per cent of the total expenditure on Revenue Account namely Rs. 663 Crores. It constitutes the highest single component in the Budget. The expenditure, on education has been steadily rising from Rs. 123 crores in 1975-76 to Rs. 136 crores in 1976-77.

In December 1976 the government announced their final decision to implement the new pattern of 10+2+3 in Tamil Nadu. The Government have also decided that the 10 years of School Education will be divided into 5+3+2 (*i.e.*, under the new pattern the Elementary Schools will have the standards 1—5, the Higher Elementary Schools will have standards 1—8 or 6—8 ; and the High Schools will have standards 1—10, 6—10, or 9—10). It will be ensured gradually that standard 8 (be it in High Schools or Higher Secondary Schools) is handled by teachers better qualified than now.

A Board of Higher Secondary Education under the Chairmanship of the Director of School Education was constituted in July 1976 to be incharge of +2 stage of the 10+2+3 pattern of Education. Expert Committees were also constituted in September 1976 for framing syllabus for +2 stage. The draft syllabi finalised by the Committees have also been published in the Gazette in March-April, 1977 inviting comments from educationists and the general public. The final version of the syllabi will be finalised after considering the suggestions received and thereafter the work of preparing text-books for the +2 stage taken up.

SCHOOL EDUCATION

School Education accounts for the bulk of the Education Budget. Out of the Rs. 160 crores under Education Demand in Budget Estimate 1977-78, about Rs. 130 crores is for School Education.

Thiru C. ARANGANAYAGAM

Minister for Education

ELEMENTARY EDUCATION

Enrolment :

91.7 per cent of children of age group 6—11 and 54.4 per cent of children of age group 11—14 have already been enrolled in schools in Tamil Nadu. About 2 lakhs under these age groups are likely to be enrolled in 1977-78. The total number of pupils who studied in 1976-77 in the 33,036 elementary schools was 63.13 lakhs and the number of teachers, 1,78,879 ; and the teacher pupil ratio worked out to 1 : 36.

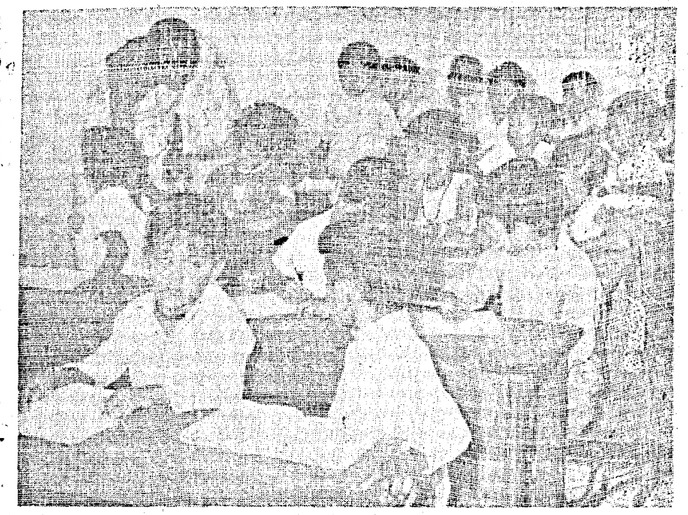
During 1977-78, direct admissions from private study or study in unrecognised schools has been permitted in any standard up to standard 8 (instead of standard 6 in the past.)

Qualitative Improvement

With a view to improving the teaching of Science in Elementary Schools the syllabi has been revised and grants are also given for the

purchase of Science equipment and teaching aids, at Rs. 300 for each elementary school and Rs. 1,000 for each Higher Elementary School. So far, 12,620 elementary and 3,680 Higher Elementary Schools have been benefited. During 1977-78 these grants will be given to 150 higher elementary schools.

Under the project for improving science teaching in elementary schools with UNICEF assistance the UNICEF has so far supplied free of cost Science kits to 2,300 elementary schools (cost Rs. four lakhs) and to 1,830 higher elementary schools cost Rs. 20 lakhs). Further, under this scheme about 2,600 elementary school teachers and 3,690 higher elementary school teachers have been given In-service Training (20 days for elementary school teachers and 42 days for higher elementary school teachers) at a cost of about Rs. 14 lakhs, of which about half was borne by UNICEF.



Crafts are taught in elementary schools for developing the technical skills and creative talents of pupils and enabling them to learn some useful crafts relevant to the needs of the locality. Most higher elementary schools are already having either full-time or part-time Craft Instructors. During 1977-78, 100 posts of part-time Craft teachers in higher elementary schools, will be upgraded into full-time posts.

Midday Meals Scheme

The provision of Midday Meals in all elementary schools has a major role in promoting and retaining enrolment in the schools. One third of the total number of pupils of these schools, who come from the poorest sections of the population, benefit under this scheme. About 19.80 lakhs of poor pupils in standards I to 8 of elementary and higher elementary schools receive midday meals, including the 1.60 lakhs fed in Harijan Welfare Schools run by the Harijan Welfare Department. The provision for the Midday Meals Scheme in the budget for 1977-78 is about Rs. 4.5 crores. The State Government grant for the Midday Meals Scheme is paid at the rate of 10 paise per pupil per day for 200 days and the local body contribution is 5 paise per pupil per day for 200 days. This is supplemented by about 20,000 tonnes of food received every year as free gift from the CARE organisation. (The School Education Department is moving through its pipeline not only the share of CARE food consumed by it for the Elementary School Midday Meals Programme (about 20,000 tonnes per annum) but also the CARE food (about 10,000 tonnes per annum) consumed by the Pre-School Nutrition Programmes implemented by the Departments of Health and Family Welfare, Social Welfare, and Rural Development and Local Administration Departments, and the Workers Nutrition Programme of the Labour Department.)

The three districts of Chengalpattu, South Arcot and North Arcot are covered by the Central Kitchen Programme, under which meals are cooked in modern ovens under hygienic conditions and transported to the surrounding schools in closed vans. 97 Central Kitchens are functioning in those districts. They were established with CARE assistance at a total cost of about Rupees two crores. They are serving about four lakhs of pupils in those three districts. These kitchens are having about 224 tempo vans gifted by CARE for transporting the food from the kitchens to the schools. In order to reduce fuel costs, these petrol vans are, when they become wornout, replaced by Diesel vans on a phased programme. Eight vans will be so replaced in 1977-78. A workshop for serving, repairing and maintaining these vehicles, as well as the cooking equipments at the kitchens, constructed with CARE assistance at a cost of Rs. 15 lakhs, is functioning at Vikravandi in South Arcot district.

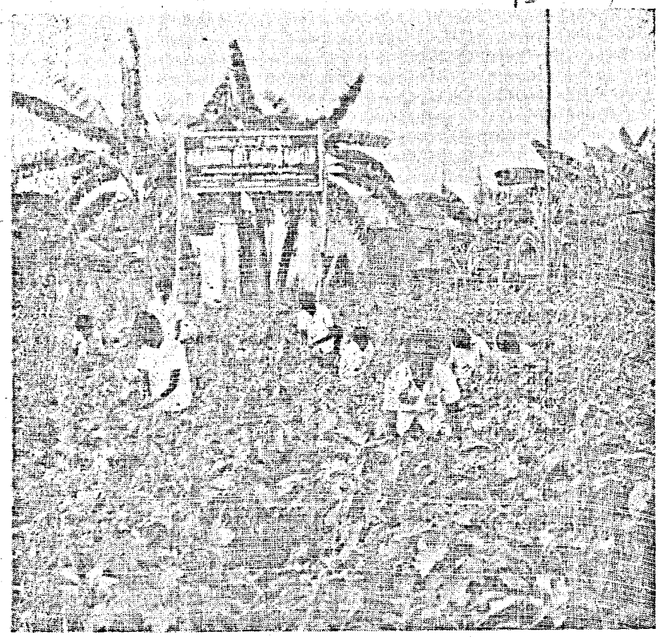
To facilitate proper storage of the food stuffs required for this programme, eight regional godowns and a Central godown at Adayar have been constructed in Tamil Nadu with the help of the CARE organisation at a cost of about Rs. 30 lakhs.

Free Supply of Books

Poor pupils receiving Midday Meals in standards I to III get text books free and poor pupils in standard I get slates also free. More than 12 lakhs of pupils get this free supply every year. From the year 1972-73 the cost of text books is met by the Tamil Nadu Text Book Society from its funds. The scheme costs the Society about Rs. 25 lakhs every year. About Rs. three lakhs will be spent from State Government funds in 1977-78 mainly for the free supply of slates to pupils in Standard I.

Elementary School Buildings

Grants are given to Local Bodies and managements of aided schools towards the construction of school buildings. From 1974-75 the maximum grant payable for an elementary/higher elementary school building is Rs. 10,000/17,000 subject to a minimum contribution by the management of Rs. 5,000/8,000. In 1977-78 provisions of Rs. three lakhs for grants to Municipal and Aided Elementary Schools and Rs. nine lakhs for expenditure on Government Elementary School buildings have been made.



The provision made in the Community Development Budget for grants to Panchayat Union Elementary School buildings in 1977-78 is Rs. 54 lakhs.

Local Body Elementary Schools

Out of the 33,000 elementary schools in Tamil Nadu, about 29,000 are in Panchayat Union areas. Out of the 29,000 about 22,900 (about 19,800 elementary schools plus about 3,100 higher elementary schools) are run by Panchayat Union Councils. Under the revised pattern of financial assistance to Panchayat Union Councils for elementary Education, 4/9 ths of the local cess (levied at 45 paise per rupee of land revenue) continues to be paid to the Panchayat Union Elementary Education Fund. The Government are also giving a grant calculated at Rs. 6 per head of population in each block, based on the 1971 census. The balance of expenditure on Elementary Education is shared by the Government and the Panchayat Unions according to the revised classification of Blocks.

The number of Elementary Schools run by Municipalities and the Corporations of Madras and Madurai is about 1,450 (1,060 elementary plus 390 higher elementary). The Government sanction 50 per cent of the Education Tax realised by a Municipality as Government contribution. They are also meeting the entire net deficit in the Municipal Elementary Education Fund Account except in the case of the Madras Corporation.

SECONDARY EDUCATION

Out of 23.46 lakhs of children in the Age group 14—17 in Tamil Nadu in 1976-77, 34.1 per cent namely 8.02 lakhs had been enrolled. There were 72,800 teachers and 17.99 lakhs of pupils in the 3,020 High Schools in the State in 1976-77. During 1977-78, 26 High Schools have been newly opened (Government 18 and Aided 8).

The revised syllabus provides for the study of science as three separate disciplines, *i.e.*, Physics, Chemistry and Biology from Standard VI onwards. Under the scheme for grant-in-aid to high schools for the purchase of science equipment and setting up of science laboratories a sum of Rs. 55,000 is spent on Science Laboratory for each Government High School selected under the scheme. (Rs. 37,000 for building and Rs. 18,000 for equipment). The non-Government Schools each get a grant of Rs. 40,200—out of which Rs. 18,000 is for equipment (purchased and supplied by the Director of School Education himself) and the balance of Rs. 22,200 is for the laboratory building (the building grant being given at 60 per cent of the cost or Rs. 22,200 whichever is less). By 1976-77, only 892 High Schools had been covered under this scheme (including 14 covered in 1976-77). The outlay on this scheme has been stepped up to Rs. 25 lakhs in 1977-78 and 50 High Schools will be covered in 1977-78.

There are now 36 Mobile Science Laboratory vans and six more will be added during 1977-78 so that out of the 48 educational districts in the State, 42 will each have one van for catering to the needs of Science teaching in rural High Schools, not yet provided with Science Laboratories.

With a view to improving library facilities in High Schools suitable library books are purchased and distributed to schools. In 1977-78 a large provision of Rs. 5 lakhs, has been made for this scheme, as against only one lakh in 1976-77.

During 1977-78 five 16 mm sound projectors will be supplied as Audio-Visual Aids to deserving Secondary Schools and the State Film Library will be enriched by buying educational films and filmstrips for Rs. 50,000. Educational Television has been introduced in schools in Madras City and neighbourhood.

High School Buildings

A provision of Rs. 7 lakhs has been made in 1977-78 for grants to Municipal and Aided High Schools for putting up buildings besides a provision of Rs. 13 lakhs for new building works for Government High Schools.

Scholarships

School education in Tamil Nadu is free at all stages. Rural talent scholarships are awarded from 1971-72. Under the scheme, scholarships are awarded every year to two students in each Panchayat Union. The scholarships are tenable for the entire school course. The value of the scholarships when the student is studying in selected high schools, approved for the purpose, is Rs. 1,000 per annum for each boarder and Rs. 500 per annum for each day-scholar. Pupils who get these scholarships but are studying in ordinary schools of their own choices

are allowed Rs. 150 per annum. The total number of scholarship holders in any year is about 2,000 including renewals. Besides this, generous educational concessions continue to be given to the children of the Burma repatriates, Ceylon repatriates, Ex-service and Defence Personnel, Scheduled Castes, Scheduled Tribes, Goldsmiths affected by the Gold Control Act, Political sufferers.

Mobile Medical Vans

The scheme of medical inspection of High School pupils through Mobile Medical van is now in operation in all districts except Chengalpattu, Thanjavur and Kanyakumari. The scheme is likely to be extended to those three Districts also in due course.

Matriculation Schools

There are 31 Matriculation Schools (with a strength of 31,000 pupils and 1,100 teachers) which levy fees and use English as the medium of instruction. They do not get any Government grant. They were formerly affiliated to the Universities of Madras and Madurai. From December 1976, they have been transferred to the control of the Director of School Education.

CURRICULUM, SYLLABUS AND TEXT-BOOKS

Revision of School Syllabus

From 1972-73 revised syllabi based on ten year schooling was introduced gradually in schools and by 1976-77 standards 1—10 had been covered. In Anglo-Indian Schools revised syllabi had been introduced for all subjects in Standards 1 to 10 by 1976. To enable teachers to handle the new Mathematics and enriched science under the new syllabus, a large programme of in-service training for Maths and Science teachers was conducted during the period 1972-73 to 1975-76 covering 60,000 teachers from elementary schools, 30,000 from higher elementary schools and 12,000 from High Schools.

Under the revised syllabus there is no room for Electives (taught formerly in Standards 10 to 11) and hence Electives were abolished in Standard 10 from 1976-77 and Standards 10 and 11 from 1977-78. The Government have however ordered that none of the 3,200 or so posts of Elective Teachers should be retrenched, but should be continued by redeployment to Standards 8 to 11 of the same school or to other schools, within the approved teacher-pupil ratio. Hence there has been and will be no retrenchment merely because of the abolition of the Electives.

Similarly the Government have Ordered the continuance in Service in 1977-78 of all the 1,541 teachers engaged in teaching the Bifurcated courses (which are taught only in standard 11 in 1977-78) though they have a reduced workload. Orders will issue in time on the future of these bifurcated courses and their teachers, from 1978-79 onwards.

Recently the view has been expressed from many quarters that the new mathematics in the revised school syllabus need not be inflicted on all students. The Government are examining what are the revisions if any to be made in the Mathematics curriculum.

Comprehensive High School Courses

The Kothari Education Commission recommended the concept of comprehensive High Schools with a view to vocationalising secondary education. During 1974-75 and 1975-76 about 70 High Schools were upgraded as comprehensive High Schools by providing for the teaching outside the school hours of useful vocational subjects like the following :

Radio-repairing, Electric motor rewinding, Motor Mechanic, Agricultural Engineering, Salesmanship, Tailoring etc.

These courses will be continued in 1977-78.

School Text Books

The Tamil Nadu Text Book Society constituted in 1970 is in-charge of producing and distributing the Nationalised text books for schools. It has done good work in producing books of high quality at reasonable prices. The production programme for 1977-78 envisages the printing of about 2.5 crores of copies of school books (of the face value of about Rs. 3.5 crores).

During the President's Rule in 1976-77 an extensive revision of the school text books, especially for Tamil, English and History had been made. Among others, lessons on Periar Ramaswami (of which one was by Arignar Anna) had been removed from the text books, for standards 8 and 10. Immediately after this Government came to power, we have ordered the restoration of the lessons and

printing and distribution of the lessons as addenda to the books distributed already.

The publications of the Text Book Society are distributed through 47 wholesale co-operative stockists and about 1,600 registered retailers all over the State. This organisation has ensured that the text books are available at fixed prices well in time to the school students.

TEACHER TRAINING

There are at present 74 Teacher Training Institutes (28 Government —46 Aided) in this State containing facilities for turning out Secondary Grade trained teachers (excluding 3 Nursery, 2 Pre-Primary and one Anglo-Indian Teachers Training Institutes). In view of the large extent of unemployment among trained teachers prevailing for the past many years, admissions for teacher training are made only in alternate years and that too in reduced numbers. In 1977-78 about 2,700 candidates have been admitted at the rate of 35 in each institute.

There are now 9 English Language Teaching Centres. The total number of teachers trained during the period from 1967-68 to 1975-76 is 13,000 in these centres. The scheme will be continued in 1977-78 also. Longterm courses of 3 to 5 months for Graduate Trained Teachers are conducted every year at the Regional Institute of English, Bangalore. About 536 Graduate Trained Teachers have attended such courses at the Institute so far.

With a view to provide qualitative improvement in Government Teacher Training Institutes, B.T. Assistants are deputed for M.Ed. Course every year. Eighty teachers have been deputed so far and 20 more will be deputed in 1977-78.

SCHOOL EXAMINATIONS

Till February 1975 the Director of School Education was the ex-Officio Commissioner for Government Examinations. From February 1975, a separate Director of Government Examinations has been appointed (He is also the Director, State Council of Educational Research and Training). He is assisted by a Secretary, Additional Secretary, Personal Assistant and a Senior Accounts Officer at the headquarters. About 24 Examinations are conducted every year, some of them annually and some twice in a year. The S.S.L.C. Public Examination is the major examination and the March session is conducted in about 1,200 centres and the October session in about 150 centres. The number of candidates who appeared for the March 1977 examination was 2,89,452. The percentage of passes is 55%. The computerisation of S.S.L.C. results has greatly facilitated and speeded up the work.

All persons who have completed the age of 18 and who possess a pass in Standard VIII in the recognised schools of the State can sit privately for the S.S.L.C. examinations.

At present, for becoming eligible for admission to college courses, one should pass all subjects at one sitting. The board of Secondary Education has recently recommended that this may be modified from March 1978 and a system of compartmental pass allowed (*i.e.*, those who pass the subjects at 2 or more sittings be also eligible for admission to college courses). Orders in the matter will be issued after obtaining the concurrence of the Universities and the Board of higher secondary education.

From 1976, the work of conducting the Anglo-Indian School Leaving Certificate has also been entrusted to the Directorate of Government Examinations. In November 1976, 20,56 candidates appeared for AISLC of whom 1,668 candidates passed the examination.

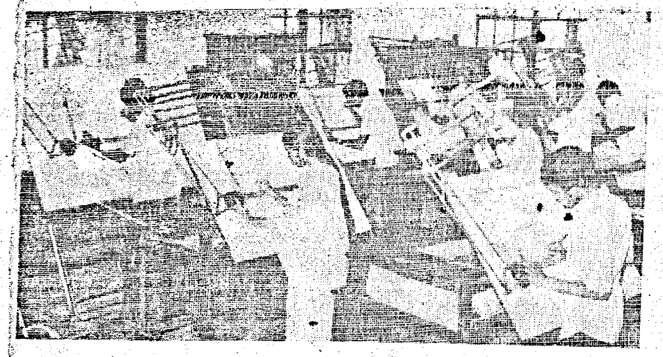
STATE COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

The State Council of Educational Research and Training (SCERT), engages itself in research, innovation and training at all levels of school education. It has organised several result-oriented seminars, training courses and workshops.

A Teachers' Centre has been established in the premises of the SCERT with the co-operation and assistance of British Council. This is a forum for the teachers to meet and discuss academic problems and in short, it acts as a clearing house for mutual exchange of thoughts. Another centre is functioning in Coimbatore, and two more will be opened at Madurai and Tiruchirapalli.

The SCERT has helped in the smooth implementation of the revised syllabus in Maths and Science, by solving the doubts of teachers and by evolving a kit for the Primary Maths teacher. It arranged a workshop in 1976 for the benefit of the teachers of the High Schools run by the Corporation of Madras and helped improve the results for S.S.L.C. in those schools from 21 per cent in 1975 to 36 per cent in 1976.

With UNICEF assistance, the SCERT is implementing two experiments. One is the 'Primary Education Curruculum Renewal Project, under which new curricula are experimented in a few schools. The other is "Developmental Activities in Community Education and Participation" under which combined school, pre-school and Non-formal educational activities are offered in 30 primary schools.



SPORT, PHYSICAL EDUCATION ETC.

Physical Education is compulsory in all Elementary and Secondary Schools. In Standards 6—8 of all higher elementary schools with a Physical Education teacher on the staff and in all High Schools, Physical Education is an Examination subject also. In all these schools, the marks obtained in Physical Education by pupils in Standards 6—10 standards 6—9 in the case of ten year scholars is taken into account for purposes of formulating the principles of promotion to the next higher class.

The State Sports Council and the District Sports Councils render valuable service for promoting sports and games not only among the students but also among the public. The grant to the State Sports, Council is being increased to Rs. 16 lakhs in 1977-78, as against only Rs. 12 lakhs paid in 1975-76. The increased grant will enable the District Sports Councils to encourage sports more vigorously among the rural non-student youth. A scheme is being drawn up to assist educational institutions to provide gymnasia for students and a sum of Rs. 3 lakhs will be spent for the purpose in 1977-78.

Scouts and Guides

The Tamil Nadu Scout Association had a total strength of 1,05,281 boy scouts and girl guides in 1976-77. During 1977-78, 7,000 students will be additionally enrolled as scouts, at a cost of Rs. 60,000. The Tamil Nadu Scouts got the credit of sending the highest number of 650 scouts and guides for receipt of the Presidents Award of Certificates and Badges in 1976.

SCHOOL IMPROVEMENT CONFERENCES

In order to mobilise local effort and initiative in improving the facilities in the schools, 456 school school improvement conferences have been conducted till 1976-77 and assistance in the order of Rs. 14.15 crores has been secured from the public. The programme is being continued vigorously with an accent on science-cum-library improvement. As a result of voluntary effort, 40.46 lakhs of pupils have been given free uniforms at a cost of Rs. 2.66 crores till 1976-77.

WELFARE OF TEACHERS AND NON-TEACHING STAFF OF SCHOOLS

There are at present 2.50 lakhs of teachers working in the schools in Tamil Nadu.

Unlike many other States, in Tamil Nadu, the State Government bear the entire expenditure on the emoluments of the teachers in aided schools also. The expenditure on salaries of teachers on all the schools in the State has gone up from about Rs. 55 crores in 1970-71 to about Rs. 100 crores in 1977-78.

The teachers in aided schools are eligible for the same leave benefits are admissible from time to time to teachers in Government service.

The Tamil Nadu Family Welfare Fund Scheme for State Government employees (under which a sum of Rs. 10,000 is paid to the family of a person dying in harness) is also applicable to aided and Local Body school teachers.

During the year 1976-77 a sum of Rs. 2 lakhs was disbursed to about 500 deserving teachers from the collections under the National Foundation for Teachers' Welfare.

State Awards to teachers of elementary and high schools at the rate of two elementary school teachers and two high school teachers in each educational district continue to be made.

COLLEGE EDUCATION

The provision for College Education has increased from Rs. 11 crores in 1976-77 to Rs. 20 crores in 1977-78. This huge increase is due to (*i*) the adoption of the university grants commission scales of pay and (*ii*) the introduction of the revised pattern of grants to Aided Colleges. In 1976-77 there were 189 Colleges of Arts, Science and Commerce functioning in Tamil Nadu, as against only 24 in 1947. The number of students in Colleges has also increased from about 17,000 in 1947 to 2,03,000 in 1976-77.

New Universities

The University Grants Commission, New Delhi which considered the proposals of this Government for the establishment of two new Universities at Tiruchirappalli and Coimbatore suggested the setting up of a Committee to examine the level of development of the Post-Graduate University Centres at Tiruchirappalli and Coimbatore and the possibility of developing these centres as autonomous institutions. The Government have accordingly constituted in June 1976, a Committee (consisting of the Education Secretary, four Members of Syndicate of the University of Madras and two representatives from the University Grants Commission) for making appropriate recommendations to the Government. On receipt of the Committee's report the Government will take further action to constitute the new Universities as early as possible. During 1976-77, the Gandhigram Rural Institute was accorded the status of a deemed university.

Out of the 189 colleges in Tamil Nadu 51 are directly run by the Government and the remaining 138 are Aided Colleges. Of the total budget of Rs. 20 crores for Collegiate Education in 1977-78 about Rs. 10 Courses will be spent on Grants-in-Aid to the private colleges. The bulk of the students in Colleges at present are studying in Aided Colleges1.47 lakhs in aided Colleges, as against 0.56 lakhs in Government Colleges. Government Colleges are charging lower fees than most of Aided Colleges and are helpful in taking College Education to students who come from the weaker sections of the community, who cannot afford the expense of education in private institutions.

Qualitative Improvement

The emphasis on qualitative improvement is the chief feature of the development of Government Colleges during the Fifth Plan period. Sanction has been accorded for the starting in Government Colleges from 1977-78 of additional Degree Course—four in Science, one in Arts and one in Commerce, beside an additional Post-graduate Course in Science. Laboratory facilities in Government Colleges will be improved in order to promote Science education. A sum of Rs. five lakhs will be spent for the purpose in 1977-78. Rs. one lakh will be spent in 1977-78 on providing adequate number of text books and reference books, including books in Tamil for setting up Text Book libraries in Government Colleges for the use of students who may not be able to buy them in view of high costs of books. For student amenities in Government Colleges like tiffin sheds, canteens and cycle sheds and for improvement of playgrounds, purchase of games articles, etc., Rs. five lakhs have been provided in 1977-78.

Schemes for improving the academic attainments of teachers of Government Colleges are also being implemented. Professors are deputed for resaerch in particular subjects leading them to the Ph.D. Degree. A sum of Rs. 2.28 lakhs has been provided for this purpose in 1977-78. Visiting professors are being appointed on contract basis. Orientation courses are being conducted for the benefit of the teachers who teach through Tamil Medium and 2,915 teachers have been covered so far. A sum of Rs. one lakh has been provided for this purpose in 1977-78.

In the field of continuing education, the Evening Colleges and Correspondence courses are playing an useful role. Evening courses were conducted in Colleges in 1976-77 and about 8,000 students were studying in them. The Madurai University has introduced Correspondence Course for B.A. etc. It has proved very popular with the student community. The rush for admission into the Evening Colleges has eased to some extent after the introduction of the correspondence course.

University Grants Commission Scales

The Government have announced their decision to implement the Revised Universities Grants Commission Scales for the teaching staff in Universities in Tamil Nadu as well as teachers in Government and Aided Colleges with effect from 1st April 1976, monetary effect being extended from 1st January, 1977. This involves an extra cost of about Rs. 7 crores per annum to Government. Formal orders in the matter will issue shortly, settling the matters of detail.

Scholarships and Stipend

No tuition fees are levied in the Pre-University Class. The scheme of free Pre-University education costs the exchequer nearly Rs. two crores per year. Details of the Tamil Medium stipends are given in the relevant section. Besides the above, there are a number of scholarships and stipend schemes, the more important of which are :

From 1974-75, the expenditure on the National Scholarships and the National Scholarships to the children of school teachers is met by the State Government. There are also schemes of scholarships for the Physically Handicapped, for children of the Defence Personnel, for children of Freedom Fighters, for children of Burma and Ceylon Repatriates, etc. Students belonging to the Scheduled Castes/Tribes and Backward Classes get scholarships from the funds administered by the Directors of Harijan Welfare and Backward Classes.

An *Ad Hoc* merit grant of Rs. 300 is paid to all the Scheduled Castes and Sscheduled Tribes students including converts to Christianity (irrespective of the income limit of the parents of the students) who (*i*) obtain 60 per cent and above in the S.S.L.C. Examination ; and (*ii*) pass in first class in the P.U.C. Examination. This grant is to enable them to prosecute higher studies of their choice and is over and above all other facilities and concessions to which they are eligible as students belonging to the scheduled Castes and Tribes. This scheme costs the Government about Rs. 9 lakhs per annum.

Tamil Medium in Colleges

Tamil was introduced as an alternative medium of instruction in the Pre-University (Humanities) from 1966-67, in the B.A., from 1967-68, in the Pre-University (Science) from 1968-69 in the B.Sc. from 1969-70. By way of encouraging the imparting of higher education through the Tamil Medium incentive stipend/book allowance is also paid at Rs. 180 per year for students studying through Tamil medium B.A. and B.S.c. and Rs. 50 per year for those in the Pre-University Class. From the year 1975-76 onwards, the assistance was given in the Pre University and I year degree class in the form of text books, reference books and stationery instead of cash and the mode of giving books instead of cash was was extended to II year degree class from 1976-77 and III year degree class from 1977-78.

It will be seen that the Tamil Medium has not been progressing as well as it should. The Government propose to look into the reasons for this and take steps to popularise the Tamil Medium courses.

The Tamil Nadu Text Book Society has so far published 737 books in Tamil Medium for college students. It is gratifying to note that more and more of these publications are being recommended by

the Universities in the State for use by students as text-books and reference books. The Society proposes to bring out another 125 titles in 1977-78.

Aided Colleges

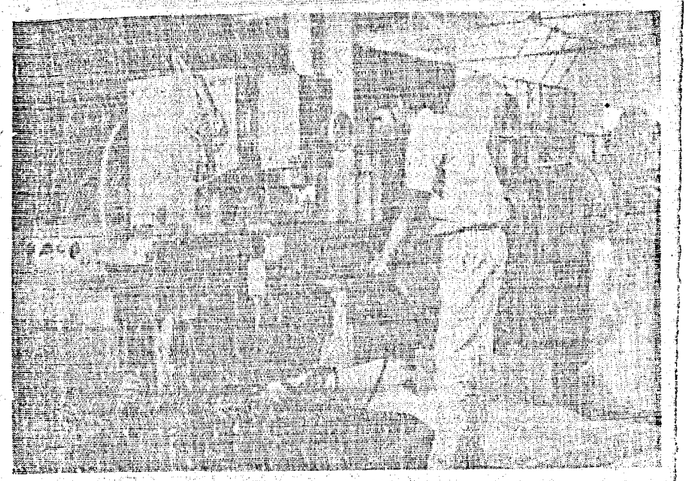
The Government have taken steps to ensure prompt and full payment of salaries to the teaching and non-teaching staff working in aided colleges in the State (Arts and Science Colleges, Training Colleges, Oriental Colleges, Colleges of Physical Education and Institutions imparting instruction in Social Work) by introducing a revised pattern of grant in aid from the 1st July, 1977.

National Cadet Corps

The strength of the National Cadet Corps in Tamil Nadu is now 52 Senior Division Units with about 32,000 cadets and 674 Junior Division Troops with about 67,000 cadets. These include 5 Girls' Senior Divisions with a strength of about 3,000 Senior Division Girls and 53 Girls' Junior Division Troops with a strength of about 5,300 Junior Division Girls. The expenditure on the National Cadet Corps from this Government's funds in 1977-78 will be about Rs. 105 lakhs. The Tamil Nadu Contingent of the National Cadet Corps regained the coveted All-India Banner in the Republic Day Parade held in January, 1977.

National Service Scheme

The National Service Corps has been launched with the aim of providing college students with opportunities to devote their leisure time in the service of the nation, particularly in the field of education. The Universities which are implementing the scheme get a grant calculated at Rs. 60 per student per annum, of which Rs. 35 is met by the Government of India and Rs. 25 by the State Government. The students and teachers of colleges participate in this scheme on a voluntary basis. The number of students who participated in the scheme in 1976-77 was 20,000 regular plus 10,000 special Camping during vacations. During the floods in Madras City and environs in December 1976, about 3,000 National Service Scheme students took an active and laudable part in flood relief and rehabilitation operations. The strength of the National Service Scheme has been increased in 1977-78 to 25,000 regular plus 12,500 special camping. A provision of



Rs. 14 lakhs has been made for this scheme in the State Budget for 1977-78.

Legal Studies

The strength of the Madras Law College has increased from 1,045 in 1968-69 to about 2,457 (1,648 in regular degree courses, 695 in evening degree courses and 114 in M. L. courses) in 1976-77. A new college was opened at Madurai during 1974-75 and 320 students were admitted in that college in that year in the I.B.G.L. Course. The strength of that college in 1976-77 was 829 students in full time courses From 1977-78, an Evening Law Course has been started with one section (80 students) in I.B.G.L.

TECHNICAL EDUCATION

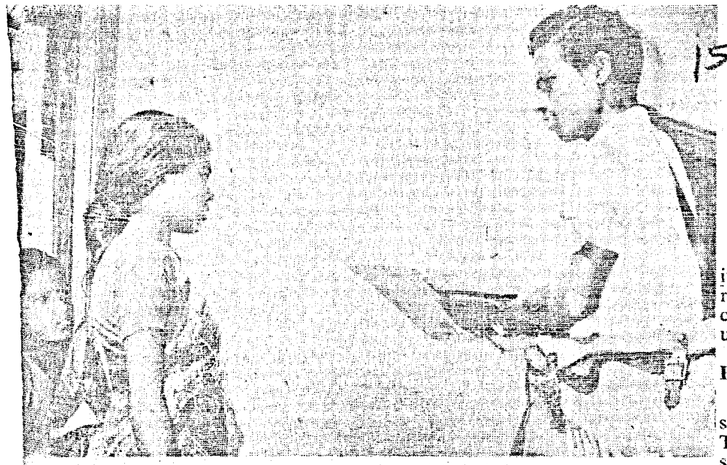
The provision for Technical Education in 1977-78 is Rs. 6 crores, inclusive of the provision for Technical Education buildings, etc. The Department has under its direct control 7 Engineering Colleges, 39 Polytechnics (including 3 Women's Polytechnics and 6 Special Diploma Institutions and 3 Arts and Crafts Institutions) and 14 Technical High Schools. The present level of annual intake is about 1,300 students for degree courses in the Engineering Colleges, 5,000 students for diploma courses in the Polytechnics and 840 students in the Technical High Schools (The other five Engineering Colleges in the State, which are University Institutions or autonomous institutions, are the Alagappa Chettiar College of Technology, Guindy, the Indian Institute of Technology, Guindy, the Madras Institute of Technology, Chrommpet, the Annamalai University's College of Engineering and Technology and the Regional Engineering College, Tiruchirappalli.)

Technological University

With a view to fostering the growth and development of higher education and research in Engineering, Technology and allied Sciences in the State, to ensure that the system is sensitive to changing demands and quick to respond adequately, and to develop a centre that will provide the necessary leadership for the growth of Technical Education in the State of Tamil Nadu, it has been decided already by the Government of Tamil Nadu to set up a Science and Technological University in the State.

The University will be of the Unitary type and the College of Engineering, Guindy, which is a premier educational institution in the State and which has all the facilities needed to be developed into a Technological University will be the principal seat of the proposed University.

The University will provide facilities and opportunities for higher education and research in Engineering, Technology and allied Sciences; devise and organise relevant programmes ; foster co-operation and exchange of ideas between academic and research community and industry ; and promote the spirit of entrepreneurship, and professional dedication among the students.



Village Health Volunteer Educating the People in Cleanliness.

A PEOPLE'S PROGRAMME

MALARIA, a serious infectious disease of man occurs most often in tropical and sub-tropical countries. The word malaria comes from two Italian words that means bad air. The disease got this name because of the association with the musty, bad-smelling air of the swamps.

Malaria ranks as a leading cause of death in many tropical regions of the world.

Cause : Parasitic one-celled animals, called protozoa, of the germs plasmodium cause malaria. These parasites spend part of their lives in the red blood cells of human beings. But they also must spend part of their lives in female Anopheles mosquitoes. These mosquitoes carry and spread the malaria parasites. When an Anopheles mosquito bites a person who has malaria, it sucks up the blood cells that contain the parasites. The parasites develop and multiply in the mosquito's stomach. Then moves into its salivery or mouth parts. Where the mosquito bites another person, it injects saliva containing the malaria parasites into the victim. The parasite enters the person's red blood cells. There they grow ang burst the blood cells, causing anaemia.

Symptoms : A person who has malaria suffers intense attacks of chill, fever, sweats and great weakness. There are three kinds of malaria. The falciparum, or estivo-autumnal, type ranks as the most dangerous. In this type fever and chills occur at irregular intervals. In the second type, quartem malaria, In the most common type, vivax or tertian, malaria, the fever often occurs every other day. Although vivax malaria is relatively mild, it causes much chronic illness. Person with this type of malaria often have relapses, or recurrent periods of fever.

Treatment : Doctors treat malaria with drugs that destroy the parasites. For centuries doctors used quinine to prevent and treat this disease. But during World War II, the supply of quinine from the East Indies was cut off. Scientists then developed many new compounds that were even more effective than quinine. Among these were atabrine, chloroquine, primaquine and pyrimethamine.

Control and Prevention : Malaria may be controlled and prevented by destroying the Anopheles mosquitoes and their breeding places. This can be done by draining swamps and by spraying breeding places with oil or chemicals that destroy the larvae. But extensive drainage projects are impractical. Therefore, a highly effective method to control the disease has been developed. The method is to kill infected mosquitoes, by the use of insecticides. Many of these mosquitoes bite only when they are indoors at night. Immediately after biting, they normally seek rest on a nearby surface. The walls and ceilings of the rooms should be sprayed with insecticides such as D.D.T. which remains active for a long time. When a mosquito rests on these surfaces, the insecticide destroys it.

RURAL AREAS

In rural areas, the insecticidal spray D.D.T. is usually used. If it is found that mosquitoes are resistant to D.D.T. alternative insecticides like B.H.C. and malathion are used.

Points to remember :

All the rooms in the houses should be sprayed with insecticides. The cattle sheds also should be sprayed.

Calendars, photographs and other wall hangings should be removed before spraying the walls.

The eatables and fodder should be covered before spraying.

Every house in the village should be sprayed. Otherwise, mosquitoes surviving from the houses and cattle-sheds which have not been sprayed will infest other places.

A house should be sprayed completely. No part of the house or room should be overlooked.

Houses should not be white-washed or plastered with mud for a period of two to three months after the use of the insecticide, otherwise the effect will be lost.

There is a belief that drugs like chloroquine should not be taken when the temperature is high. This is not correct. The drug can be taken when the temperature is high. However, if the temperature does not subside, the patient should consult the doctor.

It is important to remember that the drug should not be taken on an empty stomach.

If there is a case of fever, free medicine and consultation can be had from the health worker, health centre, dispensary and panchayats.

Drugs like chloroquine are supplied to all the shops.

In the eradication of malaria, the health service and social services organisations have an important role to play. As an initial step they should educate the people in the prevention and control of this disease. Then this can become a people's programme.

**

Nehru at the age of 5

Nehru with his parents, Thiru Motilal Nehru, his father and Swaroop rani his mother

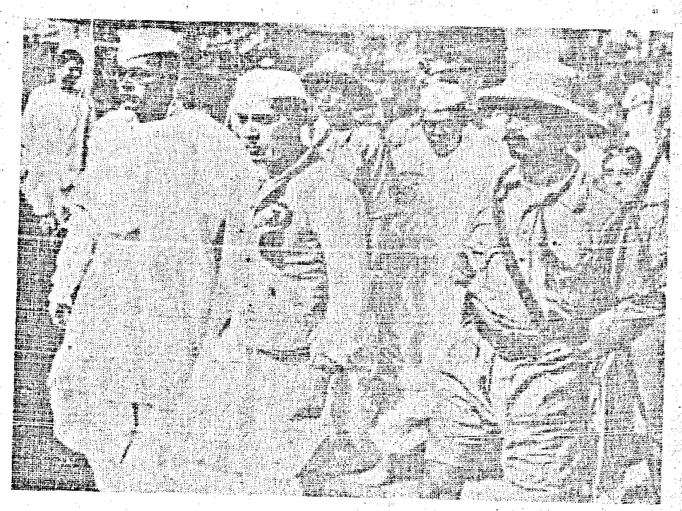
Nehru with his father in the Law Chambers at Allahabad (1912)

MEMORABLE EVENTS IN NEHRU'S LIFE

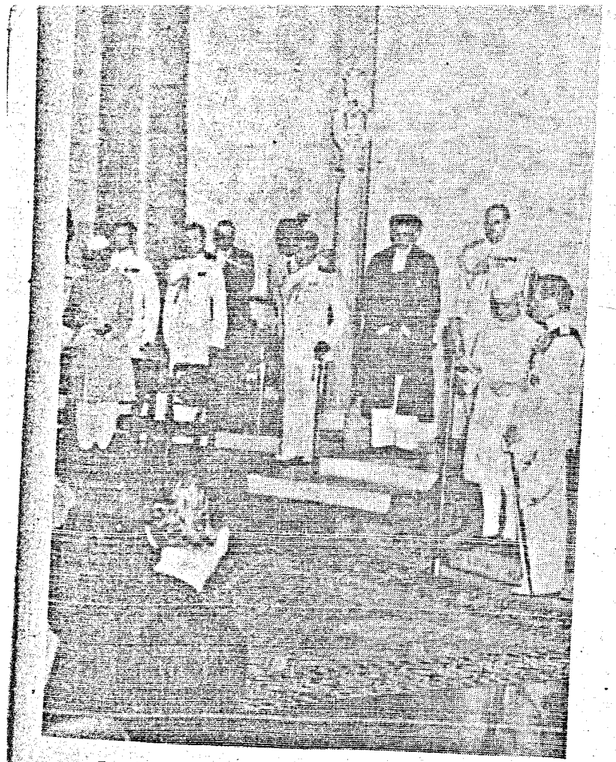
Nehru with his wife Kamala and his daughter Indira (1931)

Nehru taking "the reins of the horse" for a brief spell.

Nehru with Subhas Chandra Bose (1937)



Nehru with Gurudev Rabindranath Tagore, the Poet Laurate, at Santiniketan (1936)



Jawaharlal Nehru being sworn in as the first Prime Minister of India on 15th August, 1947.

Nehru met George Bernard Shaw at London when he called on the latter.

Nehru with children during his visit to Tamil Nadu.

Δ Nehru is here seen with Lord Atlee in 1947.

Δ Jawaharlal Nehru paying a visit to Sir Winston and Lady Sarah Churchill (1949).

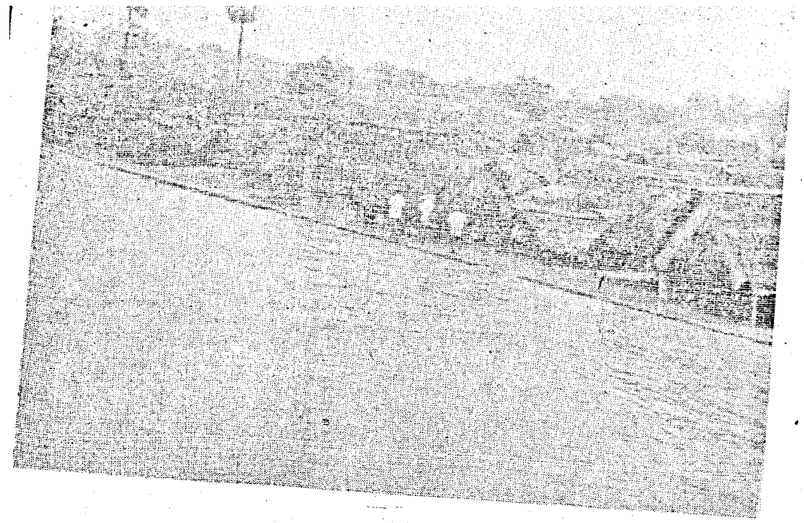
Jawaharlal Nehru with Presidents Nkruma, Naseer Sukharna and Tito. ▷

President Kennedy welcoming Jawaharlal Nehru when the latter visited U. S. A. ▽

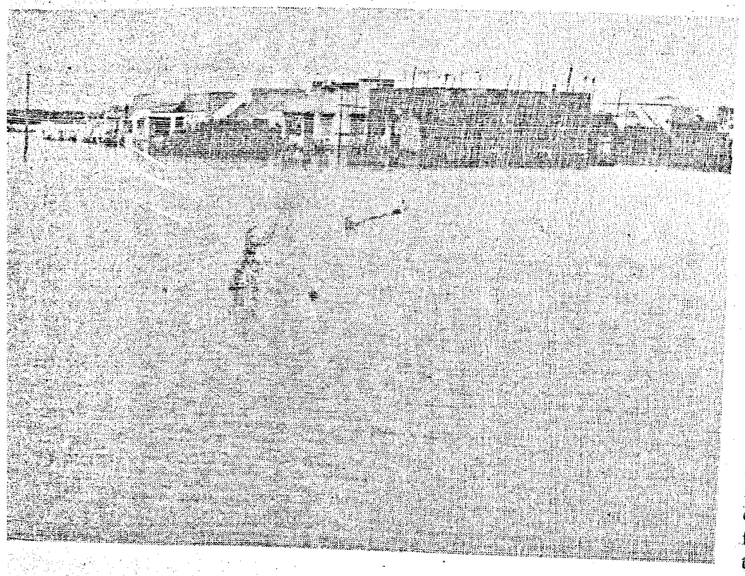
Jawaharlal Nehru greeting the Chinese-leader Mao-Tse-Tung when he visited China in 1954. ▽

AN INNINGS WITH A WINNING SMILE

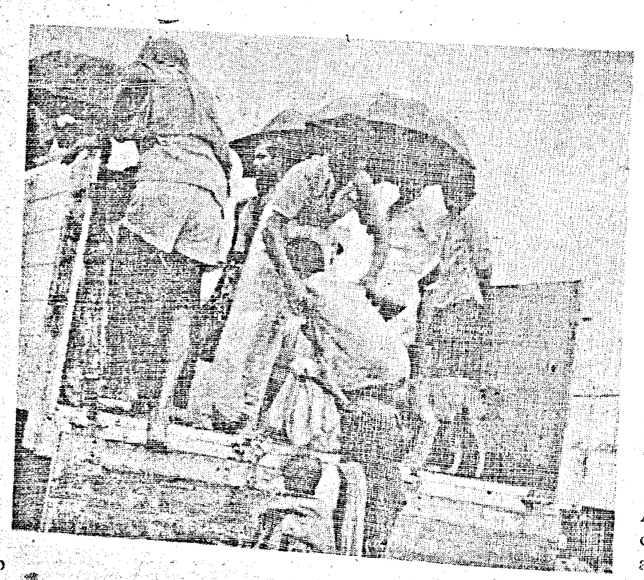
Jawaharlal Nehru, the man who made a tryst with destiny, taking the country to victory with A Winning Smile.



Havoc Caused By INCESSANT RAINS



RELIEF FOR RAIN-HIT PEOPLE



With the onset of the North-East monsoon, there was wide spread rain in Tamil Nadu, a fortnight ago. The irrigation tanks and reservoirs received copious supplies raising the hopes of a good sambha crop.

But the depressions formed in the Bay in the third week of October shattered all such hopes. The intermittent rains in the city and state great caused havoc to people. The incessant rains which lashed the city flooded several thorough fares and inundated a number of hutments, rendering thousands homeless.

The heavy rains water logged the roads and the traffic was cut off. Rail traffic on the broadguage was disrupted due to rain water overflowing the tracks. Due to bad weather planes were diverted.

Among the worst affected areas in the city was Vysarpadi in North Madras, where flood waters had entered the hutments. The corporation authorities arranged for alternative accommodation and distribution of food packets to the affected people. Other affected areas in the city were parts of Nungambakkam, Adyar, Otteri and Chingleput.

All the school buildings and community centres of the Corporation in the affected areas were thrown open to the flood hit people. The health Department of the Corporation took precautionary measures against outbreak of epidemics.

The Government had geared up the machinery to cope up with the situation following heavy rains in the city and the districts.

All the affected slum families were shifted to places of safety.

The corporation authorities had been directed to push through cholera innoculation programmes.

Four relief centres were opened. About 1.5 lakhs food packets were distributed throughout the city among the rain affected people.

Chief Minister Thiru M. G. R. going round the flood hit areas.

The Chief Minister, Thiru M.G.R. presided over a high-level conference of senior officials to discuss immediate and long-term measures to tackle the problems arising from excess monsoon rains. He suggested that a question of forming a chain of reservoirs around the city to absorb and conserve the flood waters should be examined.

The Chief Minister said as far as Madras was concerned the relief measures already undertaken would be continued.

The question of increasing the capacity of the Chembarambakkam tank as well as diversion of the inflows into it should be examined.

An official team headed by the Revenue Board member in charge of flood relief measures has been asked to study the impact of the inundation and flooding noticed in the belt areas of Madras city and suggest measures for the redress of the grievances of the people in those areas.

The Chief Minister, Thiru M.G.R. has set up "the Chief Minister's public relief fund"

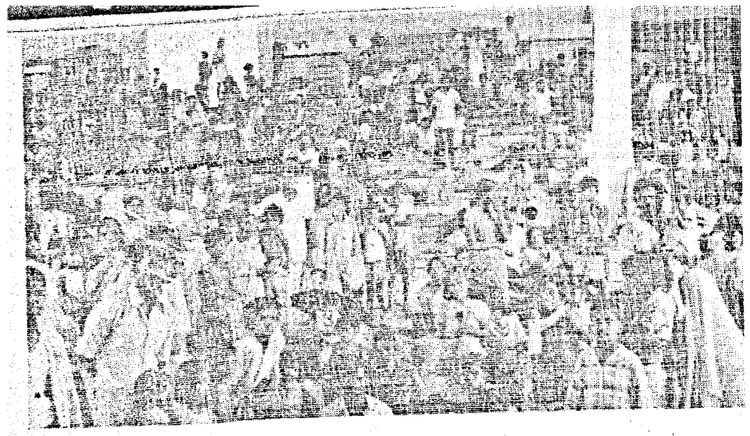
Thiru M.G.R. in an appeal urged the philanthropic public to come forward with liberal contribution towards flood relief measures initiated by the State Government in Madras city and belt areas as well as in the affected districts in the wake of heavy monsoon rains.

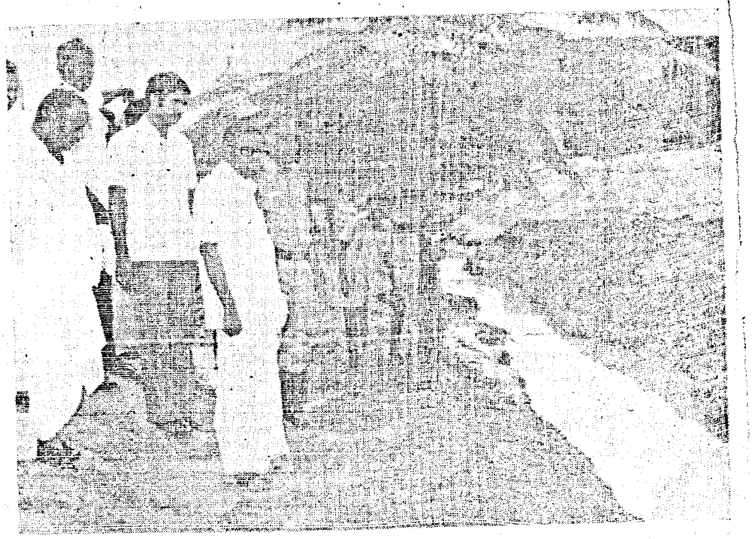
The Chief Minister and his cabinet colleagues visited the flood affected areas, consoled the grief-stricken victims and supervised the relief measures undertaken.

73 persons had lost their lives in the recent rains. 136 heads of cattle had been lost and 5,848 hutments collapsed.

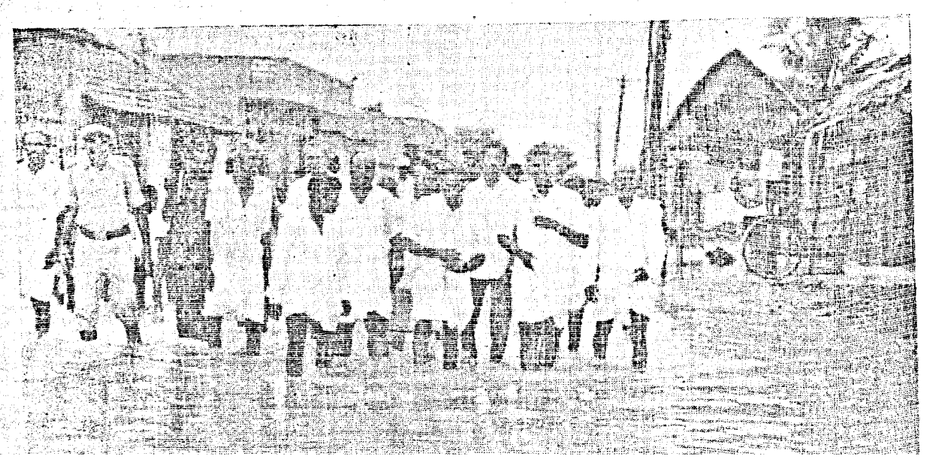
A sum of Rs. 2,000 will be given as relief to the family where the bread-winner had lost his life.

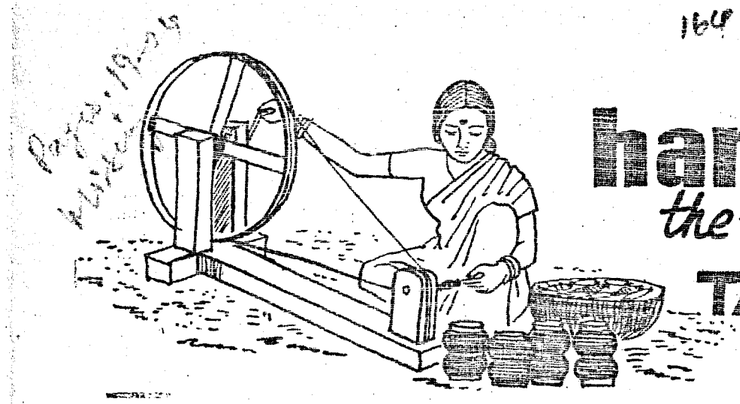
So far, 1,95,450 lunch packets per day were distributed to the winners. 10,000 children were provided with milk.





Thiru R.M. Veerappan, Minister for Information visited the flood affeted areas.





handloom *the pride of* TAMIL NADU

INDIAN WEAVERS

Weavers, weaving at break of day
Why do you weave a garment so gay ?
Blue as the wing of a halcyon wild
We weave the robes of a new-born child

Weavers, weaving at fall of night
Why do you weave the garment so bright?
Like the plumes of a peacock purple and green
We weave the marriage veils of a queen

Weavers, weaving solemn and still
What do you weave in the moon-light chill ?
White as feather and white as cloud
We weave a dead man's funeral shroud.

—*Sarojini Naidu*

HANDLOOM THE PRIDE OF TAMIL NADU

The Muslins from India were in demand as far back as 5,000 B.C. to enshroud the Egyptian mummies. Legend has it that these fine Muslins when moistened and spread on grass became almost invisible. It is difficult to believe that human hands could weave fabrics so fine.

The Indian weaver has been the artisan as well as the artist — his hands executed what his imagination visualized. And his natural sensitivity to rythm and colour, line and curve have made him a perfect designer and a master craftsman. The skill has passed from father to son, so that in the course of time a tradition has been built and sustained.

Each state has its own distinctive weave, design or style. The gorgeous saris, and celebrated brocades of Varanasi, the Himrus of Hyderabad, the beautiful silks of Kancheepuram, the traditional designs of Adyar, the delicate work of Chanderi, Maheshwaries of Madhya Pradesh, the Patan Patolas of Gujarat, the chikan Muslins of Lucknow, the prints of Farukabad, Bombay and Jaipur are all fascinating to the fashion conscious.

Thiru K. RAJA MOHAMMAD,
Minister for Handloom & Textiles

Dress designers the world over have taken an increasing interest in the handloom textiles of our country as fashion fabrics with great potentialities. The shades and designs are too numerous to choose from as also as the materials to work with.

Historical Background :

The handloom industry is ancient and has passed through many viscititudes. Its modern history can be said to have begun when in 1640, a year after the Fort St. George was built by the East India Company, 400 families of weavers had emigrated to the village, then called Madras Pattinam, north of the Fort. The Company encouraged the weavers. During the early years steps were taken to direct their labour to manufacture such clothes were promising for export. Cotton cultivation was also encouraged to procure cheap raw-materials for the company's weaving establishments. When the company assumed administrative functions encouragement to the weavers continued for some time. The "Moturpha" a tax on weavers was abolished. When this tax was reimposed for revenue reasons the company weavers were exempted from it. Cultivation in weavers' lands was rent free. To direct and improve the industry commercial residents were appointed in all districts. The other measures adopted to encourage the weavers were division of the windfall profits among them and supply of grain allowances during the periods of famine.

The second phase of the industry came towards the end of the 17th century. With the growth of the British cotton textile industry, the use of Indian textiles declined in England either by complete prohibition or by the imposition of heavy import duties. British goods began to flood world markets. The reaction in Madras was the closure of the entire commercial establishments of the East India Company in 1835, causing great distress of the weavers. A large number of weavers were forced to seek their livelihood in agriculture or emigrate as coolies to Ceylon, Burma and Mauritius. During the second half of the 19th century there was a revival of Industry when high-priced hand-spun yarn yielded place to cheap machine-spun yarn and with the consequent reduction in prices foreign markets in handloom fabrics once more expanded. Even so the prosperity did not last long, as the price differential between handloom and mill cloths was adverse to handloom cloths. The power-looms made inroads into the range of goods formerly produced by the handlooms. Once more there was a decline in the handloom industry.

Levy of stiff excise duties besides cess and additional sales-tax made mill cloth costlier. In addition certain varieties of production of cloth were reserved exclusively for handlooms, while a curb was

introduced on mill production of dhoties and saris.

The helping hand of the Government:

The handloom industry holds a very high place in the economy of Tamil Nadu.

Tamil Nadu is known for its silk saris like Koranadu, Kanchipuram and Arni saris, handkerchiefs, lungis, angavasthirams and dhoties.

The Government of Tamil Nadu has been helping this industry substantially through the co-operative sector, several welfare schemes for the development of this industry have been implemented by the Government.

The yarn is being dyed.

Out of the 5.56 lakhs of handlooms functioning in the State, about 1.80 lakhs handlooms have been organised as 872 Primary Weavers Co-operative Societies. Under the scheme of increasing Co-operative coverage, it is proposed to bring 60 per cent of the handlooms in the State Co-operative coverage within a period of 2 to 3 years. The total production of handloom cloth by the 1.80 lakhs handloom weavers within the co-operative sector, works out approximately to Rs. 40 crores per annum. As co-operative provides the best form of organisational set up for ensuring proper development of the weavers, several steps have been taken to bring more and more handloom weavers in the co-operative sector and to implement the various handloom development schemes through these weavers co-operative societies.

(*i*) Weavers are given loan assistance upto Rs. 100 per person for making their initial share capital contribution. While joining the existing or new weavers co-operative societies. During 1976-77, Rs. 14 lakhs have been sanctioned under this scheme of which Government of India provided Rs. 7 lakhs on a matching basis. With this assistance and with the financial assistance of Rs. 36 lakhs secured from Commercial Banks, 37,416 weavers were brought into the co-operative fold and 119 new Weavers Co-operative Societies were formed during 1976-77. It is programmed to bring about 30,000 private weavers into the co-operative fold annually till the co-operative coverage of handloom weavers is increased to 60 per cent.

(*ii*) One Handloom Export Production Project at Karur and two Intensive Handloom Development Projects at Kancheepuram and Erode were started in 1976-77 to cover 11,000 looms in the course of 3 years.

(*iii*) It has been proposed to set up 50 Industrial Weavers Co-operative Societies for the benefit of the loomless weavers within a period of 2 to 3 years. During 1976-77, three such societies have been started with a total financial outlay of Rs. 10 lakhs. These units have been started at Dharmapuri, Ramanathapuram and Madurai to provide employment to 300 loomless weavers.

(*iv*) The Government of India have approved the production of dhoties and sarees under the controlled cloth scheme on handlooms. About 5,000 handlooms are engaged in the production of these varieties. As against the target of 17 million metres about 6 million metres have so far been produced. Government of India have sanctioned an advance subsidy of Rs. 33 lakhs at the rate of Re. 1 per square metre on the actual deliveries of controlled dhoties and sarees produced by handloom sector in the State.

(*v*) For the welfare of the Handloom Weavers working under the co-operative fold, the 'Co-operative Handloom Weavers Savings and Security Scheme' has been started with effect from 15th November 1975. Under this cheme, in the event of death, the nominee of the subscriber will get a minimum insurance cover of Rs. 500 besides the subscriber's contribution and Government contributions. The Weavers members are required to contribute 6 per cent of their wages towards their premium payment. The total amounts are founded with Government which allows an interest of 7 per cent on the accumulations. So far about 57,000 weavers have been brought within the scope of this new scheme.

Apart from the implementation of the Handloom Development Scehmes financed by the Central and State Governments, additional schemes are being implemented with financial assistance from the National Co-operative Development Corporation, New Delhi :—

(*a*) Expansion of 9 Co-operative Spinning Mills to a capacity of 25,000 spindles each, with a financial assistance of Rs. 176.65 lakhs.

Yards and yards of yarn goes into the loom to make atractive sarees.

(*b*) Setting up of 3 Readymade Garment Manufacturing units by Co-optex at Madras, Madurai and Tiruchirappalli at a cost of Rs. 45 lakhs (The National Co-operative Development Corporation has so far sanctioned Rs. 26.49 lakhs).

(*c*) Setting up of 5 modern dye houses with the financial assistance of Rs. 60 lakhs from the National Co-operative Development Corporation through the Tamil Nadu Co-operative Textile Processing Mills Limited, Erode.

(*d*) Expansion of the Processing activities in the Tamil Nadu Co-operative Textile Processing Mills, at a cost of Rs. 22.50 lakhs.

TAMIL NADU HANDLOOM WEAVERS' CO-OPERATIVE SOCIETY LIMITED (CO-OPTEX)

The Tamil Nadu Handloom Weavers Co-operative Society, popularly known as "Co-optex", is the apex organisation to which all the Primary Weavers Co-operative Societies are affiliated. The main object of this society is to procure and supply raw-materials required by the Primary Weavers Co-operative Societies and also to procure and market the handloom cloth produced by the primaries. It runs 18 yarn depots at all important weaver centres in the State where yarn produced by the 12 Co-operative Spinning Mills in the State are stocked and distributed to the Primary Weavers Co-operative Societies. The Co-optex is also running 226 retail selling units within the State and 97 selling units in other States in the country. Besides, they have appointed 200 private dealers who have been entrusted with the work of selling handloom goods on commission basis. Under the present arrangement, the Co-optex is able to sell goods to the value of about Rs. 19 crores per annum.

When 60 per cent of the total weavers are brought into the co-operative fold, the production in the co-operative sector will increase to about Rs. 80 crores per annum. It is expected that the Co-optex may then have to handle stocks of the value of Rs. 50 crores per year to maintain the present level of procurement of 50 per cent of the total production of the primaries. To enable it to handle a business of such a magnitude, the Co-optex is implementing a number of programmes to strengthen its marketing arrangements.

(*i*) Opening of 100 show rooms at State Capitals and at important cities in Tamil Nadu and in other States at a cost of Rs. 133 lakhs. They have so far opened 30 new show rooms and modernised 18 existing show rooms ;

(*ii*) Opening wholesale godown at important market centres within the State and outside to boost up bulk sales ;

(*iii*) Setting up a separate export wing called "Co-optex International" to attend exclusively to trade enquiries from exporters in India and also directly export ;

(*iv*) Helping the primaries to diversify their production and to meet the export needs, etc., by supplying improved appliances like Jacquards, arranging the production of polyester-blended sarees and by suggesting new designs ;

(*v*) Provision of share capital assistance to the Co-optex to the extent of Rs. 50 lakhs to enable it to expand its marketing activities. (National Co-operative Development Corporation has so far sanctioned Rs. 20 lakhs).

RAW MATERIAL REQUIREMENT

(1) Cotton Yarn : There are 212 textile mills in Tamil Nadu including 12 Co-operative Spinning Mills producing about 75,000 bales of cotton yarn per month. The total requirements of yarn by the handloom industry both in the co-operative and private sectors is about 20,000 bales per month. Though the State is surplus in the production of cotton yarn, it has to depend entirely upon Maharashtra and Gujarat State for its supply of cotton. In the past few months there has been a steep rise in the prices of cotton of different varieties. In view of the increase in cotton prices, most of the textile mills in the State including the Co-operative Spinning Mills have been incurring heavy cash losses and experiencing acute financial difficulties. The State Government have written to the Government of India for regulating the price line for cotton at a reasonable level.

The handlooms outside the co-operative fold are drawing their requirements of yarn from private mills and yarn dealers. Due to high prices of yarn they have been representing that adequate arrangements should be made to supply yarn to them at reasonable prices.

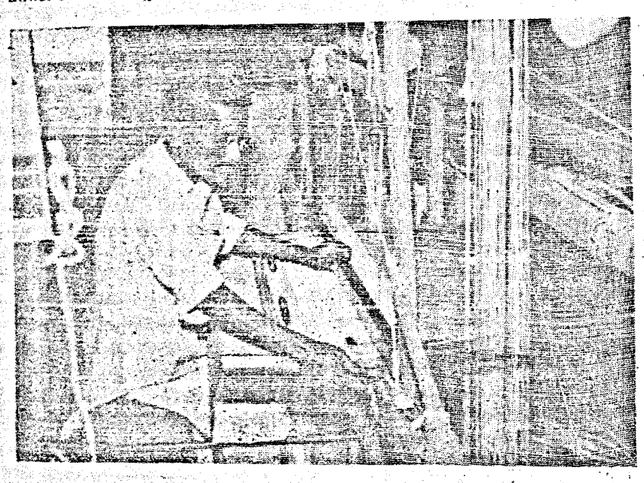
Negotiations have been held with the [illegible] of the National Textile Corporation and the member mills of the Southern India Mill Owners Association for opening yarn depots in important weaving centres in the State.

(2) **Art Silk Yarn** : The total requirements of art silk yarn by the weavers of Tamil Nadu are about 5,000 cases of 100 kgs. each per month. Out of the 8 spinning mills producing art silk yarn in the country, the South India Viscose is the only unit in Tamil Nadu. There is no control over prices or distribution of art silk yarn. Under a voluntary agreement between the producing mills and the actual users of art silk yarn, a part of the production of the mills is allotted to users associations by Central and Regional Committees. However, these arrangements are not working satisfactorily and the genuine handloom weavers of this State do not get their adequate requirements. The Government of India have agreed to associate the Director of Handlooms and Textiles with the Central Committee so that the requirements of the co-operative societies could be allotted directly to the State. Arrangements for obtaining this direct allotment are being finalised.

CO-OPERATIVE SPINNING MILLS

The 12 Co-operative Spinning Mills in the State produce good quality yarn and supply it at reasonable prices to the handloom weavers in the co-operative sector thereby stabilising the market prices of yarn. These mills with total installed capacity of 2.12 lakhs spindles are producing about 5,000 bales of yarn ranging from 10s to 120s every month.

(1) **Finance.**—The total paid up share capital of the 12 Co-operative Spinning Mills is Rs. [illegible] lakhs including the Government contribution of Rs. [illegible] lakhs. The Government have also assisted the Co-operative Spinning Mills by providing loan facilities from time to time to enable the mills to survive in the [illegible] in the industry. As per the latest audit report, the Tamil Nadu Co-operative Development Bank [illegible] showed financial [illegible] to the extent of Rs. 45.875 lakhs to 9 co-operative Spinning Mills towards margin money for working capital. The State Government also provided an equal amount to these mills on a matching basis. In respect of mills which have embarked on schemes of substantial expansion, the Government have provided equity capital to the extent of Rs. 351.30 lakhs during the period with the assistance from National Co-operative Development Corporation and Government of India. The Government have also extended guarantee assistance to enable the mills to purchase machinery on deferred payment. The outstanding under loans and guarantee assistance provided by the Government amounted to Rs. 143.45 lakhs and Rs. 828.28 lakhs respectively as on 30th June, 1976.



A weaver at the loom.

(2) **Production.**—During the year 1975-76 of the Co-operative Spinning Mills produced a total quantity of 118.67 lakhs kgs. of yarn and sold 113.31 lakhs kgs. valued Rs. 17.87 crores. Bulk of the production was supplied to Primary Weavers Co-operative Societies through the net work of yarn units maintained by the Co-optex, at the prices fixed by the yarn price Sub-Committee. The working results of the mills resulted in a total accumulated loss of Rs. 636.97 lakhs up to 30th June 1976, while the total accumulated reserves amounted to Rs. 680.63 lakhs.

(3) **Expansion programme.**—The Co-operative Spinning Mills have embarked of schemes of substantial expansion increasing their capacity up to 25,000 spindles each, involving a total project cost of Rs. 11.71 crores. The Co-operative Spinning Mills at Vellore, Salem, Mayuram and Melur have since completed their expansion programmes. The expansion schemes in the remaining mills namely at Aramboly, Pettai, Karur, Dharapuram and Kancheepuram are in different stages of progress and are likely to be completed by the end of 1977. When the expansion scheme in all the mills is completed the total installed capacity will increase to 3.26 lakhs spindles and the monthly production will be of the order of about 9,500 bales.

TAMIL NADU HANDLOOM FINANCE AND TRADING CORPORATION

The Tamil Nadu Handloom Finance and Trading Corporation which was set up with the objective of financing the handloom industry outside the co-operative fold has diversified its activities by taking up trading in handloom fabrics. Loans upto a maximum of Rs. 1,250 per loom are advanced to individual weavers, for purposes like procurement of raw materials, preparatory processes including bleaching, mercerising dyeing of yarn and production and marketing of cloth. It has taken up recently marketing of handloom fabrics produced by its members.

The Corporation has been continuously working on profit and has been declaring dividends up to 1975. During the year 1976, it has incurred a net loss of Rs. 68,438.00.

DEVELOPMENT PROGRAMME

The Corporation has entered the field of exports with tie up arrangements with Co-optex, Handicrafts and Handloom Export Corporation and All India Handloom Fabrics Marketing Society. It has opened a liaison office-*cum*-show room at New Delhi to attend to the trade enquiries from wholesalers and foreigners. In addition, 5 more show rooms have also been set up at Madras, Bangalore and Tirupathi. It is proposed to open 54 show rooms within and outside the State during the year 1977.

In addition to the Export Oriented Handloom Project and Handloom Intensive Development Projects which are working as units of the Corporation, it has independently set up production centres at Salem, Omalur, Sellur and Kurunjipadi. Mostly exportable varieties are being produced in these projects. The Corporation has also set up a modern Garment Factory with 120 power driven machines at Madras with an annual capacity of about 2 lakh pieces.

HANDLOOM DEVELOPMENT PROJECTS

Pursuant to the recommendations made by the High Power Study Team appointed by the Government of India 6 Handloom Intensive Development Projects and Handloom Export Oriented Prijects have been sanctioned for implementation in the State.

The entire outlay of the Export Production Projects will be provided by the Government of India while in the case of Intensive Handloom Development Projects the cost will be shared by the Central and State Governments at 75 per cent and 25 per cent respectively. When the full coverage is achieved in all these 6 projects, 22,000 handlooms in the private sector will be covered by the projects and concerned weavers will get assured work and income through out the year.

EXPORT OF HANDLOOM GOODS

Handloom products like lungies, towels, shirtings, bedspreads, furnishing fabrics, etc., are being exported to various foreign countries. In view of the growing export market and increasing production in the co-operative sector, the Co-optex has set up a separate export wing with necessary technical staff. It has appointed agents in foreign countries and it is making sustained efforts to secure orders for export of handloom fabrics. By providing financial assistance for modification of looms the Co-optex has succeeded in the course of the last one year in converting a sizeable number of handlooms in different centres to take up the production of export varieties of towels, shirtings, lungies, etc. When the 3 garment units proposed to be set up by the Co-optex are commissioned, the Co-optex will also undertake export of ready-made garments as well as fabrics. There are about 450 individual exporters who have registered themselves with the Handloom Export Promotion Council. The total value of handloom goods exported through Madras Port during 1976-77 was Rs. 3,400 lakhs.

The exotic designs bring in foreign exchange.

THE TAMIL NADU ZARI LIMITED

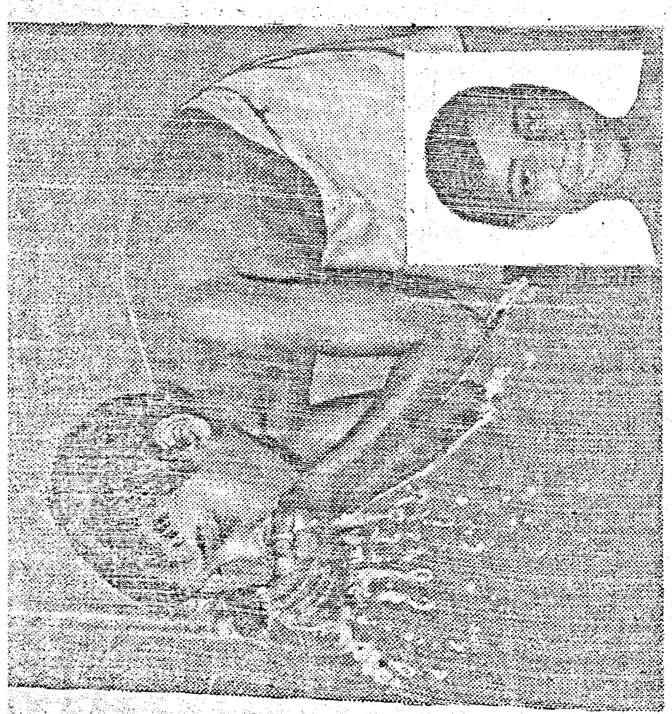
In order to overcome dependence on Surat for the zari required for silk weavers in Tamil Nadu, the Government have constituted a public limited company called "The Tamil Nadu Zari Limited." It was registered in December 1971, commenced production during March, 1973. Government have so far invested Rs. 7 lakhs in the share capital of the unit. The present capacity of the unit is 8,500 marcs of zari per annum, which works out to roughly 1/8th of the requirements of silk handlooms in Tamil Nadu. The unit is getting allotment of gold from the Government of India.

The entire production of zari is disposed of through Co-optex primarily to Weavers' Co-operative Societies. In order to get regular supply of silver wires, the unit has installed a silver wire drawing unit with the technical assistance from M/s. Textools Limited Company, Coimbatore and trial runs are being taken. The unit has obtained a term loan of Rs. 9 lakhs from the Tamil Nadu Industrial Investment Corporation for setting up of the Silver Wire Drawing Unit.

The rising trends of improvement in the handloom industry are indeed visible today in no small measure. The implementation of various schemes have no doubt paved the way for the consolidation of this large and most important industry. With proper guidance and assistance from the Government and the continued patronage of the consumer, it is hoped that the progress of the industry will be more impressive.

HELP LITTLE MUNUSWAMI OF PUDUPATTI TO SMILE!

When ample drinking water is supplied to his village, little Munuswami will smile with joy.
He will not have to walk miles to quench his thirst anymore!
You can help.
Buy Tamil Nadu Raffle tickets.
Because Tamil Nadu Raffle is a welfare scheme.
The proceeds go to drinking water supply in rural areas.
Help yourself, help others!



BUY TAMILNADU RAFFLE TICKETS

2 FIRST PRIZES in every series

Rs. 5 each

Cost per ticket Re. 1/-only

DRAW DATE - 19.11.1977

issued by
Director of Tamilnadu Raffle
Madras 600 002

PRIZE STRUCTURE PER SERIES

PRIZE	AMOUNT Rs.	NO. OF PRIZES	TOTAL Rs.
I	50,000	2	1,00,000
II	10,000	3	30,000
III	5,000	5	25,000
IV	1,000	25	25,000
V	500	100	50,000
VI	100	500	50,000
VII	50	2000	1,00,000
CONSOLATION PRIZES:			
I	1,000	4	4,000
II	500	6	3,000
III	300	10	3,000
		Total 2655	Rs. 3,90,000

The Co-operative Training College

The Co-operative Training College, Madras is one among the 16 Training Colleges of its kind in India which are engaged in the task of imparting training to the intermediary level cooperative personnel. The Central Committee for Co-operative Training of the Reserve Bank of India started "Regional Co-oprative Training Centres" in different parts of the country in 1954 and later years. With the transfer of the management of these 'Centres' from the Reserve Bank of India to the National Co-operative Union of India, New Delhi in 1962 the word 'Regional' was deleted from the nomenclature of the institutions. In 1967 the name was changed to "Co-operative Training College."

Administration

The College is directly controlled by the National Council for Co-operative Training (NCUI) New Delhi. By means of annual budget allocation, funds are provided by the Ministry of Industries and Civil Supplies, Government of India through the National Council for Co-operative Training. The major policy matters relating to the training programmes, administration etc. are decided by the Council. For the day to day administration of the College there is a Special Co-operative Training Committee in Tamil Nadu Co-operative Union, Madras. The Committee which is headed by the Chairman of the Tamil Nadu Co-operative Union consists of the Registrar of Co-operative Societies, some Heads of the Departments and non-official co-operators.

Aims of the College

The following are the aims of the College.

(*i*) To assess the training requirements of the Co-operative Department and Co-operative Institutions of Tamil Nadu and other States.

(*ii*) To conduct training programmes for co-operative departmental/ institutional personnel of intermediary category.

(*iii*) To evaluate the effectiveness of the training.

(*iv*) To undertake research studies and case studies in co-operative sector.

(*v*) To provide consultancy service to the Co-operative institutions.

Training activities :

The College offers four Diploma Courses and a large variety of Short Term Courses.

(*a*) **Higher Diploma Course in Co-operation :** With 36 weeks duration is the core course of the College. It is of an induction type which aims at providing some knowledge in co-operation and is mainly intended to the new entrants of the co-operative movement. The Course is attended by the newly recruited co-operative departmental candidates in the rank of Senior Inspectors and above and by the intermediary level category personnel such as the branch managers of Central Co-operative Banks. Being an induction course it covers different aspects of the co-operative movement and there are 7 subjects namely : (1) Principles and history of Co-operation and Planned Development, (2) Co-operative Credit and Banking, (3) Constitution, functions and working of Non-credit Co-operatives, (4) Co-operative Law and other allied law, (5) Co-operative Accounts, (6) Co-operative Audit and (7) Principles and Process of Co-operative Management. For this course the College caters to the requirements of Tamil Nadu, Pondicherry, Andaman & Nicobar Islands. So far the College has conducted 31 sessions.

(b) **Diploma in Co-operative Banking** This course is for a duration of 16 weeks and intended for the personnel working in co-operative banking institutions and the co-operative department officers connected with credit activities. Generally, the course is attended by the middle level personnel of the State and Central Co-operative Banks. The College has been vested with the responsibility of providing training to the institutional and departmental personnel working in or connected with credit in the southern and eastern region of India. Since the trainees undergoing this course normally have considerable period of experience, only the latest trends and the most essential information relating to Co-operative Law and Practice, Co-operative Banking, Practical Banking and Co-operative Accounts are provided to the participants. Starting from the third session the College has conducted 31 sessions.

(c) **Diploma Course in Co-operative Audit** This is yet another course aiming at the provision of in-service training to the institutional and departmental officers. The course draws its candidates from the Southern Region mainly from the audit wing of the Co-operative Department and to some extent from the internal audit section of the institutions. Apart from providing training in the technicalities of audit the course also prepares the participants in the presentation of financial statements to facilitate the financial analysis and better appreciation by the management and members of the financial position and programmes. In the 12 weeks of training the participants are taught : (*i*) Financial Accounting,

(*ii*) Cost Accounting and (*iii*) Principles and Practice of Auditing. So far the College has conducted 32 sessions of Diploma in Co-operative Audit.

(d) Diploma Course in Industrial Course : The College extends its activities to the departments other than co-operation but which have under them the administrative control of certain types of co-operatives. Newly recruited as well as experienced personnel belonging to the Department of Industries and Commerce, Khadi and Village Industries Board, and Handlooms undergo this training along with the institutional candidates from the industrial co-operatives, weavers co-operatives etc. During the 18 weeks duration of the course the trainees are provided with adequate knowledge on the working of different types of industrial co-operatives with emphasis on management. The subjects covered are (*i*) Industrial Development and Industrial Co-operation, (*ii*) Co-operative Law and other laws, (*iii*) Co-operative Accounts and Audit and (*iv*) Industrial Co-operative Management. Seven Deiploma Courses have been conducted in this College and the VIII th Session is in progress. In addition to the officers of the Department of Co-operation, State Government & Co-operative Institutions within India, Scholars are sponsored for various training programmes to undergo training at our College from the UNDP, ILO, SCAAP organisations.

In all the four Diploma Courses one common feature is that the training will be divided into "Theoretical" and "Practical." The interpersal is also so arranged that after acquiring sufficient background knowledge of the institutions, the trainees will be sent to the field for first hand information. On the job training is also arranged for the trainees during their practical training visits. The Higher Diploma Course in Co-operation and Industrial Course trainees are provided with the opportunity of studying the institutions in other states also. During the practical training the trainees are given job charts and they are expected to make a meaningful, critical and analytical study on the basis of which they are to submit a report at the end of the tour.

While undergoing the theoretical training the trainees are to "adopt" certain areas for co-operative development and visit them periodically. During the weekly or fortnightly visits made the trainees take up the developmental activity and help the societies situated in and around Madras in the matter of expanding membership, collection of dues, bringing the accounts up to date, increasing the deposits of the society etc.

Staff : There is a multi-sectoral and interdisciplinary faculty in the College belonging to different institutions such as National Council for Co-operative Training, New Delhi Co-operative Department of the Government of Tamil Nadu and Department of Industries and Commerce, Co-operative Bank etc. The class room lectures by the faculty members are supplemented by guest speakers who are subject matter specialists from different institutions such as Government departments, universities, banks, research institutions and management associations.

Teaching Techniques

The trainees are exposed to different types of teaching techniques such as group discussion, syndicate study, panel discussion, debate and seminar. The participation of the trainees in these have always been found to be encouraging. Terminal and final written examinations and viva-voce are also conducted. On the basis of the marks obtained in these examinations and the performance of the trainees in the practical training and assignment studies the evaluation is made and Diploma is awarded with different categories.

Short Term Courses :

Realising the need and requirement for the conduct of Short Term Courses the College conducts several orientation, functional and refresher courses on different areas of co-operation for the personnel belonging to different departments and co-operatives. To mention only a few the College is conducting courses for various sectors like the consumers marketing, urban credit, weavers, short term and long term credit, animal husbandry, small farmers development agency, fisheries etc. To meet the growing need for the conduct of such short term courses the College has in recent years increased the number of such courses and the finance is provided for these courses by the Tamil Nadu Co-operative Union of its Education Fund.

Other Activities :

In collaboration with the Tamil Nadu Co-operative Union the Colleg also conducted some seminars. In January, 1976 Southern Regional Seminar on Co-operative Audit was conducted at Madras. The College conducted a Seminar at State level on the role of co-operatives in the implementation of the 20 Point Economic Programme in January 1977. With the financial support from the institutions such as the State Co-operative Land Development Bank, the College is conducting research studies on matters relating to credit, consumers etc. Recently the College has also drawn up a scheme of adoption of consumer co-operatives by the 5 Colleges in Madras through which the College students would be involved and associated with the co-operative activities and programmes. The College also plays advisory and consultancy role on training matters in the State, particularly relating to the training programmes of the Junior Level Co-operative Training Centres in Tamil Nadu.

In designing and functioning the various courses guidance is taken from the Academic Council which consists of the Chief Executives of the Apex Co-operative Institutions and representatives from different Government departments. The College has got a consumers store catering to the requirements of the staff and trainees. The stores is managed by the trainees themselves and as such serves as the training ground for them. An annual souvenir is also published by the stores. **Thus the College is considered to be an intellectual nerve centre of the Co-operative Movement of Tamil Nadu.** It has four hsotels located in different places in the city. Establishment of training complex consisting of the College, hostels and staff quarters in the same place has been a long felt need. It is expected that with financial assistance of 10 lakhs from the Government of India and an equal sum from the Government of Tamil Nadu and similar contribution from Co-operatives in Tamil Nadu, the College may be able have its new building with increased facilities in the near future.

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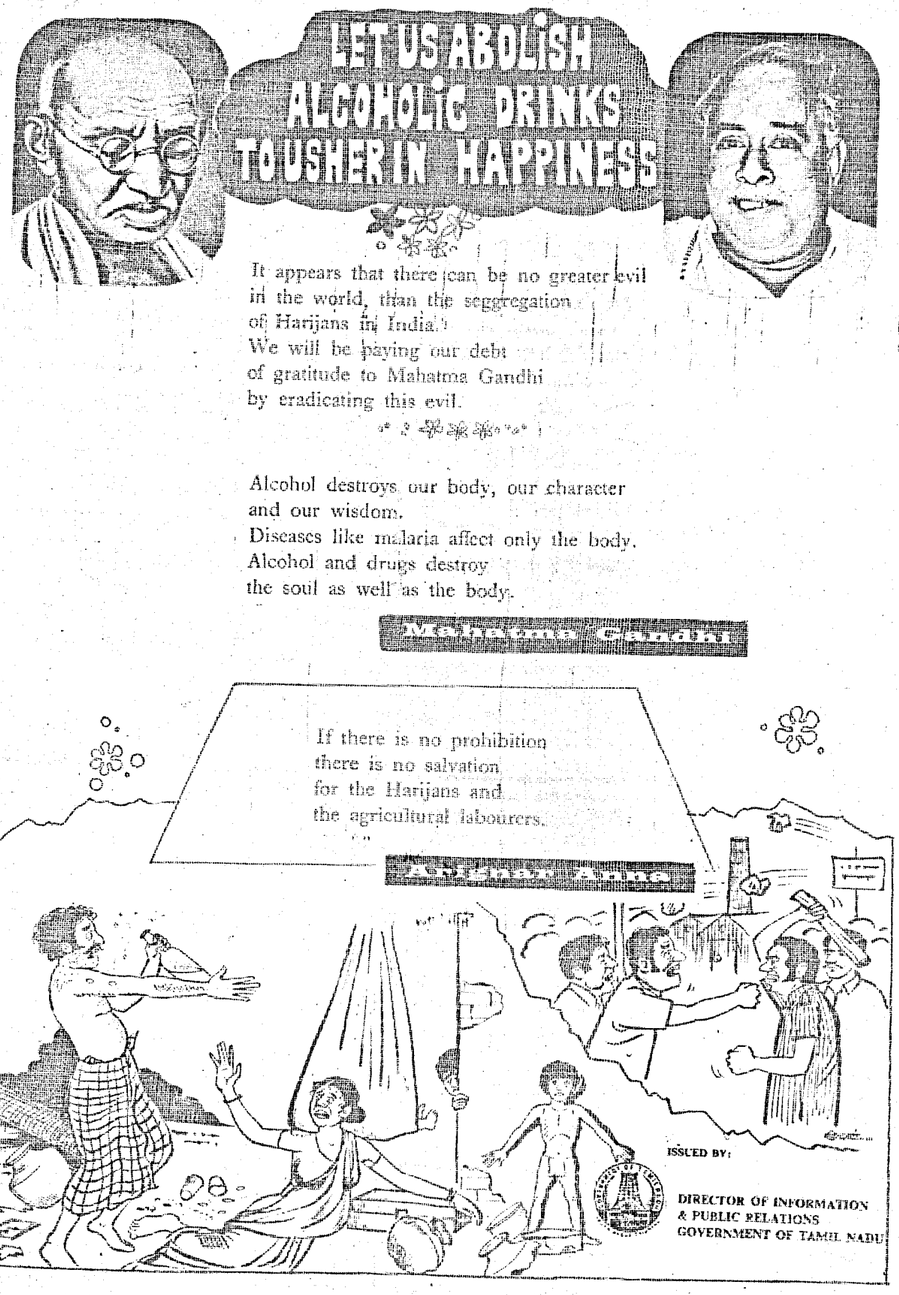

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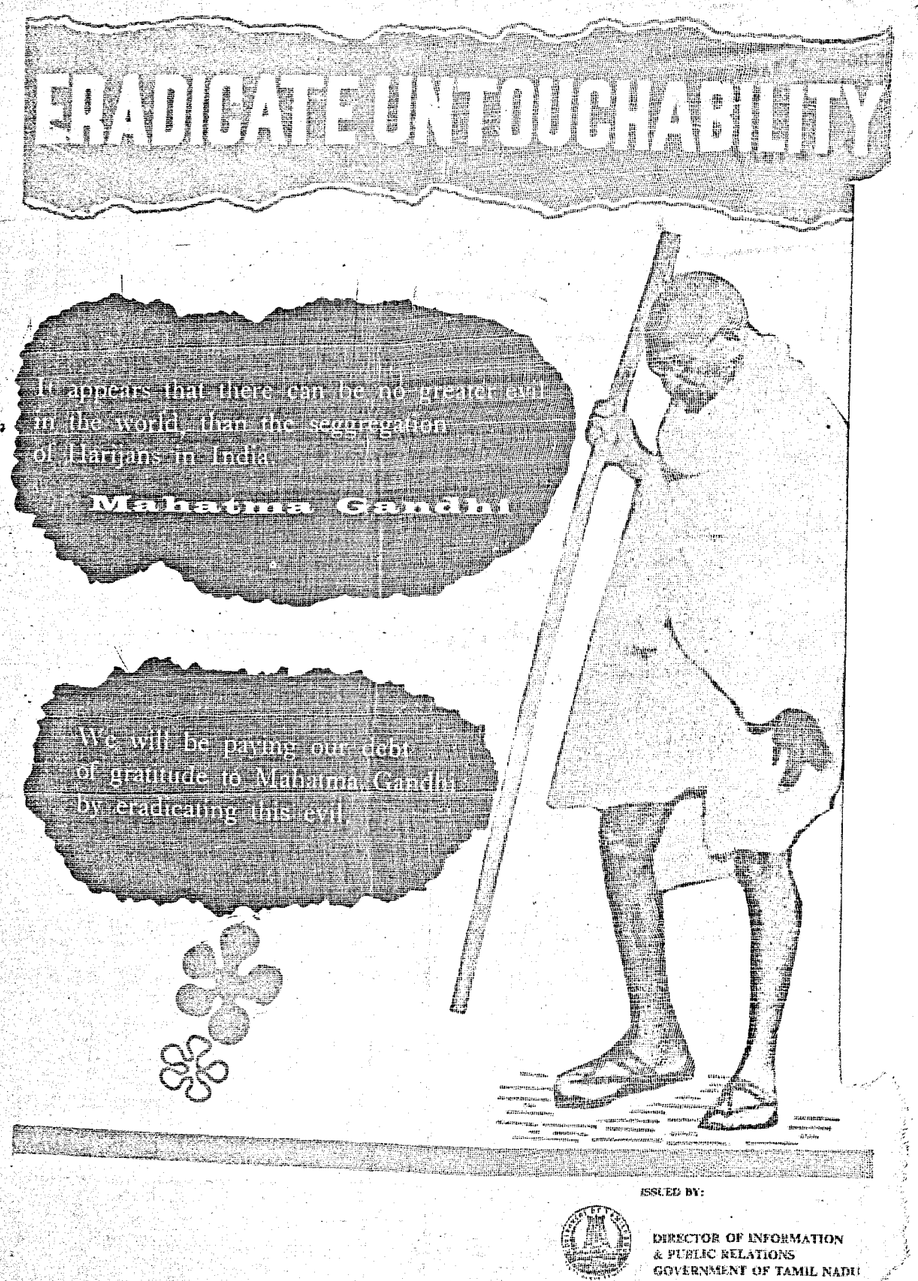

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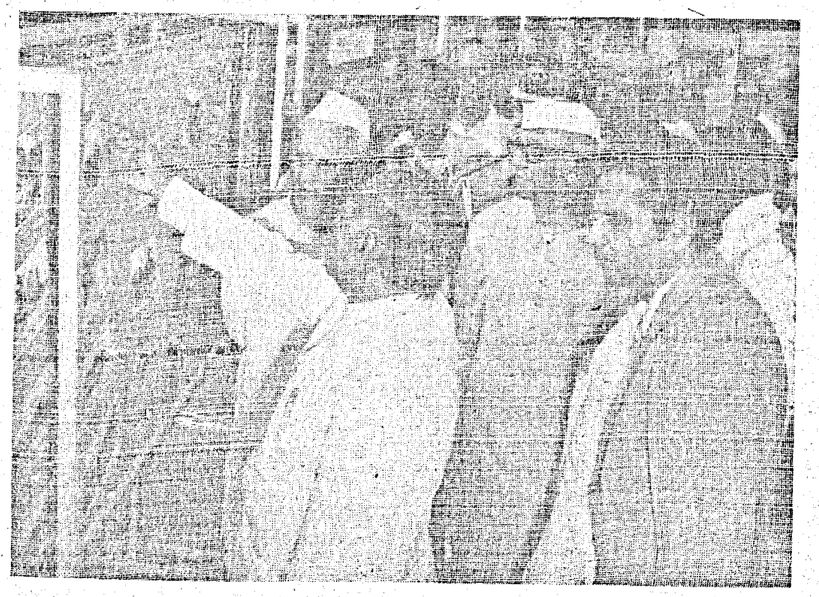
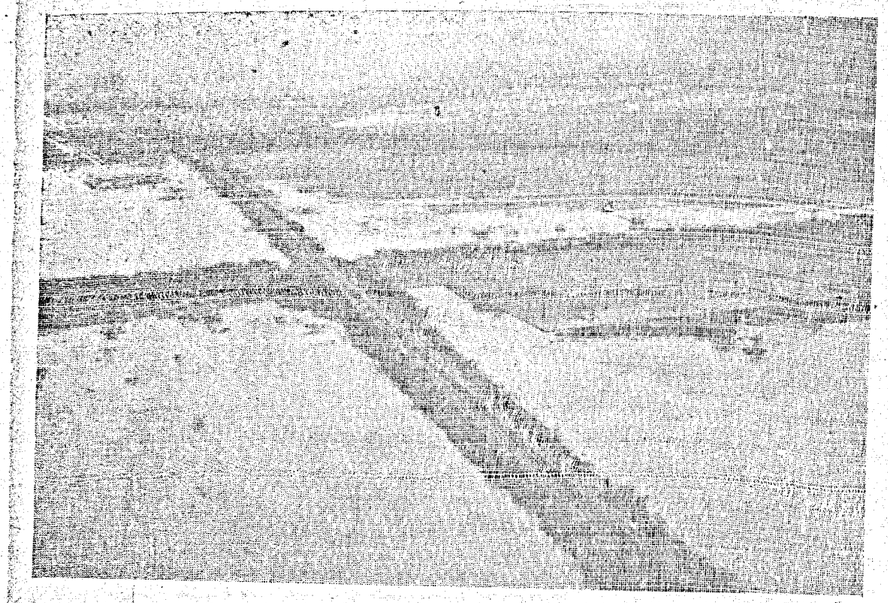
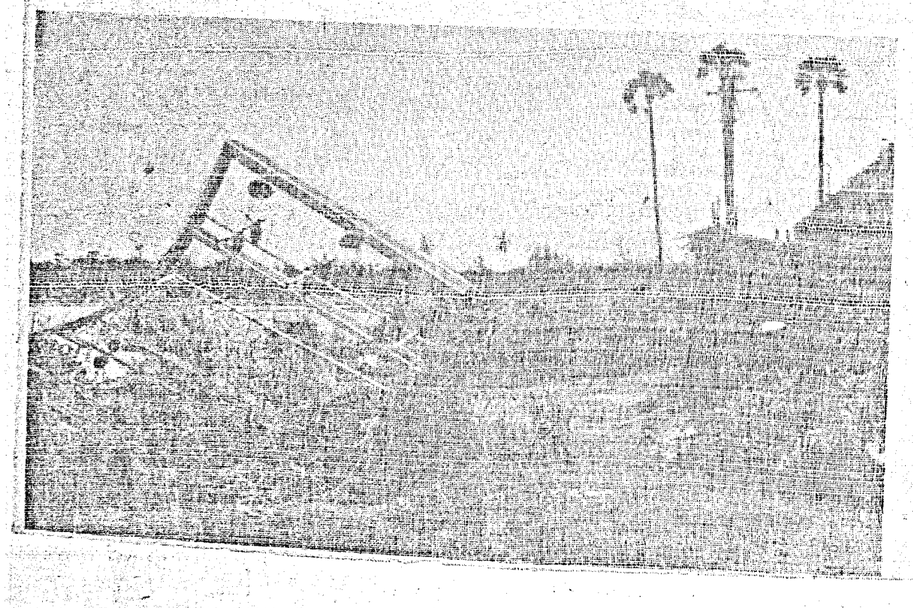
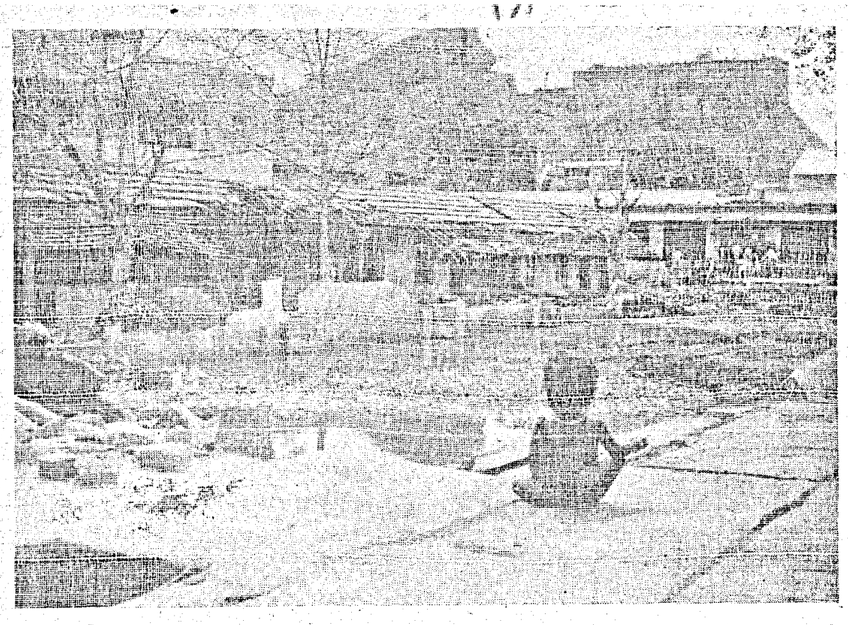


The President Thiru N. Sanjeeva Reddy is looking at the photographs of the cyclone affected areas in Tamil Nadu. The Governor Thiru Prabudass B. Patwari is on looking. The Chief Secretary Thiru V. Karthikeyan is explaining to the President.

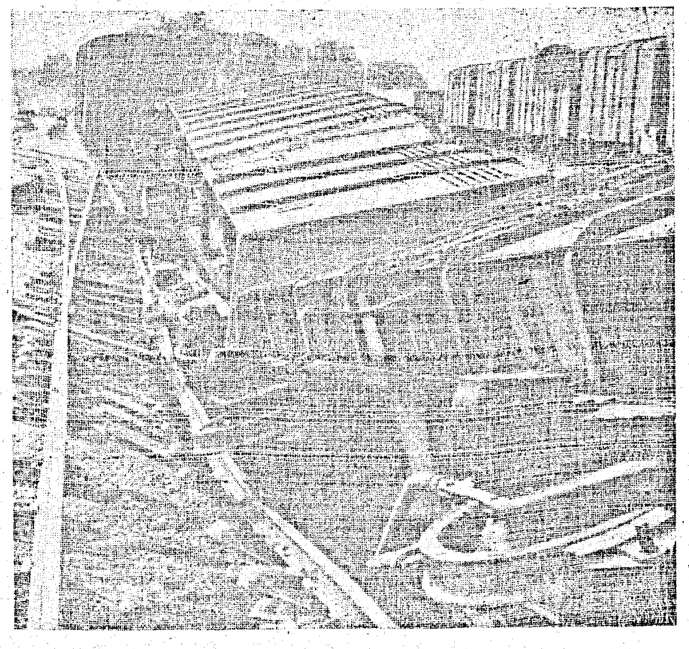


A Cyclone lashed the coastal districts of Tamil Nadu with gales sweeping at a velocity of 100 km ph, leaving in its wake inundated fields, disrupted communications.





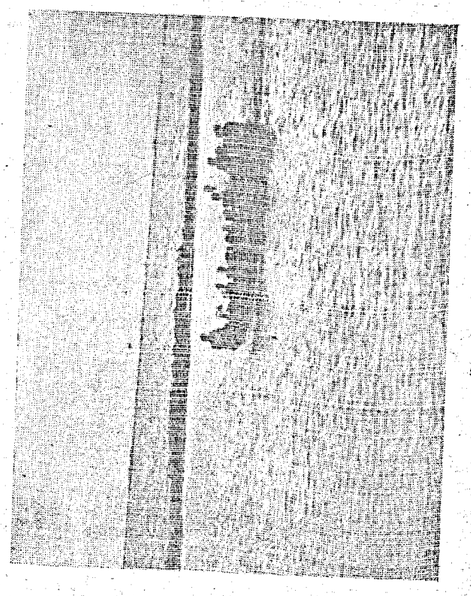
desolated houses, orphan children, disrupted railway tracks, rivers in Spate,



Rivers were in torrents

Dead bodies were washed into fields

Cocoanut Topes were laid waste



People were rescued

LEAVING VAST DESOLATE STRETCHES IN IT'S TRAIL

Rescue and Relief operations were commenced. The Air Force and Navy, pressed into service a Dakota, three Avros and four helicopters for resuce and relief operations. Roads were cleared of fallen trees. Food was dropped and medicines were also Jaken to the area. Many motor vehicles and boats belonging to the civil administration as well as the defence forces had been deployed. Two members of the Board of Revenue and the Commissioner of Training were helping in the relief operations in the affected areas on the spot along with the Collectors. The Ministers for Labour, Harijan Welfare and Local Administration, were also camping in various areas and were directing relief operations.

The loss of human lives till date is 557, with 199 persons missing. The loss of cattle has been substantial 21,982 heads of cattle — 767 heads of cattle missing. About 4 lakh hutments have been badly damaged. As many as 7,051 irrigation sources have been affected. P.W.D. is attending to urgent repair works and breaches and irrigation is expected to be restored in Thanjavur and Tiruchi districts by 1st December. 5,883 roads are yet to be restored. 464 Gruel Centres were opened. More than 3 lakh persons were fed daily— About 4.5 lakh acres of agricultural lands have been adversely affected owing to the cyclone and the floods. Paddy Banana, Sugarcane and Cotton have all suffered terrible damage.

Two sets of handloom clothes (each set consisting of a saree and one dhoti) have been distributed, with the active association of the CARE and other voluntary organisations like the Red Cross Society. Wheat products, biscuits, milk powder, blankets, etc., have also been donated by them, which have been sent by air or road to the affected areas. A daily supply of about 40,000 loaves of bread was being air lifted during the first few days, and later sent by road, from Madras to the affected areas *via* Tiruchirappalli. Anti-cholera vaccines were rushed to the area by air and road, with necessary staff to reinforce the locally available staff. 5 Kgs. of rice and one litre of Kerosene were ordered to be given free of cost to each of the cyclone affected families. The imprest amount of Collectors for immediate expenditure in connection with natural calamities was increased to Rs. 5 lakhs in the affected districts. In collaboration with the Indian Oil Corporation, supply of Kerosene and petrol was kept up in the affected areas. Arrangements to restore communications close the breaches and power are on a warfooting. Payment of cash grants for rebuilding of huts at Rs. 100/- per hut has begun in the affected areas. Each poor family which has lost its bread winner will be paid Rs. 1,000/-

The State Government have, initially, allocated Rs. 15 crores for immediate relief measures. The Central Government has released Rs. 5 crores as advance plan assistance for relief operations.

RELIEF TO CYCLONE VICTIMS
TAMIL NADU ALLOTS Rs. 100 CRORES

A package of wide-ranging reliefs and concessions, likely to cost Rs. 100 crores to the State Exchequer, was announced by the Tamil Nadu Government for the people affected by the recent cyclone and floods.

A decision on the relief and rehabilitation measures was taken at a meeting of the Tamil Nadu Cabinet held under the presidentship of the Chief Minister, Thiru M. G. Ramachandran.

In areas where crops had been damaged, the short-term co-operative loans would be converted into medium term loans and arrangements would be made for the issue of necessary "Annavari" certificates. In respect of current medium term loans, the Reserve Bank would be approached for giving as much relief as possible.

Free Seeds :

Regarding paddy crops, for the Thaladi, seeds would be supplied free, while fertilizers would be given at 25 percent subsidy (the remaining 75 per cent of the cost would be given as co-operative loan). In many places, the Samba crop had been submerged and salvaging it would require an extra dose of urea. Onefourth of the cost involved would be given as subsidy and the balances as co-operative

A Cyclone that Battered Tamil Nadu

The North-East monsoon set in on 13th October this year. It began to pour and not merely rain, with Thanjavur district recording an excess rainfall by 190%, Ramanathapuram 160%, Chengalpattu 55%, Tiruchi and Madurai 80 to 180% and Tirunelveli topping it all with a rainfall 7 times its normal ! The city was lashed by rains for over a fortnight by heavy and continuous rains and high winds, consequent on the successive depressions formed in the Bay of Bengal, which paralysed normal life in the city. The rainfall in the city was abnormally heavy and continuous, the metropolis recording 609.7 cms in the first wetspell on 17-10-77 to 26-10-77 and 259.6 cms in the second between 11-11-77 and 19-11-77 . About 10,000 huts got destroyed or damaged. More than a lakh of persons had to be evacuated from the slums and the low lying areas and lodged in camps in more than 200 schools and 5 major relief camp centres. The number of people fed daily was a lakh. Each of the camps had to be organised on a self contained basis, not only with lighting, milk supply, protected drinking water and latrine facilities but also with a clinic under a Medical Officer and sanitary arrangements in charges of a health officer — a colossal effort in terms of man power, organisation and, money running to crores of rupees, covering not only these arrangements, but also repair and renewal of roads, storm water drains, public conveniences and school buildings. The food packets distributed alone came to 13.25 lakhs. Areas like Vyasarpadi, Kotturpuram, Velacheri were particularly affected while Casimode suffered from severe sea erosion, causing extensive damage to Fishermens' Colonies and their very means of livelihood.

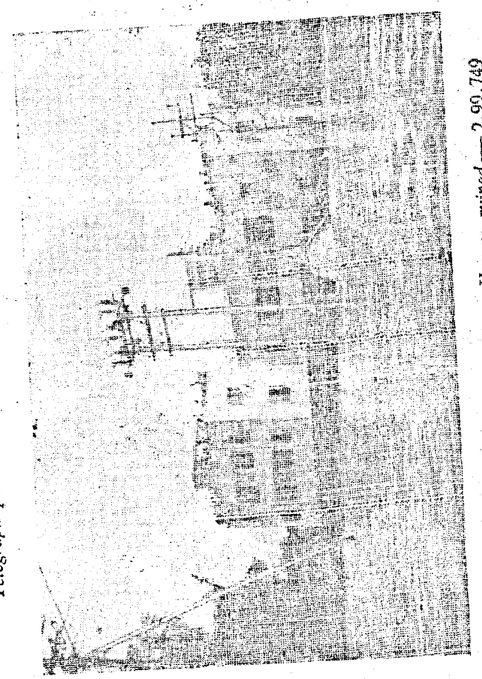
Conditions in the rest of Tamil Nadu were not far different. For the period 1st October to 17th November, Tamil Nadu had a total rainfall of 14,824 mms which was 6,219 mms or 72% more than the normal rainfall. The Ramanathapuram Big Tank developed a big breach on 28th October. But for the vigorous action taken by the Revenue, Public Works and the Police Departments and vigilance of the public in cutting open the bund and letting the Vaigai Floods into the sea, the town would have been in dire distress. Similar preventive measures were also taken regarding the bigRajasingamangalam tank.

The depressions formed in the Bay intensified into a cyclone which struck Nagapattinam (Thanjavur district) with winds blowing furiously at 100 kmph from the midnight of the 11th November till about 1,000 hrs on the 12th, gradually tapering off in velocity. Nagapattinam taluk was reduced to shambles. The eastern part of Thanjavur district was also affected. In fact, the cyclone had played great havoc affecting Pudukkottai, Tiruchirappalli, South Arcot and Madurai districts. Many of the rivers, canals and jungle streams were in torrents, They overflowed inundating the adjoining areas. Lakhs of paddy fields had been submerged, the damages running to several crores. Thousands of acres of coconut topes were laid waste. The fate of the meeher plaintain plantations cannot be imagined. Similar was the fate of Cotton, Sugarcane, Betelvine and millet crops.

Dozens of villages in Thanjavur, Tiruchi, Pudukkottai and Madurai districts were marooned, because of the floods in the Cauvery, Coleroon, the Vellar and the Kodaganar-Tiruchi and Karur towns were threatened by floods by the Cauvery and the Amaravati. The Amaravati railway bridge was washed away near Karur. Srirangam town was isolated. There was total disruption of communications — even the police radio network was adversely affected. There was extensive power failure. The telephone network was cut off. Lakhs of fallen trees, overflowing rivers, canals and channels blocked road and rail communications. Nagapattinam Port was in shambles, the jetty collapsing at the centre and all the warehouses shattered to smithereens — All the thatched huts had been blown off in many of the districts. Even the tiled and RCC structures in East Thanjavur could not stand the velocity of the winds. These suffered heavy damage. The Nagapattinam Steel Rerolling Mills had all its asbestos roofings ripped off.

An aerial survey of the affected areas was made on 18-11-77 by the Chief Minister, the Food Minister, the Relief Commissioner, the General Manager, Southern Railway and other officials. Union Ministers also made a serial survey of the Flood hit areas. The President of India made an aerial survey of the affected areas, accompanied by the Chief Minister and Union Minister for Agriculture. The President was deeply shocked over the extent and magnitude of the widespread damages to public and private property.

Telegraph posts and telegraph lines had got disrupted



Houses ruined — 2,99,749
Cocoanut trees fallen — 1 lakh

Thousands of houses had colapsed rendering lakhs of people homeless.

Lives lost — 557
Area of Paddy laid waste — 4,46,698 acres
Reported missing — 199
Cattle lost — 21,982
Area of Plantains laid waste — 14,000 acres
Cattle missing — 767

loan. All farmers would get plant protection chemicals at 25 per cent subsidy till March 31, 1978.

The sandcast lands would be reclaimed by the Government at its cost, while the other landholders would be granted 50 per cent subsidy for the purpose. Extensive damage had been caused to coconut, sugarcane and banana crops. In the affected areas, coconut seedlings would be supplied free. Subsidy would be given at the rate of Rs. 100 per acre for retrieving the affected sugarcane and banana crops. Small farmers would be given subsidy for buying seeds and fertilizers and this concession would be available to those holding 2.5 acres and less of wet land, or five acres and less of dry land, and to tenant cultivators.

Lands affected by the natural calamity would be exempted from land revenue and other land taxes, water cess and other water charges, and cash crop leavy. Local cess also would be waived wherever this exemption was given. Government would ask the Panchayat Unions to waive the Local Cess Surcharge also in these areas. For those who get this remission, recovery of Takkavi loan arrears and the instalment payable, in the current year would be postponed from Fasli 1387 to Fasli 1388.

C.M.'s Flood Relief Fund Contribution as on 6-12-1977

Rs. 82 Lakhs

Prime Minister's Relief Fund Loan

Rs. 34 Crores

Those who had lost their cattle would be given credit facility, through co-operatives, to buy animals. Fishermen would be given assistance on a half-grant half-loan basis to buy catamarans, country boats or nets. As for relief to handloom weavers, data were being collected about the loss they had sustained on account of the catastrophe. Once they were ready, Government would announce concessions for the weavers.

Government had decided to increase the ex-gratia payment from Rs. 100 to Rs. 200 to those who had lost their houses. Further, Central aid would be sought to enable them get Rs. 300 more as loan towards meeting the cost of re-building their houses. With the concurrence of the Centre, building materials, like bricks, thatches, bamboo and casuarina poles, would be brought under the purview of Essential Commodities Act with a view to controlling their prices. Retail outlets would be opened in the affected areas to make these articles readily available. Efforts were being taken to import them from other States also.

The Chief Minister said the Centre was being requested to enhance the cement quota for Tamil Nadu to enable it meet the extra demand for the commodity. The District Collectors had been permitted to construct dormitories for the flood victims to live till new dwellings were ready.

Donations flooding the coffers from the 4 corners of the country. Relief in cash and kind from across the seven seas.

One of the worst-ever cyclones hit Tamil Nadu causing damage to human lives, animals and crops running into crores. Aid from all over the world come pouring in.

The Prime Minister Thiru Morarji Desai has contributed Rs. 1 lakh from the Prime Minister's National Relief Fund towards rehabilitation of the cyclone and flood affected victims of Tamil Nadu.

Later the Prime Minister contributed Rs. 10 lakhs as a second instalment.

One month's salary has been donated by the following Union Ministers : Prime Minister, Thiru Morarji Desai, Thiru Charan Singh, Thiru Shanti Bushan, Thiru P. Ramachandran, Thiru H. M. Patel, Thiru Purushotham Koushik and the Speaker of Parliament, Thiru Hegde. The Union Home Minister Thiru Charan Singh and his wife have donated Rs. 2,250 each for the cyclone relief work in South India.

MPs of AIADMK Thiru Maya Thevar, Thiru Mohanarangam and Thiru Murugesan have donated a month's salary of Rs. 1,000 each.

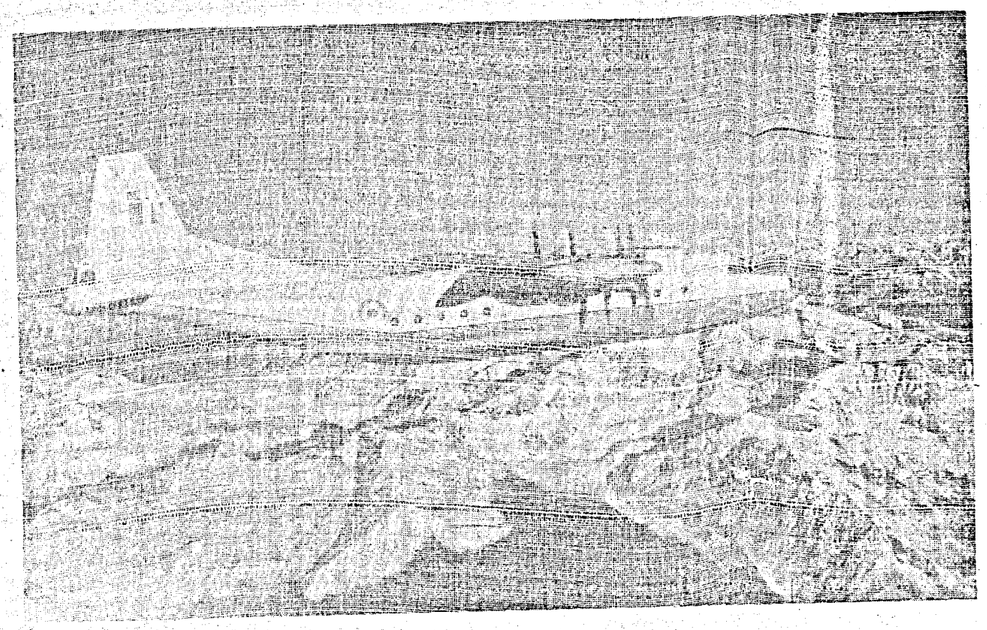
The three service chiefs have decided to contribute 1,000 tonnes of rations costing Rs. 30 lakhs to the victims in the South.

The public Corporations under the Aviation Ministry will contribute Rs. 5 lakhs ; Air India Rs. 2 lakhs ; Indian Airlines, ITDC, International Airports Authority each Rs. 1 lakh.

The Corporations under the Ministries of Defence, Power and Petroleum will contribute Rs. 10 lakhs each towards flood relief funds for the affected victims of Tamil Nadu.

The Maharashtra State Transport Corporation employees have donated one day's salary amounting to Rs. 7 lakhs. Employees of BHEL

(Contd. on Page 20)



MIGHTY UNITS BEHIND MAN AND MACHINE

The word Air-Force brings to one's mind, the aircraft and the pilot — the pilot who skilfully mans the machine in the sky with such ease. But the common man is probably unaware that behind the flying machine and the flier there is a mighty organisation entrusted with the task of keeping the aircraft in operational condition. A large number of highly qualified and skilled engineers, technicians, logistics personnel and a variety of other professionals whose life time mission is to contribute to the operational efficiency by ensuing high standards of maintenance and equipment when and where it is needed—go to make up this organisation. This is where Air Force station, Avadi and the Ground Training School, Tambaram come into the picture. The station at Avadi deals with supply of components and their preservation and the one at Tambaram turns over tradesmen in various skills.

The station at Avadi was established during the Second World War as a Royal Air Force base to stock equipment for operation in the Far East. It became an equipment depot of the Indian Air Force in 1947 after Independence. In 1958, a Base Repair Depot (BRD) was added. It is the only Air Force base where both the functions of maintenance command are looked after. It has a full-fledged depot where a variety of equipment required for air-craft as well as other purposes is stocked.

The outstanding feature of the BRD is the indigenisation efforts for the upkeep of a large fleet of vehicles which had been imported long back. Substitution of parts made locally is necessitated to conserve foreign exchange. One of the added advantages of indigenisation is that Madras has an advanced automobile industry as well as numerous firms manufacturing general engineering goods around Ambattur. Many components are made by workmen in the huge work shop. A number of combatants and civilian personnel work side by side, as a close knit team. Although the civilians are employed in a typical "Defence" set up, they are fully covered by trade union rights and privileges.

Practically all the combatants and a large number of civilians live within the Air Force campus. It is a community life — a true integration of various regions, religions, castes and beliefs, giving an ideal Indian national character — the most important prerequisite to the building of team spirit and commandeship.

The unit at Avadi has been converting waste into wealth, saving foreign exchange. Spares for aircraft purchased years ago (like bolts, nuts and screws) worth lakhs of rupees and which could have been

him to achieve that vital interface between the pilot and the designer which is so essential for the development of the aircraft.

The Production and Test Pilots Course trains pilot to test aircraft after production, repair and overhaul. At the School, endeavours are made not to teach academic subjects for their own sake. Efficient testing calls for perfect coordination between the scientist and the test pilot. The test pilot should have the ability to understand and speak the language of the scientist. The syllabus integrates ground training with test flying to help the pilot appreciate and understand the need for a particular test. In the first four weeks the students take a refresher course in the fundamental subjects like Mathematics, Dynamics Thermodynamics. Then comes the study of Aerodynamics, Stability and Control, Structures Propulsion, Weapon Systems and Flight Testing. As many as 300 lectures are delivered to the students by specialists in aeronautical subjects.

The flying training lasting 75 hours includes conversion flying, production testing of various types of aircraft, demonstration of flight test techniques of selected test exercises in flight and data recording. A medium transport aircraft, a bomber, a basic trainer and a supersonic fighter are used for training fixed wing pilots. Other pilots receive their training on light and twin-engine medium helicopters.

Organised visits to Aeronatuical Institutions is an essential part of the training. These visits give the students welcome opportunities to see for themselves the various activities involved in the design, development and manufacture of aircraft.

During the course, the students visit the Hindustan Aeronautics Limited and its Design Bureau, National Aeronatuical Laboratory (NAL), Aeronautical Development Establishment (ADE), Gas Turbine Research Establishment (GTRE), Electronic Research and Development Establishment (LRDE), Aeronautical Systems Analysis Group (ASAG), Indian Space Research Organisation (ISRO), Indian Institute of Science (II Sc), Air Force Technical College (AFTC) and the Institute of Aviation Medicine.

THE TEST PILOT SCHOOL HAS BECOME A LANDMARK IN THE HISTORY OF THE IAF. FROM ITS PORTALS EMERGE EXPERIENCED TEST PILOTS THE MANSTAY OF THE AVIATION INDUSTRY AND TRAIL BLAZERS FOR ACE FLIERS OF THE IAF.

The Test Pilots School also now undertakes training of full-fledged Experimental Test Pilots. The Experimental Test Pilot Course is open only to those pilots who have successfully gone through the Production Test Pilots Course and have been found suitable for further training. Having undergone an Experimental Test Pilot Course, a pilot becomes fully competent to undertake the complete range of prototype testing of an aircraft and evaluation of new airborne equipment, stores and system. He also masters the technique of analysing results and reducing them to standard conditions. He gets a deeper insight into the fundamentals of aerosystems and its various test techniques.

The Experimental Test Pilots course aims at developing in the trainees the habit of flying accurately while making observations and recording various parameters in flight. It imparts to them the ability to observe, record and analyse correctly, report comprehensively, accurately, logically and unambiguously. A successful experimental test pilot also acquires the ability to make qualitative assessment of various types or products.

The training imparted to Experimental Test Pilots is modelled on the syllabi followed at the Test Pilot Schools in England, France and the U.S.A.

The Test Pilot School of the Indian Air Force has saved foreign exchange to the tune of approximately 8.5 lakhs for every pilot earlier trained abroad. Gone, with its establishment, is the country's dependence on similar schools in the advanced western countries. With aviation becoming more and more complex and sophisticated, the country needs an ever increasing band of test pilots, and this requirement cannot be met by the limited number of vacancies available at the foreign schools.

The Test Pilots School has provided an answer to those problems. It has already become a landmark in the history of the IAF. From its portals are emerging experienced Test Pilots who promise to be the mainstay of the aviation industry in the country and trail-blazers for ace fliers of the IAF.

SARDAR PATEL

On the death of Sardar, on 15th December 1950, Shri Vinoba, before a gathering of villagers at his Ashram, observed that "a towering personality of the eminence of King Janaka has passed away from our midst. Amidst palatial glitter and royal pomp he had lived a detached life of King Janaka. Due to his presence in the Government, the people felt that the ship of the country was safe in his hands." This, to a degree, epitomizes Sardar's character and also refers abstractly to the services of Sardar at the altar of Mother Bharat that brought him a perennial name.

It was said of that celebrated philosopher, Plato, that he considered it to be God's greatest mercy on him that He enabled him to see the light of the day during the Age of Socrates and for the rare opportunity he had to be the disciple of Socrates. In all humility, when I think of the Sardar of the later twenties when he had galvanized into life the entire peasantry of the Bardoli taluq to give Bureaucracy one of the most decisive fights of the day with the matchless weapon of Non-Violence, I feel too that it was God's abundant mercy upon me to be able to devour with avidity those stirring sermons of the Sardar that instilled vigour and heroism in people like a magic touch and transformed their timidity into real valour. As Premlila Thackersey ruminates on those stirring days ; "Sardar had changed the simple and god-fearing peasants of Bardoli into men of valour, and the timid and ignorant peasant women, into Rajput heroines." Like Gandhiji Sardar made men out of clay, chiselled the man material and canalized their energies towards the enrichment of our national life.

Sardar's work in the relief field is practically an unknown matter outside Gujarat. But in that he took special delight and it will be truer to say that it is through this service of the Daridra Narayan that Sardar derived his suprehuman strength to serve the national cause.

It may rightly be said that Sardar is a pioneer of systematized relief work in Gujarat. As a Municipal Councillor (1918), amidst the outbreaks of plague and influenza, Sardar preferred to be by the side of people than leave the city for safety. Barrister Vallabhbhai of those days used to walk from cherri to cherri to give a word of comfort to the afflicted people and cheer up their sunken hearts. It is unimaginable to think of Sardar opening even temporary hospitals for providing medical relief to the plague stricken. But this Sardar did without any ostentation. The flood relief operations organised by Sardar covered practically the whole of Gujarat when she was laid low by the unprecedented monsoon rains lasting continuously for almost a week (1927). On the midnight of the day when rains began to pour in torrents, Sardar was sleepless. He could not check himself. Coming out of his house, he walked towards a friend's house in pitch dark and bursting rains and took the friend with him. They went round all the vulnerable spots of the city ; and this done, straight they went to the Municipal Engineer, and waking him from his sleep, took him with them to the Municipal Office. In no time, the menials and staff were summoned to duty and speediest steps were taken for the drainage of rain water and the city was saved from much further ruin. This was the exemplary sense of civic duty in the Sardar.

Gandhiji was then convalescing in Bangalore. He wired to the Sardar that he had no strength in him to move from place to place and yet he would come if Sardar approved of it. To which Sardar replied to the effect that if he would wish to test them how far they have imbibed his teaching of self-help and co-operation, would it be better if he could stay over there and recoup himself. And Gandhiji heeded to Sardar's advice, for he had abundant faith in Sardar's innate and profound capacity to overcome this calamity on Gujarat. Sardar's relief work had then reached the remotest and far-flung villages of Gujarat. The efforts were so systematic and organised that he could restore normalcy in Gujarat hardly in two months. The Government was stunned at the pomptness and thoroughness of this effort ; and thanks to Sardar's initiative, it felt impelled to earmark its funds to the tune of 2 crores and more in the form of cheap loans and gratutious money for the reconstruction of houses of the thousands of homeless. The full story of this mission of mercy will take pages. But suffice it to say here that this episode is a most inspiring page in his life-story and it had left its imprint on the life of Gujarat to such an extent that when such calamities overtake Gujarat that distant scene of 1927 becomes vivid to our eyes and inspires us to render service to the people in distress. Shri Ravishankar Maharaj typifies that ennobling tradition which Sardar has left as his legacy to the Gujarat of today.

But I must stop at that to come to the subject matter, *i.e.*, Sardar's contribution to the modern Indian policy ; in other words, his work of unification and consolidation of the country which unquestionably is an unprecedented act in the annals of this hoary country till this day.

During pre-partition days the Indian States 556 and odd, had occupied 45% of the land area of the country. When the ill-fated partition came, the area covered by them rose to 48% approximately. The area of the State of Jammu and Kashmir alone was 82,000 square miles. There were 15 States with an area exceeding 10,000 square miles. Again, there were at least 67 States whose dimensions ranged between 1,000 and 10,000 square miles. To put it succinctly India of those days was dotted with these bountiful patches.

States, constitutionally, were not treated as a part and parcel of the mother country. The successive British pronouncements, right from Queen Victoria's proclamation (1858) till Lord Wavell's clarificatory statement of May 46, had upheld this artificial separation of States from the mother country. Among the earlier constitutional verdicts, joint opinion of Lord Montague and Lord Chelmsford as stated in their report on constitutional reforms of 1919, is a striking example in point. "The Rulers should be assured in the fullest and freest manner that no constitutional changes that might take place (in British India)

Thiru
Prabhudas Balubhai Patwari,
Governor of Tamil Nadu

disposed of as scrap, has been made fit for use. The "Bharat Darshan" exhibiting the products available with the IAF went round the country. And this enabled several allied institutions to identify those required by them. One of the beneficiaries was HAL, Bangalore, which was agreed to lift stocks after rigorous tests for standards. Out of the nearly 5,000 such items, some are 30 years old but all are kept fresh, by the adoption of special preservative methods.

The IAF maintenance command with 31 units all over India and with headquarters at Nagpur, overhauls aircraft missiles, specialist M.T. vehicles, signals and ground equipment besides providing logistics support to all Air Force Units.

The Air Force station, Tambaram, is the only one of its kind which imparts flying training at the flying Training schools and ground Training at the ground Training School. The standards maintained is comparable to any other institution of its type in the country. The trained personnel are directly responsible for servicing maintenance and operational fitness of the aircraft, and attain a very high degree of professional competence.

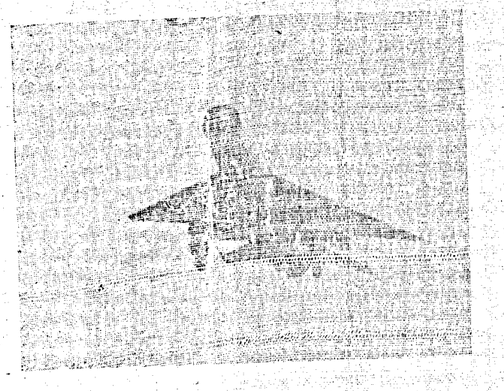
The No. 2 GTS is by far the largest institution of its kind in IAF training with almost equal number of trainees to that put together by other institutions. The mechanical stream trades for which training is imparted, moulds recruits hailing from the nook and corner of the country with different educational, economic, provincial linguistic back ground, into a well-disciplined, competent, dedicated technician, able to handle the most modern aircraft, weapon system and other highly sophisticated "equipment." They ensure 100% efficiency, because even a minor error will cost life, and money. It is not only the machine but the man behind it which matter more."

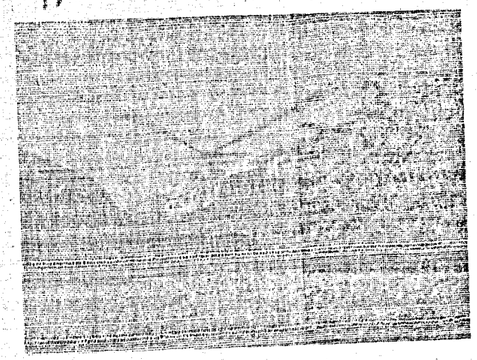
The term "technician" is used when a recruit from civilian life undergoes a total training of 64 weeks and is turned out as a competent tradesman, who on his own can handle and service sophisticated modern aircraft and other highly technical weapons systems which are in use in IAF. He is basically a combatant and then specialist in his own branch trade.

TEST PILOTS OF THE IAF

Forty-five years is not a long period in the life of an Air Force. During this short period, the Indian Air Force has made strides in many fields and on the eve of its 45th Anniversary it can feel particularly proud of a unique achievement — the establishment of a Test Pilots School of its own. The graduation in June last of the first ever team of Experimental Test Pilots of the IAF was a major development in the field of aeronautics in the country.

An Instructor demonstratating with the aid of a dummy model the functioning of the ejection system to the airmen technical trainees of the Ground Training School at Air Force Station Tambaram.

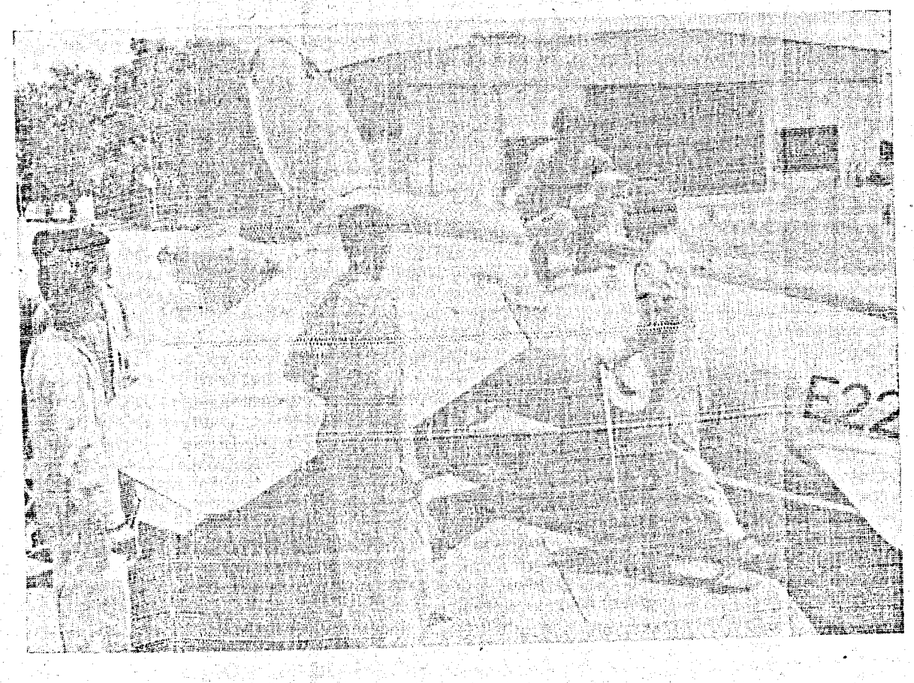




A country engaged in design, development and manufacture of aircraft requires trained Flight Test Personnel to prove its products in the air. In India this need arose with the indigenously designed HT-2 aircraft at the Hindustan Aeronautics Limited. It was in due course felt that training of Test Pilots abroad would not be economical or adequate. The training of Production Test Pilots was, therefore, started in India in 1973.

With the establishment of the Test Pilots School at Bangalore, India has become the fourth nation in the world outside the Soviet Union where this type of training is now imparted. The USA, the UK and France are the other countries in this select circle.

The Test Pilots constitute an indispensable link in the chain of aircraft designing. Self-sufficiency in the training of experimental test pilots aims at increasing indigenout capability in sophisticated aircrafs. designing. It is a test pilot who can decide which particular characteristics of a new aircraft are acceptable and which need change to be able to evaluate an aircraft capability. The test pilot must have adequate operational experience in the role the aircraft was designed to perform. In addition, he should have exceptional theoretical knowledge of aircraft belaviour in flight to enable



would impair the rights, dignities and privileges secured by them by treaties and sanads and engagements by established practice. "This imperial policy was aimed at killing two birds with one stone. First, it served as a weapon to check popular awakening in the princely India ; and secondly, it stood as a dividing line between the Princely and the erstwhile British India, ultimately making India's Unity for Independence a most unrealizable task.

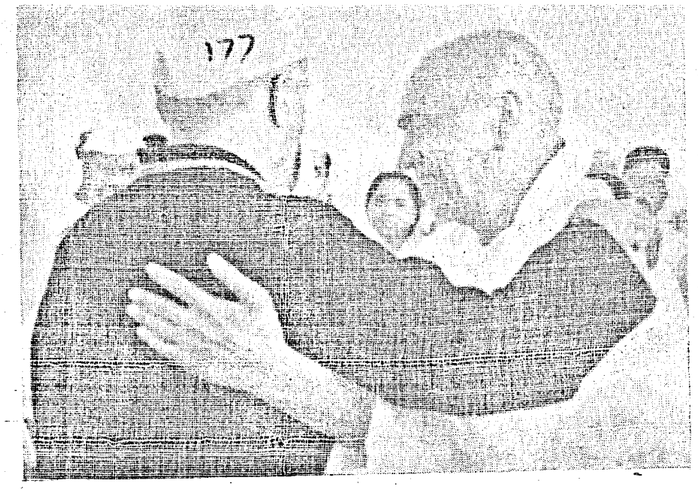
Let us have a little more peep into the Crown's Paramountcy over the States. As History records, the States, and the majority of them, were the off-shoot of the unsettled and chaotic conditions which culminated in the downfall of the Moghuls. "Some" as Sardar observed in his prefatory note to H. K. Mahtab's Story of Integration of Orissa State, "were the creatures of British rule intended to serve an imperialist purpose." It was on this variety that the die-hard political department of the Government of India and the Crown Representatives, *i.e.*, the successive Viceroys, sought to superimpose through this doctrine of Paramountcy, a uniformity of usage, conventions and practice, etc. as to their relationship with the State. How very elastic and undefinable this Doctrine of Paramountcy was can be no better described than what Buttler Committee observed (1927) that "Paramountcy must remain paramount (and) it must fulfil its obligations defining or adapting itself according to the shifting necessities of the time." In the annals of constitutionalism, this doctrine of paramountism, both in its interpretation and working, was an innovation of a peculiar kind and what a paradox it meant for the British constitutionalists and statesmen in trying to buttress such a net-work of feaudalism in India when they were working to the end of it in their own country.

The Government of India Act of 1935 was a step further in drawing a wedge between the Princely and the British India by excluding from its purview "the rights and obligations of the Crown in relation to the States," suggesting thereby that the Paramount Power, *i.e.*, the Crown, by virtue of its personal relationship with the States, was alone empowered to provide ultimate sanction for the enforcement of federal authority over the States. The Federal Scheme, as enunciated in the Government of India Act of 1935, was abandoned in 1939. But if one cares to have a look at those provisions, one can easily conclude that it had left it to the States whether to accede to the proposed Federation or not and that it was pre-conditional to the acceptance of the sovereignty rights of the rulers. Again, that accession in content, only related to a very limited field in the residency sphere. Internal constitution of the States was a matter extraneous to the framers of the Scheme of 1935. They were absolutely silent with regard to fundamental rights of the people of the States. In the proposed Federal Legislature, rulers alone could be the arbiter of the people. To put it in a nutshell, the rulers executive authority was preserved as well-nigh supreme under Section 8 (1) (*c*) (*ii*) of the Act thereby circumscribing the executive authority of the proposed Federation. The Cripp's Draft Declaration of 1942 was hardly any departure from the previous authoritative pronouncements and Lord Wavell, during his negotiations of 1945, had preferred to keep silent over it.

To come tothe Cabinet Mission's plan for the transfer of power, they, in their Memorandum on States, dated 12 May, 46, had stated that "His Majesty's Government will cease to exercise the powers of paramountcy. This means that the rights of the States which owe from their relationship to the Crown will no longer exist and that all the rights surrendered by the States to the Paramount Power will return to the States. The void will have to be filled either by the States entering into a federal relationship with the successor Government or Governments in British India, or failing this, entering into political arrangements with it or with them . . . . ." This statement of the Cabinet Plan was reinforced in toto by his Majesty's Government in its 3rd June, 1947 Statement that "their policy towards Indian States contained in the Cabinet Mission Memorandum of 12 May 1946 remains unchanged. "Pertinent would it be to quote Lord Wavell's assurance to the Chamber of Princes on 12 May, 1946 that "there was no intention of making proposals for the entry of States into Indian set-up on the basis other than that of negotiation."

Was this not an unpropitious beginning with the shadow of partition looming large over the Indian horizon ?

How remarkably was this position summed up by that veteran statesman Shri C. Rajagopalachari in his letter of 8 June 46 to Sir Stafford Cripps. Said he: "The doctrine laid down without consulting us that with the withdrawal of British Sovereignty, Paramountcy ends and that, as a consequence, the 565 Indian States automatically attain a chaotic independence is indefensible. Largely, historically, politically and morally it is wrong. Until 1935 there was no distinction drawn between the Crown and the Governor General-in-Council in regard to the treaties and obligations between the Indian rulers and the Paramount authority. A new doctrine of distinction was invented in 1935, in view, I believe, of the unavoidable and progressive transfer of power from British to the people of India . . .Paramountcy came into being as a fact and not by agreement; and on British withdrawal, the successor authority must inherit the fact along with the rest of the context . . . . Indian States have had no international status, and is H.M.G. now going to sponsor them and create conditions which they themselves had regarded as impossible when they were in charge of the Government of India ? . . . . . Something should be done to prevent this chaos and discourage tendencies on the part of more powerful States to declare what they call "Independence." This appealing letter, except for some pious gestures in return, had proved to be of no avail.



The Chamber of Princes, on its part, was no less behind to reap the harvest of such an anomalous situation totally in their favour and at the cost of India's unity. Indeed their Chancellor had assured Mr. Jinnah, prior to his departure for London during December, 1946, on the invitation of H.M.'s Government to Indian leaders for holding talks with them on constitutional matters on the eve of the opening of Indian Constituent Assembly, that "princes could be depended upon to fall in line with a policy which His Majesty's Government might initiate after London talks. The States can never idealogically agree with the so called progressive reaction of the Congress and that Congress policy hitherto has convinced the princes that their safety and their very survival would depend on British support and the help of such friends as the League." However antagonistically it pursued its seccessionist path is visible to the eye from their resolution of 29 January, 1947, that any negotiation on their part with the negotiating Committee of the Constituent Assembly must not be binding on them, that their soveriegnities must stand in tact that they must be assured of the guarantees and safeguards due to them and that the ultimate decision to join or not the Constituent Assembly of Emerging India lay with the States individually. Apparently enough, the Chamber of Princes had not a whit of concern for the unity and integirty of India and all its wranglings and machinations, until its ignoble eclipse in June 1947, constitute an eloquent evidence of their fissiparous activities towards balkanization of our sacred and hoary motherland.

How Sardar arrested this process and persuaded the States, one after another, to accede to the Union, though, to begin with, on a limited basis in order to assure their participation in the Constituent Assembly even before India achieved its Independence and how on its dawn Sardar worked step by step towards that Unity of the country as we see it today, is a marvel absolute indeed. Only the main threads of that resurging drama can be touched upon in the gamut of this essay.

Sardar knew —and knew it well — that delay meant a disaster and so by wooing and also, at times, by speaking bluntly to the recalcitrants and by nipping in bud the nefarious designs of some of the princely States by a close watch on events within their territories and by swift countermoves to undo those designs without any **hullabaloo**. Sardar could bring home to the Princely Order that their interests were not separable from those of their people and they being the part and parcel of the larger fraternity that is Mother India, it was in their interests to surrender their titular sovereignties at the altar of Mother India. And the Princes realizing that Sardar would only play fair to them and would also protect their legitimate rights and interests under the new dispensation vied with one another in patriotic spirit of duty in giving practically a **carte blanche** to the Sardar for what they possessed and ruled by virtue of their past prowess or otherwise.

Was there a compulsion in the process ? If it were so, things would not have moved so swiftly. Nor would they have held Sardar in such high esteem ; neither would they have felt so much forlorn after the demise of Sardar. It was not the duplicity of Lord Wellesley nor the ruthlessness of Prince Bismark — for Sardar was far from it — but the act of most genuine, benevolent and outstanding statesmanship imbued with burning spirit of patriotism in him which made princes to read the signs of times-and to rise up to meet those demands of the time in a spirit of comradeship and patriotism. This coupled with Sardar's spirit of utmost accommodation and understanding and the faith they carried in his words set the ball of this bloodless revolution rolling in full, swing and in it the princes, the people of the States and the Government of India indeed played like cooparaters for a consummation so devoutly nurtured by the savants and the patriots of the ages and kept over burning by the ennobling spirit of the Mahatma, but at last sunk to greatest dejection and misery by the vivisection of the Mother of his Dream for which alone he worked and lived and died in a manner which has no precedent in history.

To revert to this most inspiring page of history of which Gandhi was a dreamer and an inspirer and Sardar the instrument of action, this revolution which in right sense, made its debut in December 1947 in the form of merger agreements with 40 B and C States of Eastern and Central India took into its "whirlpool" a veritable jig-saw puzzle of 449 different jurisdictions of Kathiawad involving the territory of 22,000 square miles all merging into the Union of Saurashtra. That spectacular event gathered such

momentum and speed that from February, when this coveted union appeared on the political map of India, till up to July 1948, the Unions of Matsya, the smaller Rajasthan, the Vindhya Pradesh, the Malwa alias the Madhya Bharat and the Pepsu, etc., emerged on the map of India in quick succession, thus practically marking the glorious end to this revolution and thereby adding nearly 4.5 lakhs square miles of territory to our motherland.

Only two unions, *i.e.*, the Union of Greater Rajasthan and the Union of Travancore-Cochin were formed afterwards in 1949 and they were like the finishing touches to the new edifice of India that we see today.

While accomplishing this task of integration, Sardar's eye looking into the future, had some strategic considerations too in his mind. He first untied the gordian knot of Saurashtra because it was in that part of the country, some bold attempts for the balkanization of the country]were mooted. He assigned Cutch to Central Administration for he thought of it as a vulnerable spot by virtue of its geographical position in the defence strategy of India. His anxiety to form the Union of Pepsu at the earliest possible opportunity was actuated by these very considerations to provide a stable base of defence against onslaughts from the North.

Junagadh, Hyderabad and Kashmir were the only States which created a plethora of problems for their integration into the Mother land. While Sardar could play his full role in case of Junagadh and Hyderabad, he was thwarted from acting in the case of Kashmir although it was essentially a 'subject' relating to States Ministry and was initially treated as such. It is worthy of note that how K.P.S. Menon flew to Srinagar and Jammu to get Maharaja's assent to the Instrument of Accession when the enemies were at a stone's throw from Baramula and how Sardar anxiously awaited his arrival for hours at the Delhi aerodrome not to lose even a moment to rush up Military by air in aid of the Valley. This is a fascinating story of dash and quick action and the great valour of our forces on the maountaineous terrians of Kashmir. But soon Sardar was disillusioned by the way the whole issue was being handled in Delhi ; and, in sheer desperation, he had practically washed his hands of this intriguing business. Yet when the question of Kashmir's constitutional ties with India came up in the Indian Constituent Assembly, he could not brook the overtures of Sheikh beyond a point and that link though liberal in nature has proved to be a vital link in India's relationship with Kashmir.

Sardar, to quote his own words, has bequeathed to us "a real Union of the Indian people built on the basic concept of the sovereignty of the people. It removes all barriers between the people of the States and the people of provinces and achieves for the first time the objective of a strong democratic India built on the true foundation of a co-operative enterprise on the part of the peoples of the Provinces and the States alike."

Mankind, in its craziness, is often enamoured of victories of war and bloodshed rather than of enduring consquests of peace. But the greatest of victories as history tells us in terms of progress of humanity, have invariably proved either a mixed blessing or a mixed curse ; and, in terms of time, most of such dazzling victories still adorn the pages of history, have passed into oblivion in the succeeding years. Sardar's work of unity and consolidation, silent and revolutinary and affecting a nation of such dimensions, with its angularities and complexities, if reflected upon, keeping in view the means he employed and the benedictions it brought upon millions of people of the Princely India struggling to live rightfully and honorably like the rest of the citizens of the land, one will quickly grasp that it was the loftiest human effort for uniting Indian humanity into one distinct and uniform pattern for the good of the mother land. That unity has stood us in stresses and the fabric of that unity is so woven that if we would only be alert and live to our duties, it can stand any storms or tempests in the future. For this lasting be on, we owe much to the Sardar. Though objective evaluation may be difficult, as we are too near the events, future generations and historians will see through the truth and acclaim the achievement.

My humble salutations to that Supreme Guardian and consolidator of our Nation !

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The Minister for Local Administration **Thiru Kalimuthu** *giving cash relief to flood affected victims at Vedasandur.*

The Minister for Labour **Thiru Raghavanandam** *visiting a hospital at Nagapattinam.*

The Minister for Agriculture **Thiru Kolandaivelu,** *supervising food being prepared for the victims at a relief centre in Pudukkottai.*

(Contd. from Page No. 8)

donated a day's salary amounting to Rs. 1.50 lakhs. Maharashtra Government Rs. 2 lakhs ; West Bengal and Gujarat Governments 1 lakh each for Tamil Nadu.

The Varadharaja Swami Temple Trust at Kancheepuram donated sarees worth Rs. 1,800/-.

The Collector of Chingleput has collected Rs. 16,479.63.

Employees of the Accountant-General's Office, Madhya Pradesh will contribute one day's salary.

The Himachal Pradesh Chief Minister announced that a sum of Rs. 30,000 will be donaed. The Governor has sent Rs. 2,000.

The Bihar Governor has sent Rs. 1,000 ; Bihar State branch of the Indian Red Cross Society has sent Rs. 5,000 ; Bihar Chief Minister has sanctioned Rs. 25,000/- to victims of Tamil Nadu.

The Minister for Excise and Urban Development of Orissa as his personal donation has sent Rs. 500/-.

A team of volunteers from Orissa with food and clothing will undertake relief work.

Representatives of Gujarat and Haryana informed that their Governments had announced contributions.

Representatives of the sugar industry, alcohol industry, the distilleries association of India assured that they would do their best to the victims of the cyclone affected areas.

Relief Committee formed for South in Delhi :

A Central Relief Committee for providing assistance to the victims of cyclone in Tamil Nadu, Kerala and Andhra Pradesh has been formed. Donations in cash and kind including non-woolien clothings, medicine and vessels will be collected.

Banks' Donations :

Thiru M. V. Subba Rao, Chairman and Managing Director, Indian Bank presented a cheque for Rs. 3 lakhs.

The Indian Overseas Bank has donated Rs. 3 lakhs.

The South Indian Film Chamber of Commerce will be contributing through cinema houses a day's collection.

HPF has donated Rs. 1 lakh worth of X-ray films for use in providing medical relief.

Bala Mandir has offered to take in orphan children below the age of three.

The Madras Race Club has donated Rs. 1 lakh.

Donation of Drugs :

Pharmacists in the city donated drugs worth of Rs. 40,000.

Red Cross adopts villages :

The Tamil Nadu Red Cross Society has adopted 10 flood affected villages in Vedasandur taluk in Madurai district for rendering rehabilitation assistance.

From Abroad :

Victims of the cyclone and tidal waves that devastated South India will receive an additional £ 12,069,000 of disaster relief assistance donated by the United States AID.

The new assistance, channelled through three American voluntary agencies and the league of Red Cross Societies, consists of cash grants to construct emergency shelter and provide clothing, blankets, medicines and other relief.

The league of Red Cross Societies will receive £2,00,000 for the Indian Red Cross.

Earlier the U. S. Government provided £ 3,00,000 in food and a £25,000 direct cash donation to CARE. The food consists of 1,300 metric tonnes of bulgar-wheat.

U.S. Government will have donated approximately 2.4 million dollors.

Canadian Churches' contribution :

The Canadian Council of Churches has contributed 2,08,000 dollars to provide relief to the victims.

Other Organisations :

Canadian branch of UNICEF £1,50,000 ; World Vision £ 1,25,000 ; Canadian Catholic Oeganisation and Development and Peace £ 25,000 ; Canadian Baptist Federation £15,000

Neuonite Central Committee £10,0000.

United Church of Canada £10,000.

Indian Social and Cultural Associations in Ottawa have opened an Indian Cyclone Relief Fund and are hopeful of collecting £ 10,000.

P.M.'s Relief Fund Rs. 43.6 lakhs.

Shronmani Gurudwara Prabandhak Committee : M.P. Rs. 10,000 for South.

King of Bhutan Rs. 10 lakhs.

Prince Karim Agha Khan Rs. 10 lakhs for South.

Clothes from London to flood victims:

A special aircraft arived at Meenambakkam Airport carrying five tonnes of blankets and clothes towards relief to the flood victims.

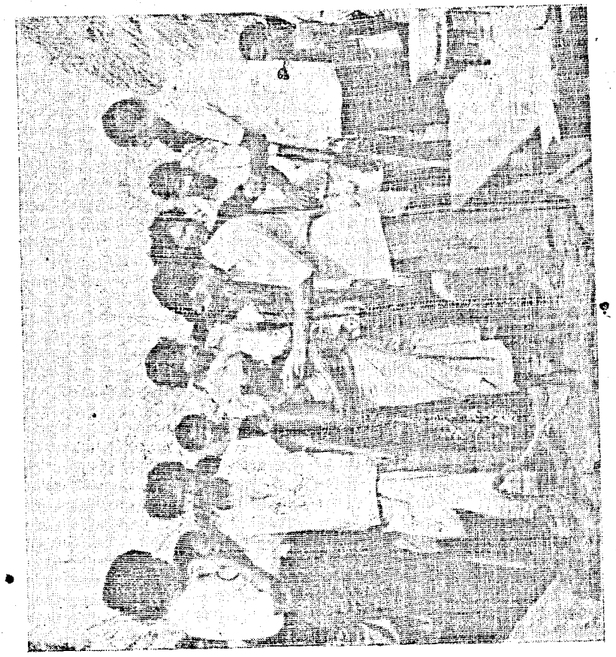
The Tamil Nadu Government has sanctioned Rs. 5 lakhs from the Chief Minister's Relief Fund towards purchase and distribution of rice to the cyclone affected fishermen families in Chingleput, Madras, South Arcot, Thanjavur and Pudukkottai districts. Rice at the rate of 5 kg. per family through local fishermen co-operative societies will be distributed.

Caritas. India has earmarked Rs. 1 crore for relief and rehabilitation programme in the South. Foreign donor agencies of Caritas have already donated Rs. 16 lakhs as the first instalment.

The World Federation of Trade Union has donated £ 10,000 (Rs. 90,000).

Dr. P. P. Narayanan, President of the International Confederation of Free Trade Unions (IFTUC) presented a cheque of £ 1,000 (nearly Rs. 9,000).

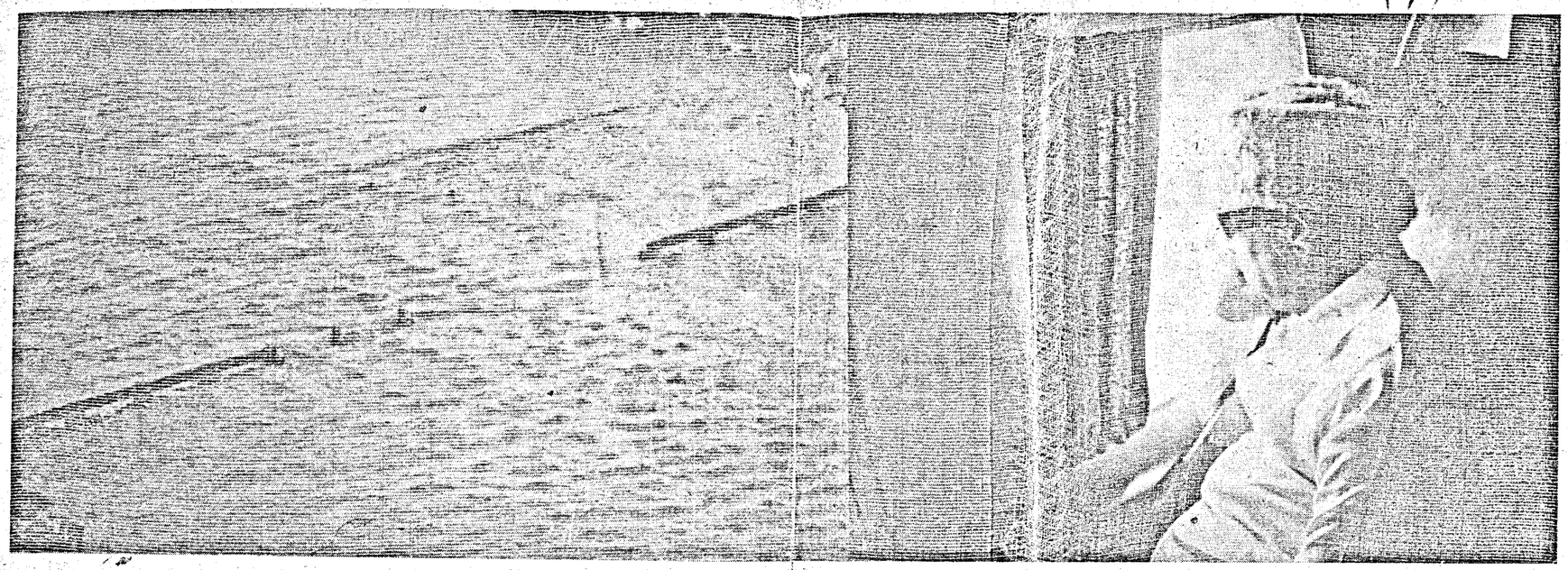
Relief Operations



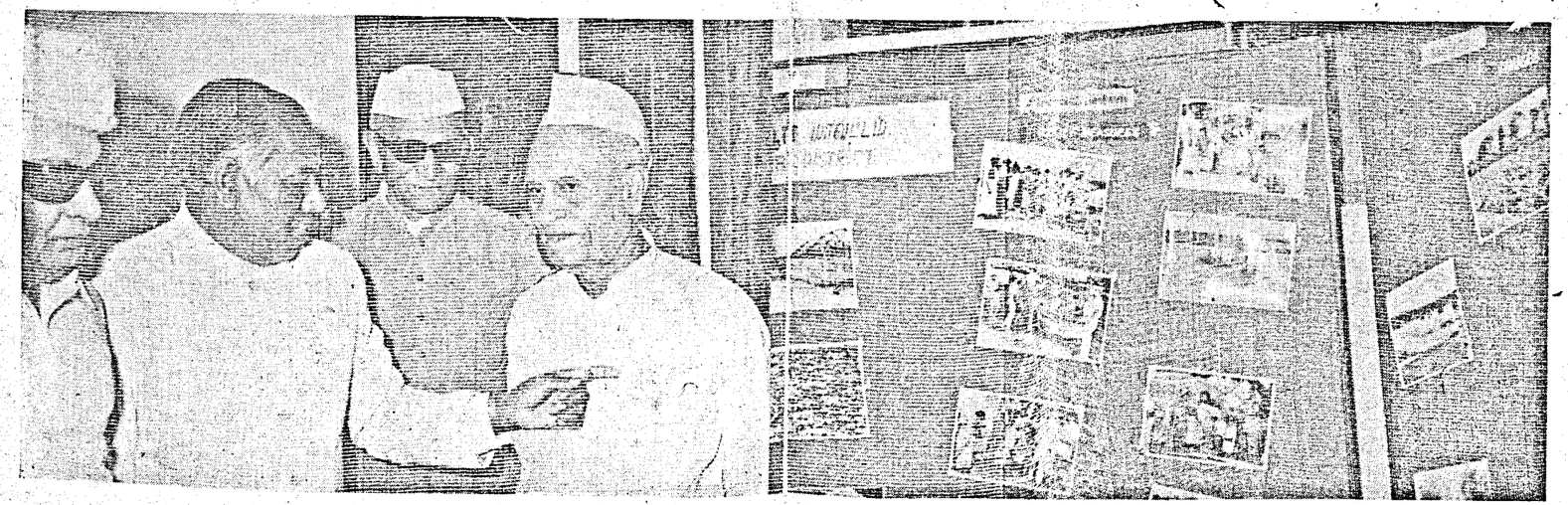
Food supplies taken in boats

Rice distributed to victims in flood hit areas

Medical check-up of flood affected victims



The Chief Minister, Thiru M. G. R. made an aerial survey of the flood affected areas on 13—11—1977.
He is viewing the Karur—Tiruchi Railway Track across the Amaravathi which was washed away by floods.



The Prime Minister Thiru Morarji Desai visited the flood affected areas in Tamil Nadu.
Here he is looking at the photographs of the flood hit areas.
The Governor Thiru Prabhudas B. Patvari is looking on. The Chief Secretary Thiru V. Karthikeyan is explaining to the Prime Minister.
The Chief Minister Thiru M.G.R. is seen with the Prime Minister.

The Union Minister for Petroleum **Thiru Bahuguna** presented medicines worth Rs. 5 lakhs on behalf of Indian Pharmaceuticals Ltd., and Indian Anti-biotics Ltd., to the Chief Minister **Thiru M.G.R.** He also presented Cheques for Rs. 3 lakhs & 1 lakh on behalf of I.O.C. & Madras Refineries. Union Minister for Energy **Thiru P. Ramachandran and Thiru K. Manoharan** Minister for Finance are also seen in the picture.

The Union Minister for Petroleum **Thiru Bahuguna** distributed blankets to the victims at the Relief Centre at Gandhi Mandapam in the presence of the Chief Minister **Thiru M.G.R.** on 18-11-77.

Thiru James Lory, Administrator, CARE, Tamil Nadu presented to the Chief Minister **Thiru M.G.R.** a token gift of food articles at the Secretariat on 19-11-77. **Selvi P.T. Saraswathi,** Minister for Social Welfare is also seen in the picture.

AGRI EXPO '77

THE fabulous temple tower crowning the Tamil Nadu pavillion gives an appearance of grandeur. The tower is modelled after the tower of the great temple of Brahadeeswara at Thanjavur. The tower has been constructed with palm leaves and coconut leaves by the traditional artisans of Thanjavur.

To the left of the main entrance is a chariot fashioned after the one at Valluvarkottam. It is made entirely out of grains-paddy, millets, pulses, oilseeds, sugarcane, cotton etc. This chariot indicates the agricultural prosperity of Tamil Nadu.

A traditional reception with "Poorna Kumbam" awaits one at the entrance. Kuthuvillakkus are artistically placed around. The thanksgiving festival is well portrayed to give an idea of how Pongal is observed in Tamil Nadu.

Models of important places of tourist interest of famous temple cities like Kanchipuram, Mahabalipuram, Madurai, Tiruchi etc., and the waterfalls of courtallam welcome the visitors.

The various sectors such as agriculture, irrigation, livestock, poultry, forests and fisheries, the handloom and village industries are well-depicted through models, photos graphs, statistics etc., showing the march of Tamil Nadu towards prosperity.

Modern agricultural implements like tillers, motors, pumpsets, sprayers produced in Tamil Nadu are displayed prominently.

The traditional ghani used for extracting oil using bullock carts has become obsolete. A power ghani, occupies its place today to extract oil. This forms the central piece of attraction.

The Union Home Minister Thiru Charan Singh and Thiru M.G.R., Chief Minister of Tamil Nadu are going round the Tamil Nadu Pavillon.

The weaver at the loom reminds one of the exotic silks that Kanchi is famous for.

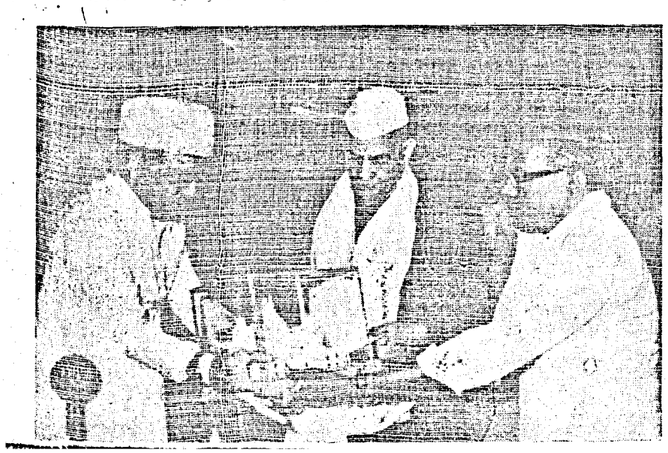
On display is a beautifully decorated "Pushpa Pallakku". As the name implies, the Pallakku is entirely done with fragrant flowers that Tamil Nadu is noted for..

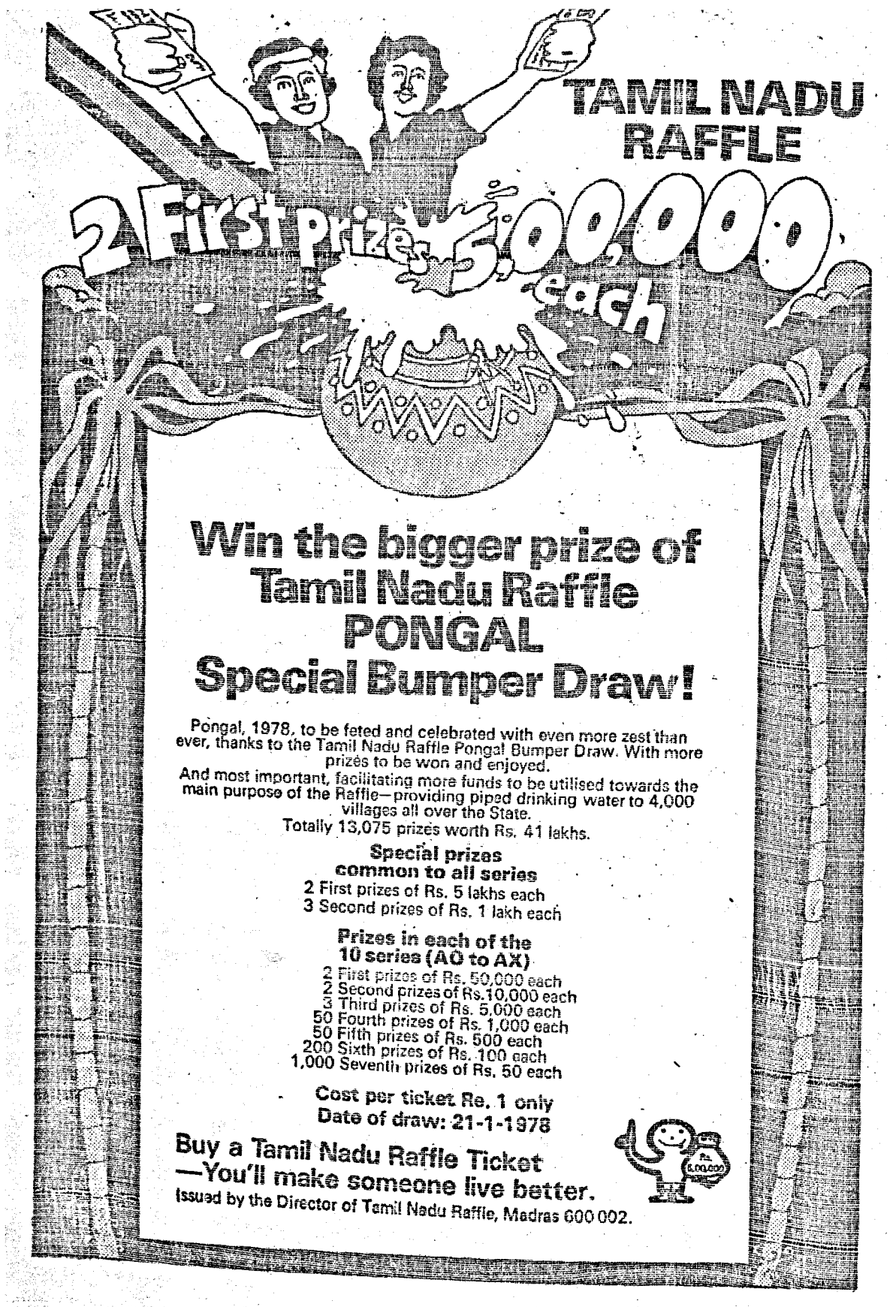
The progress achieved in the field of agro-based and rural industries show that the economic status of the people will be increased.

The Tamil Nadu Day was celebrated on 22nd November, 1977. The Union Home Minister Thiru Charan Singh was the chief guest. The Union Home Minister and the Chief Minister of Tamil Nadu Thiru M.G.R. were taken around the pavilion, by the Minister of Information and Tourism Thiru R. M. Veerappan. The Union Home Minister evinced keen interest in the exhibits. Commending the progress achieved by Tamil Nadu in the field of agriculture and rural development, the Union Home Minister said "Tamil Nadu is more advanced than even my own State Uttar Pradesh."

The Union Home Minister, Thiru Charan Singh was given a model of the Rock Fort Temple, Tiruchirappalli as momento by the Chief Minister Thiru M.G.R. **

The Chief Minister, Thiru M.G.R. is presenting a model of the Rock Fort at Tiruchi as momento to the Union Home Minister.
Thiru R. M. Veerappan, Minister for Information and Tourism is also seen in the picture.





COMMUNITY PARTICIPATION IN CORRECTION AND REHABILITATION

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By
S. SRINIVASAN
Chief Probation Superintendent, Tamil Nadu.

In the context of modern penology "correction" means all the aspects of work meant to restore delinquents — men, women and children — to a balanced and normal social behaviour ; and 'rehabilitation' means the social, mental and psychological restoration, as far as possible, of the delinquents to normal activity so as to enable them to resume their place in the home, society and occupation. Hence "correction" and "rehabilitation" presupposes that delinquency, except in a very few cases, is due to remediable causes, that the recovery of the delinquent is socially necessary and desirable, and that with proper understanding, study and sympathy, delinquency is tractable. Crime is as old as society. Human fallibility and aberrations manifest in various forms, and in every civilisation human beings have fallen outside the pattern of permitted conduct. There is no formula to draw up a scheme of benign behaviour which will hold good at all times. Restraints and controls on human conduct evolve out of necessity as social scenes and human beings change, from time to time. We all live dangerously close to crime although it may be unknown to us. A certain person may commit crime physically, but there are others who take an avid interest in crime, in criminal literature and in the media which portray violence. To quote Dr. Ahmed Siddique from his book on "Criminology", "there is a secret desire in every human being to identify himself with a certain type of crime. Although crime shock our sense of decency, there are certain types of crime of bravado, such as dacoity, robbery, mob-violence, etc., which sometimes give a vicarious pleasure and thrill to people."

Criminology can be said to consist of two significant parts, one which analyses those psychological, physical and biological aspects that contribute to crime behaviour and the other the study of the consequences of the crime and the measures to convert a law-breaker into a law-abiding citizen and to repair the damage caused to the victim of crime.

Until the turn of the present century, all the world over, the punitive and custodial aspect of detention had the main emphasis and prison was the only answer for the erring citizen. But during the last three quarters of the present century it began to dawn on the criminologists and on the thinking public that custody gave only temporary protection and that prisons and other custodial institutions served only as training grounds to become hardened criminals. Almost in all the States in India, Jail Reforms Committees were formed and the recommendations of which had far-reaching consequences, in jail administration. Jail authorities are trying their best in many of the jails to reform the prisoners in order to make them useful citizens of the country. In spite of all these, imprisonment, even in the best managed prisons has various drawbacks and the longer an offender remains in an institution, the greater is the harm that he is likely to suffer. The bad company in jail make the newcommer lose all finer instincts in man. It is widely recognised in all civilised countries that the most critical period in a criminal's life is that which follows immediately after his release from a correctional institution. The longer a prisoner is in an institution the greater are his diffuculties. He is like a cripple beginning to walk, whom the slightest push bowls over. The stigma of prison life is sufficient to deter anybody from associating with him. All our correctional reforms would be in vain, if at the time of a prisoner's liberation, he is cast forth abruptly and without support, to face all the challenges of life and all the temptations of liberty. The most terrible moment in a convict's life is not that in which the prison door closes upon him, shutting him out of the world, but that in which it opens to admit of his return to the world again having lost his character, reputation and standing among his fellow men, having suffered for months or years from the deprivation of the normal pleasures to which he was accustomed, and having little, if any, money in his pocket to meet urgent and immediate expenses. His condition is likened to that of a destitute patient in the convalescent stage and unless timely help is given to the released prisoner, he is very likely to revert to crime and thus endanger himself and the society. Therefore, Penologists and Criminologists began thinking of shifting the emphasis from the mere custodial operation to alternate measures for the permanent protection of Society which paved the way for the introduction of methods like admonition, binding over probation, parole etc., and consequently the reformation of the offender and rehabilitating him in the community gained importance.

The causes of crime are infinite in number, but yet they can actually be brought under a single heading —*viz.*, the relation or adjustment of individual personality to environment. The personality or "make up" of an individual seems to

consist partly of his biological inheritance from his parents and ancestors, recent and remote, and partly of his variation ; that is his own peculiar difference. The environment consist of the circumstances that surround him, the conditions which determine his development, the atmosphere—moral and material —in which he moves and breathes and to which he re-acts inevitably in many different and unexpected ways. This in short is the effect of the environment upon the individual and the individual upon his environment. Thus personality and environment are inextricably intertwined with each other. Crime is due partly to the nature of the criminal and still more to the circumstances, that made him what he is. It indicates that in any given case, the first need will be to ascertain which of these two alternatives is the chief cause of the offence. Without this knowledge one cannot well suggest a remedy or to come to grips with the problem — the problem of community participation in correction and rehabilitation. For, the whole problem of crime is essentially a problem of people who are in conflict with their environment and the vital issue now is to change this conflict and place them in co-operation with it so that society could be made a better place to live in for the people in general and the victims of offences in particular on the one hand and the delinquents who are also, ultimately members of the society, on the other hand. The prime object in maintaining law and order is to protect the public from harm ; and this is best done by diminishing crime by methods most likely to succeed in a given time. Another equally important purpose is the rehabilitation of the offender. Hence the aim of criminal justice according to present concepts, is not so much punishment for past misdeeds as the prevention of future crime. Man has to be punished. He must learn that anti-social activity undermines the very existence of society. Hence an offender must be purged of any germs which induce him or impel him to commit crimes. The success of the treatment and stabilisation of the moral values amongthe inmates in any correctional institution depends largely on the conscious rapport which the institutional authorities develop with the disturbed persons inside. The degre to which the rapport is achieved is the real touch stone of the success of "correction" in the real sense of the word.

Young offenders like all offenders, are people out of harmony with their environment, in conflict with some element in their daily experience. Children and adolescents are much more impressionable than adults. If spotted out earlier, by the parents or the teachers or the neighbours, they can more easily be studied and educated and trained to rule themselves or at least to adjust to the discipline of the community they live day in and day out. We cannot immediately change inherited characteristics, but fortunately through modern concepts of correctional methods and through a wilfing and positive participation of the community, we can to an extent hope to modify the environment and thereby modify the person who lives in it.

The most unfortunate fact is that modern social conditions are such as to make law-breaking a great temptation and sometimes an adventure to many people. This is especiallytrue at the young age, which normally and even under the most favourable conditions, is a very unstable one. Such offenders are easily pushed by mistakes handling with the ranks of recidivism, and they tend inevitably to spread an anti-social attitude to the circle they frequent. More lamentable still is the fact that our boys are not prevented effectively from crime, but driven to deliqnquency year by year and until this alarming increase in juvenile delinquency is controlled, the future safety of the society will be at stake since the juvenile delinquents of today would mostly be the adult criminals of tomorrow.

There is a remarkable diverstiy of views in the field of prevention and treatment of delinquency. The treatment so far meted out has not deterred the wrong doers effectively from further adventures of crime. May be, the fault lies in the multitude of theories relating to crime causation. However, it seems abundantly clear that a method of combining rehabilitation of offenders with systematic aid to communities to enable them to do a better job of preventing delinquency and helping the once delinquent to assimilate in the community as a normal citizen, would be, in the final analysis, the best way of tackling the problem. Purposeful action by the community to prevent delinquency will inevitably begin with efforts to rescue children who are already delinquent or on the verge of delinquency. This is important not only because every child is important but also because habitually delinquent children are the main precipitating causes of delinquency. They infect other children also in the community.

Apart from the several agencies of the Government engaged in crime prevention, treatment, control correction and rehabilitation, community participation may not immediately offer a short-cut to delinquency control, but are sure to contribute meaningful and significant social engineering of major proportions. Just as the community has a rightful role to play in the prevention of delinquency, it has an equally rightful responsibility to participate in the correction and rehabilitation of offenders, since we have to realise that most of the prisoners confined in Jails, the adolescents detained in Borstal Schools and the juvenile delinquents kept in our Approved Schools are to come back to society one day or the other. We have, therefore, to equip the community to receive them and rehabilitate them so as to protect the society from further danger from such people.

In our State, the Government have undertaken in a massive way projects for the rehabilitation of habitual criminals through the Police Department by forming Industrial Colonies in selected areas and Probation Officers are helping offenders on Probation, convicts released prematurely under the Advisory Board Scheme and the ex-inmates of Borstal School, Approved Schools etc., to rehabilitate in the community. The Discharged Prisoner's Aid Societies in various districts and the Nationalised Banks also play their part in extending financial assistance to ex-prisoners and others. However, a broad level of consent of the public is necessary as no system of law or authority can subsist without a good measure of general acceptance by the citizens. Public attitude have to be cultivated by a process of continuous education and giving a general understanding of the purposes of the law and its implementation. Not only public attitudes have to be cultivated by

creating a general awareness and understanding of the social defence policy goals, but provision should also be made to ensure that enlightened public opinion is reflected in policy formulation and programme implementation, such as amending the old and obsolete legislation, raising the level of insitutional services, strengthening the Probation and After-care services and stricter enforcement of measures to curb offences. Public should be involved in the process of change and public opinion so generated should be channelised to expedite changes in the desirable directions. The system of non official experts participating in the vocational and moral training programmes in penal and correctional institutions and a comprehensive and purposeful Jail Reforms are adjuncts to a healthy correctional and rehabilitation programme. To quote from a recent Supreme Court Judgment (Criminal Appeal No. 195 of 1977), the Hon'ble Thiru Justice V. R. Krishna Iyer and Thiru Justice Jaswant Singh observed "Sentencing Justice is a facet of Social Justice, even a whole personality. Till the new code cognised statutorily that punishment required considerations beyond the nature of the crime and circumstances surrounding the crime and provided a second stage for bringing in such additional materials, the Indian Courts had, by and large, an obsolescent backseat to the sophisticated judgment on sentencing . . . . . The long . . . . .period of prison sentence has to be converted into a spell of healing spent in an intensive care ward of the penitentiary if we may say so figuratively. How can this be achieved ? First by congenial work, which gives job-satisfaction — not jail fustration nor further criminalisation. We therefore, direct the State Government to see that within the frame work of the Jail Rules, the appellant is assigned work not of a monotonous, mechanical, degrading type, but of a mental, intellectual or like type mixed with a little manual labour. This will ensure that the prisoner does work more or less of the kind he is used to . . . . If competent Jail Visitors could organize for him a sense of ethics it may help him become a better man. Self-expression and self-realisation have a creative effect . . . . . In this connection we may even refer to proven advantages of kindling creative intelligence and normalising inner inbalance, reportedly accomplished by Transcendental Meditation (T.M.) propagated by Maharshi Mahesh Yogi in many countries in the West . . . . . We strongly feel that the humanitarian winds must blow into the prison baricades. More than this is expected in this decade, when Jail reforms, from abolition of convict's costume and conscript labour to restoration of basic companionship and atmosphere of self-respect and fraternal touch, are on the urgent agenda of the nation. Our prisons should be correctional houses, not cruel iron aching the soul . . . ."

Further, the working group on prisons headed by Dr. A. Gupta, Director, Bureau of Police Research and Development, New Delhi in their report submitted to the Government of India, in 1973, has, among other things, recommended that "the concepts of deprivation of liberty and segregation from society should be limited mostly to the habitual, the incorrigible and the dangerous criminals — short-term imprisonment does not serve any useful purpose. The fullest possible use should be made of the various alternatives to imprisonment as well as of open prisons. Non-institutional or semi-institutional forms of treatment should be resorted to as far as possible and also that the work programmes in prisons and other correctional institutions should be aimed at equiping the offenders to return to society with skills to help in their socio-economic rehabitation and that the prison administration should systematically involve enlightened individual citizens, associations, societies and other community agencies in the treatment, after-care and rehabilitation of offenders."

In every field of human activity there are successes and failures. If after-care and rehabilitation of offenders, where we are to deal with human wrecks there are bound to be obstacles and failures than where we deal with normal men and women. Regardless of the shortcomings or disadvantages of the homes from which the delinquents come, of the sordid conditions in the communities where they were reared and brought up, of the training they might have had in or out of the institutions, the after-care system alone is likely to be held responsible for any failures that might arise in rehabilitating them, because **after-care and rehabilitation are the last factors in our system of penology and it is the successful rehabilitation and the offender that must test the efficiency of all the other factors leading up to it** *viz.*, **the Police, the Judiciary, and the Correctional Institutions.** The men women and children who have been really benefitted by rehabilitation through our Probation Officers might pass into the silent obscurity of the average citizen since rehabilitation of the socially handicapped is still an unrecognised factor of our Social Defence Programme. The resources at the command of the Probation Officers who are entrusted with the task of rehabilitating offenders to achieve substantial, positive and permanent results are too meagre that our after-care work can be said to be perfect. We have to go on improving and with the stimulation and support we get from the various other agencies of Social Defence — *viz.*, the Police, the Judiciary, the Voluntary Organisations, Social Workers and parents, teachers, the Community and the Government, it behoves us to find ways and means of invigorating and improving our after-care and rehabilitation work so that no deserving ex-prisoner or ex-inmate of any correctional institutional shall be refused help which they might justifiably deserve or shall have the necessity to revert back to ways of crime.

The community participation in correction and rehabilitation depends on the understanding of human behaviour, the understanding of the nature and needs of our unfortunate brethern who deserve sympathy and help since they are the socially handicapped. Only when parents, teachers and the public recognise their own responsible part in preventing the younger generation into rebellion, delinquency can reach its minimum effectiveness. **Social climate must assist the process of making this new approach successful in order to invite the spontaneous co-operotion of all the relevant agencies concerned with the administration of criminal law and it is necessary that all social workers should educate pnblic opinion and propagate and popularise the basic ideas of correction end rehabilitation.** Only as police, magistrates and other law enforcement agencies discover the true nature of the human material with which they are dealing with, "correction" and "rehabilitation" can move up from an accident to an art.

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C. A. SRINIVASAN,
Managing Director.

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1824

RAJAJI

The Visionary and Statesman

It was Winston Churchill who said that one mark of a great man is the power of making lasting impressions upon people he meets ; and another is to have handled matters that the course of after events is continually affected by what he did. C. Rajagopalachari a loved and respected by his friends and well-wishers as Rajaji — fulfils both these hard tests. He was one of the greatest sons of India of the twentieth century. He is great in moral stature, great in intellectual acumen, and great in his all embracing humanism.

Rajaji had played many parts with great distinction and had adorned many high public offices including the highest . During his tenure as the Governor-General of India, his vision and statesmanship were of " inestimable help to the members of the cabinet and to the country, " in the words of the union cabinet's resolution passed on January 24, 1950.

There is no dearth of politicians but a paucity of statesman in India, where Rajaji was a true statesman. He had been sometimes wrong ; but no other public figure had been so often right and on so many diverse matters.

Rajaji's mind was like a razor. His mental processes had worked for decades at supersonic speed. The sweep of his mind could only be matched by the range of his reading. His vision was almost uncanny. Gandhiji once said, " Rajaji sees atleast six months ahead of me."

The Indian National Congress had adopted resolutions during special sessions during 1941 and 1942, condemning the aggression of Nazi Germany, Italy and Japan. There were also strong currents of public opinion in the United Kingdom and U.S.A., to enlist the support of Indian people in the war effort. The British Labour Party as well as the American Democratic and Republican parties had then suggested that for enlisting the co-operation of Indian Nationalists the British Government should immediately come to an understanding with them by forming a popular interim Government with the representatives of the Nation as an interim arrangement till the end of war after which independence should be given. The phenomenal victories of the Japanese army in South East Asia in the beginning of 1942 brought in a sense of urgency to the problem. Under such circumstances mainly at the instance of the Tory opponents, the British Government decided to send a mission to India to negotiate arrangements for the formation of interim Government with the support of all political parties in India.

Sir Stafford Cripps heading the mission came to India during May 1942. However, his efforts did not come to fruitition as the pro-British forces within the country did their utmost to rope in Mr. Jinnah and his stalwarts to demand the formation of a separate Muslim State. During the most vital stage of the negotiations, Mr. Jinnah wanted the British to include in their declaration of intentions that the interim Government will be formed for the duration of the war and the question of a Muslim State (Pakistan) will be considered along with the transfer of power. As the attainment of " Purna Swaraj " was the Congress motto, the British Tories had rightly concluded that the Congress would not accept such a proposition and the interim Government will not take shape at all. Events were drifting towards this end. But then Rajaji who saw through the British game and suggested to Gandhiji that since the Congress and the Indian Nationalists had aspired for freedom from the British yoke, it would not be wrong to accept the idea of the creation of more than one Independant State and therefore the Pakistan formula need not stand in the way of the formation of an interim Government. Such a move would have forestalled the British attempts to rake up communal passions in India.

Mahatma Gandhi saw the force of the suggestion made by Rajaji. But he pleaded powerlessness against the force of events. Congress under the guidance of a powerful lobby rejected Rajaji's advice and the Cripps Mission failed.

Rajaji's prophecy that the Biritish would rake up the communal problem in order to avert any settlement before quitting the country came true as was witnessed by the events of 1945 and 1946. Finally during 1946 an interim Government was formed with both the Congress and Muslim League representatives as a prelude to partition and independence. If Rajaji's advice had been accepted in 1942, the scope for further mischief by the parting British could have been minimised and the tragic events and massacre of the innocent Hindus and Muslims averted.

John F. Kennedy described the impact of Rajaji on him as " one of the most civilising influence since I became President."

He had the rare gift of being able to speak to different men at different levels. He could carry conviction to intellectuals with his powers of deep thought and precise expression ; he could address the masses equally effectively in terms which can stir their minds and hearts.

No problem had even been too big for his capacity or too small for his attention. He was a perfectionist in everything that he did.

His intellectual integrity, his indomitable courage and his absolute simplicity have already passed into a byword. However winds might veer or currents shift, Rajaji always steered by the same star and that star was his conscience and his intellectual conviction. No one had even been able to overcome his will or rupture his sense of public duty.

What had made Rajaji tower above the stormy scene for so long was the fact that be combined intellect and character with a dynamic capacity as a man of action.

THE MUSIC OF INDIA

Madras is going to wear a festive air in the month of December because "the season" will have begun. It is not the weather that is being discussed here but music. A stranger to Madras may very well wonder how crazy Madrasis can be to have a music "season"! In no other city is music celebrated on the level of a festival, without an actual or official festival organised for the purpose. It is not like the Berlin or the Scarborough festival, but is of spontaneous growth, with Vidwans from the entire south converging upon the focal point of so much exhibition of musical talent.

Since the 1960's it is not strange to find westerners and Japanese forming part of the audience listening in rapt concentration, and taking part in the discussions and truly Madras can be said to be the leader of cultural activities in the month of December.

Indian music has its roots in the Vedas. The recitation of the Vedas has a pronounced musical basis and the Sama Veda, from which is born the word sama gana has the notes of Karaharapriya Raga in its recitation. The Tamil Temple has a rich storehouse of musical tradition. Ancient Panns such as Bhairavi, Ananda Bhairavi, Kedara Gowla, Nilambari etc. forming a solid foundation of melody from which Indian musical genius has shaped subsequent musical grammer.

Hindustani music prevalent in the North might sound strange and different to the ear exposed purely to Karnatic music but it is not really so. Both have a common origin in the basic seven swaras or notes and the ragas have common structures. The growth took different directions since the 15th century, the North Indian music adapting itself to the taste of the invaders while Kshetrangya in the 16th century and Venkatamukhi and Purandara Dasa in the next century gave grammer and content to Karnatic music. In fact it is Venkatamukhi's masterly exposition of the grammer of swaras and ragas dividing the original hormonies or ragas into seventy two which stands as a first definitive treatise in Karnatic music.

Kshetrangya, a 16th century Vidwan from the Andhra Pradesh region was wholly inspired by Jayadeva and rendered more than 4,000 compositions known as 'Padams'. The surviving compositions are sung even to-day and a mature Bharata Natyam dancer can not but include one in her repertoire since the Padam is essentially meant as dance music. He introduced the Nayika Nayaka Bhava in the musical form, meant as the main expression of the dance form and even to-day the Padam in Bharata Natyam can not ignore the interpretation. The actual wording of the song might be portraying the Sringara Rasa in the mundane plane but the expression is that of the individual soul yearning for union with the Brahman or supreme bliss. It might sound strange that this should form the vehicle of expression when the paths of Gnana (Knowledge) and Bhakthi are open, but are they capable of such physical expression ?

Here an inciddnt in the life of Mira Bai, the great saint of Rajasthan will not be out of place. She was on her way to visit Brindavan when she went to meet a saint who had made a vow never to see a woman. He therefore, refused to meet Mira Bai. She said to the disciple "please tell your swami that does he not know that we are all but women before the Universal Soul, the Parama Purusha?" The swami then understood the superficiality of the difference based on mere sex and was honoured to receive Mira Bai.

Sangeetham or Sangeeth is used for both music and dancing. These fine arts are closely connected in such a way that it is almost impossible to separate them. As I said in an earlier para Karnatic Music received the main impetus from Kshetrangya's Padams, meant to be the vehicle for dance. The word Padam has many connotations, according to the dictionary it means naturity or ripeness ; the raga has to be handled maturely, each Swara phrase conveyingthe Bhava even without the help of the words. Indeed, it is this eloquence of the musical phrase, which gives content to the music and breaks the language barrier in the enjoyment of music or dance. Padam also denotes the maturity of the dancer to understand the musical, artistic and actual meaning of the song. Padam also is the last item in the dance, literally after preparation of the audience through dance forms which exhibit lesser degrees of attainments that is, Varnam, Jatiswaram, etc., so that the audience is prepared for the piece de resistance, that is, the main item of the Bharata Natyam programme.

But then music is not the mere sevitor of the dance, though it is an integral part. The musician, whether an instrumentalist or vocalist has to attune himself to and unify in himself the immememorable components to produce a composition which is pleasing to the ear and through the effect of the sound, move the listener emotionally and intellectually.

First comes the shruti or the basic pitch. This refers to the position of any sound in the numerical scale of acuteness, depending on the rapidity of the particles of air in contact with the ear. A low number results in low vibration and low pitched noise and vice versa. The Indian musical system has constructed hormonies on the basis of basic or Aadhra Shrutis, depending of course on the individual capacity of the musician. The Western system of music recognises no such bounds but wanders freely over nine to eleven octaves that is the entire range of sounds capable of being heard by the human ear. But once an Indian musician selects the basic shruti, the harmonic variations range over about 3.5 octaves which is the normal capacity of human vocal chords.

Then come the swaras. Though there are basically seven swaras except for Shadjama and Panchama which are fixed in the scale, the others, namely, rishabha, gandhara, dhaivata and nishada are capable of 3 variations each while the madh-

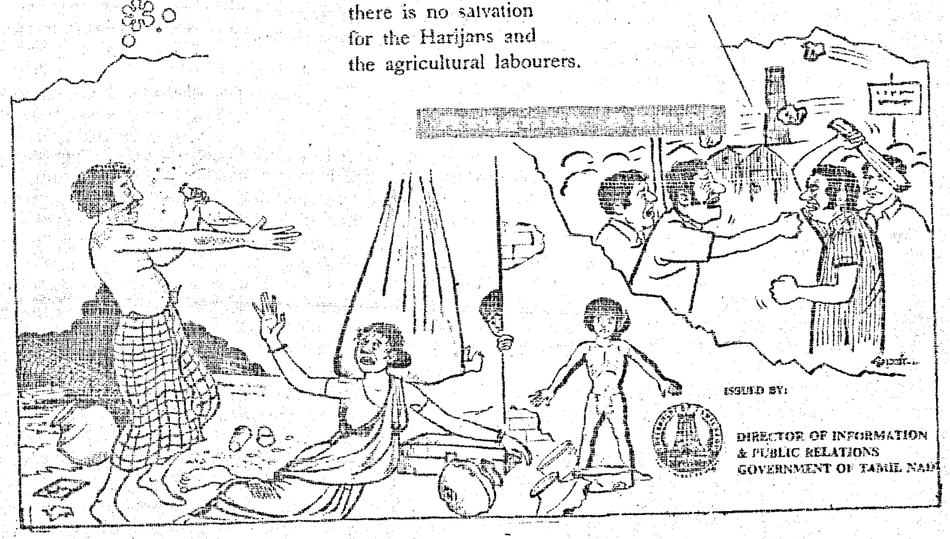
Selvi R. VIJAYALAKSHMI,
I.R.S.,

LET US ABOLISH ALCOHOLIC DRINKS TO ENSURE THE HAPPINESS

It appears that there can be no greater evil
in the world, than the seggregation
of Harijans in India.
We will be paying our debt
of gratitude to Mahatma Gandhi
by eradicating this evil.

Alcohol destroys our body, our character
and our wisdom.
Diseases like malaria affect only the body.
Alcohol and drugs destroy
the soul as well as the body.

If there is no prohibition
there is no salvation
for the Harijans and
the agricultural labourers.



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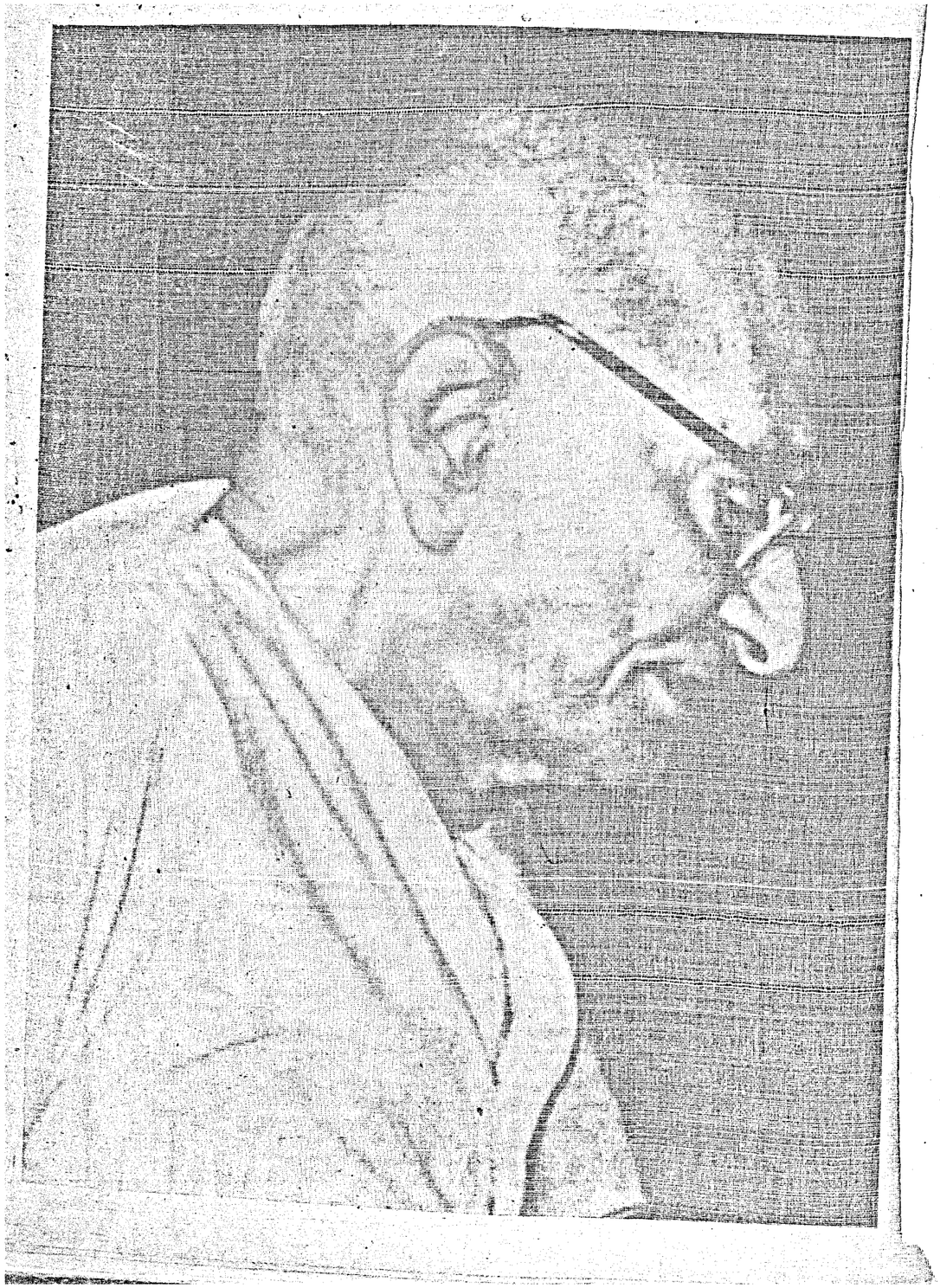
GOVERNMENT OF TAMIL NADU



He had rarely been equalled as an administrator. His unparalleled administrative capcity could he seen during his Prince Ministership of composite Madras-state in the years of provincial autonomy. His vision and far-sightedness are legends. He saw far ahead of the times while others were carried away by momentary impulses. It was Rajaji who pleaded for the ban on nuclear weapons, for the benefit of humanity. At the same time he stressed the need for scientific and technical education for the betterment of the people. These instances present Rajaji as a balanced personality, avoiding extremes and striking the golden mean for the benefit of humanity. He had that unfailing, uplifted mental and moral vision, combined with the art of adroit and practical management of men and affairs, which is so essential for those who guide the footsteps of nations.

As a true democrat, Rajaji turned down the idea of starting special schools to encourage talent. He boldly said, "India wants equality, not excellence." His sympathy for the poor and the downtrodden found concrete expression in his Harijan uplift work and agriculturists debt relief measures. Plain living and high thinking were the hall-marks of his life.

Rajaji the man, was lonely and restless in spirit. He was an intimitable wit and humorist, an unpredictable cynic, the sage and the dissenter. The pomp and pageantry of the Government House of Delhi when he held the highest post of the country held no lure to him. He lived amidst pomp and glory like a Rajarishi.

An intellect of a high calibre, he believed in the existence of God. His writings prove that he was a great scholar and philospher. His bold conviction had given him the strength to be a fearless fighter for the cause of truth. When differences of opinion occurred between him and Gandhiji, he had the boldness to express them. Gandhiji said, Rajaji is one of my oldest friends and was known to be the best exponent in word and deed of all I stand for. In 1942 he differed from me. All honour for the boldness with which he publicly avowed the difference."

He was a great social reformer never afraid to act according to his belief. His political wisdom and integrity are beyond question.

GANDHIJI SAID RAJAJI IS ONE OF MY OLDEST FRIEND AND WAS KNOWN TO BE THE BEST EXPONENT IN WORD AND DEED OF ALL I STAND FOR

Prohibition movement :

Of the Congress stalwarts Rajaji has been championing prohibition, ever since he took up politics. The All-India Policy on prohibition has been influenced by Rajaji, the prime protagonist, second only to Gandhiji. It was Rajaji as the Chief Minister of Madras who placed the Madras Prohibition Act in the Statute Book in the year, 1937.

Rajaji who was a deep thinker concluded that the labourers and workers forming the lowest strata of society resorted to the drink evil as an escapist measure. However, their real problems of poverty continued to plague them.

To release them from the clutches of drink prohibition was the only answer. And Rajaji relentlessly waged a war against it.

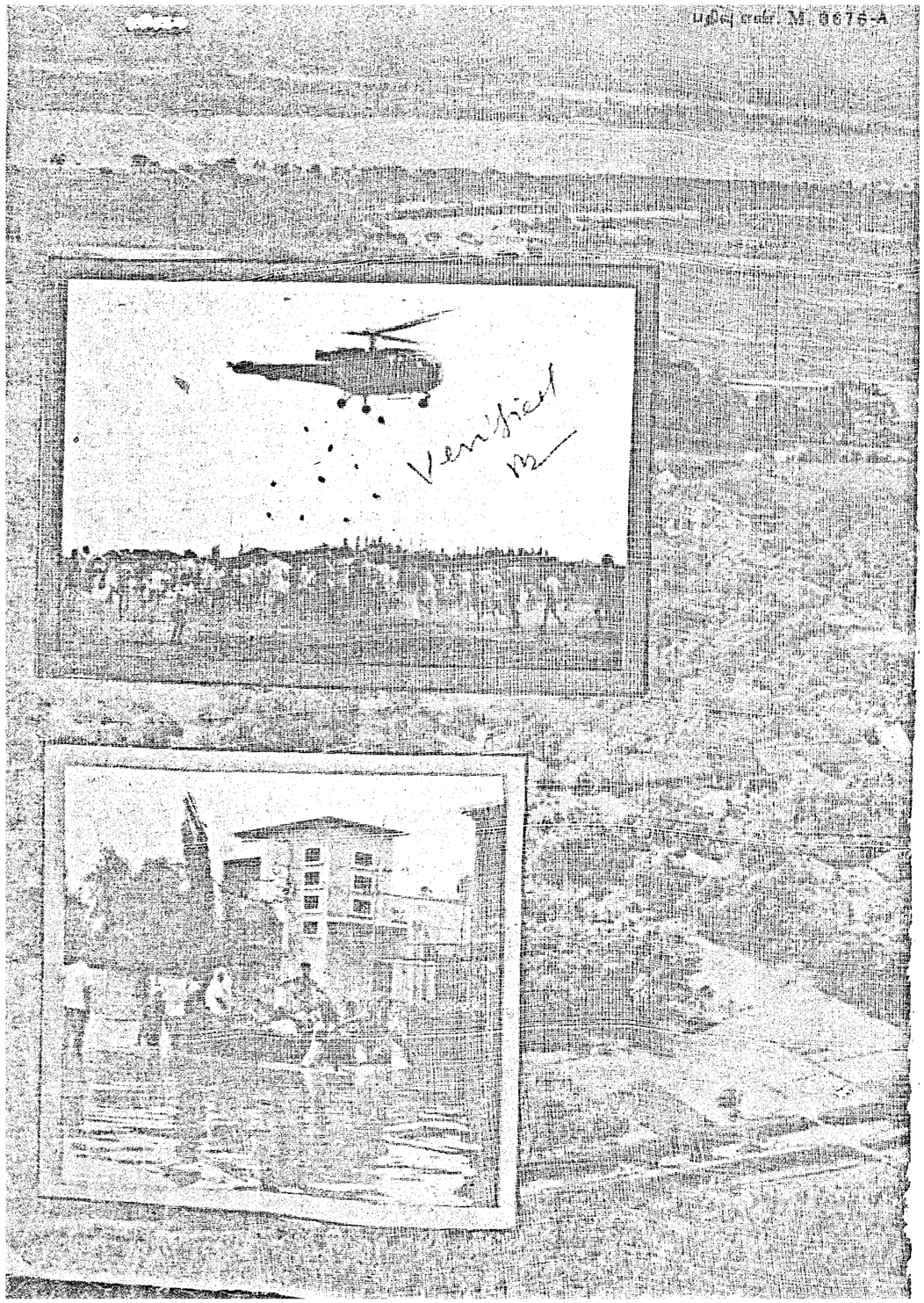
Sales Tax :

Rajaji introduced the Sales Tax. This measure was thought of as a compensation for loss due to prohibition. However, this innovation became acceptable by taxation authorities all over the world.

Rajaji was very sincere and honest that he hated all mean and corrupt practices. His life was very orderly and it could be seen in his punctilions ways. He was very through in whatever he did. Rajaji had an engaging personality. He was intensely god-fearing. He had an indomitable will. His great perseverance and abundant energy proved his zest for living.

He had a great sense of humour and bubbling humanism which did not hamper his detached ways. An extraordinary personality of great moral heights, he religiously practised all that he preached. He hated the idea of cheap popularity and was averse to flattery. He was essentially conservative in nature and he never let his sentiments lead him along the path of unreason.

The spirit knows no youth, or age, no fatigue or death, only a man nourished by deep spiritual sustenance and by an abiding unconquerable faith could think and labour as Rajaji did. His innate humility made him conscious that he was only a humble instrument for carrying out the design of the higher forces that shape the destinies of men.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